DRINK SPIKING:
AN INVESTIGATION OF ITS OCCURRENCE AND PREDICTORS OF PERPETRATION AND VICTIMISATION

A thesis submitted in partial fulfilment of the requirements for the degree of Doctor of Psychology

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DECLARATION

I certify that except where due acknowledgement has been made, the work is that of the author alone; the work has not been submitted previously, in whole or in part, to qualify for any other academic award; the content of the thesis is the result of work which has been carried out since the official commencement date of the approved research program; and, any editorial work, paid or unpaid, carried out by a third party is acknowledged.

Bridget Anne McPherson

29th March 2007
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DISSEMINATION INFORMATION

Sections of this thesis have been disseminated as refereed articles and a conference presentation. The candidate has taken primary authorship on these papers.


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ABSTRACT

The current study assessed features associated with drink spiking, or the adding of a substance to another person’s drink without the consumer’s knowledge or consent. A sample of 805 Australians, aged 18-35 years, completed a survey designed to measure the occurrence and predictors of the perpetration and victimisation of drink spiking. Almost half of the sample reported at least one experience of purchasing or mixing cocktails for others (49% and 45%, respectively), while smaller proportions reported adding alcohol to punch (26%) and adding alcoholic shots to alcoholic beverages belonging to other people (16%). A number of participants also reported previous experience of adding alcoholic shots to non-alcoholic beverages (6%), adding prescription or illicit substances to alcoholic beverages (1%), adding substances to non-alcoholic beverages (1%), and adding substances to punch (1%).

Purchasing or mixing cocktails for others, adding alcohol to punch, or adding alcoholic shots to alcoholic beverages were predicted by beliefs that deliberately causing intoxication in others is acceptable and that alcohol consumption by others is indicative of their sexual attraction to participants. Engagement in these behaviours was also predicted by participants’ illicit substance use and participation in casual sexual activity. Adding prescription or illicit substances to other people’s beverages, or adding alcoholic shots to non-alcoholic beverages, were predicted by the belief that alcohol consumption increases one’s confidence and sexual responsiveness, and by participants’ use of narcotics and sedatives. Perpetrators were predominantly motivated by a wish to have fun or to increase the likelihood of engaging in consensual sexual activity.

With regard to victimisation of drink spiking, 26% of the sample reported at least one victimisation. The majority of incidents occurred in
licensed venues, after the participant had engaged in such low supervisory behaviours as leaving their drink unattended or accepting a drink without observing its preparation. Most participants established a belief that they had been spiked after experiencing a degree of intoxication that was beyond their expected level (based on the amount of alcohol consumption), or after experiencing such physiological symptoms as vomiting, hallucinations, lack of coordination, or unconsciousness. Despite such experiences, 85% of victims did not report the incident to authorities. Victimisation in general was predicted by participants’ use of stimulant and hallucinogenic substances. Female victimisation was predicted by previous episodes of victimisation of oral sexual assault. Victimisation was not affected by participants’ degree of supervision of their drinks.

These findings provided empirical evidence that drink spiking is committed primarily for the purposes of creating a fun, entertaining situation. However, it was also apparent that drink spiking is perpetrated in an attempt to encourage participation in consensual sexual activity; this was particularly the case in incidents involving the addition of substances, as opposed to alcohol, to beverages belonging to others.

In a minority of cases, it was evident that drink spiking was utilised for the commission of sexual assault; moreover, the use of drink spiking to facilitate consensual sexual activity may have resulted in the perpetration of sexual assault as a result of the influence of alcohol myopia and misperception. Although predictors of victimisation were relatively weak, it was apparent that victims participate in higher levels of risk-taking behaviours than non-victims, particularly substance use, and may experience difficulties with recognising and avoiding risk of victimisation.

Conclusions regarding the motivations held by perpetrators of drink spiking and the post-spiking experiences of victims informed the
provision of recommendations for intervention for victims and prevention programs aimed at reducing the incidence of victimisation in the future.
CHAPTER 1
INTRODUCTION AND RATIONALE FOR THE CURRENT STUDY

Drink spiking is increasingly recognised as an issue of concern throughout Western society. Yet, an understanding of the motivations for perpetration and the risk factors for victimisation is marred by a lack of empirical evidence and a reliance on anecdotal reports. As a consequence, information presented to the public via the media and awareness campaigns is often conflicting. Not surprisingly, potential targets of drink spiking often have little, if any, understanding of its prevalence, likelihood, or consequences.

The most comprehensive study of drink spiking in Australia to date is that conducted by Taylor, Prichard, and Charlton (2004), which provided information regarding the incidence of drink spiking in Australia, and detailed characteristics of victimisation, thereby significantly advancing the current state of knowledge regarding spiking. However, investigation of the beliefs, attitudes, and motivations held by perpetrators is yet to be undertaken. In addition, risk and protective factors for victimisation have not yet been empirically explored.

An initial aim of the current study was to investigate the prevalence of drink spiking amongst young Australian adults. Investigation of both frequency of perpetration and victimisation was viewed as vital to obtaining an accurate indication of the degree to which drink spiking occurs within Australia. In addition, further investigation of the characteristics associated with drink spiking victimisation was considered to be imperative.

The current study also aimed to identify predictors of both perpetration and victimisation of drink spiking. Both anecdotal and empirical evidence, albeit limited, has demonstrated the existence of an association between drink spiking and sexual assault. Indeed, Taylor
et al. (2004) determined that approximately one-third of suspected
drink spiking incidents in Australia involved sexual assault, and
concluded that “…sexual assault is the primary criminal victimisation
associated with drink spiking” (page xiv). At the present time, the
factors associated with both perpetration and victimisation of drink
spiking are unknown; however, given the apparent relationship
between drink spiking and sexual assault, it was hypothesised that the
factors associated with sexual assault may also be associated with
drink spiking. For this reason, the current study identified a number of
factors that have been related to the perpetration and victimisation of
sexual assault, in order to establish an understanding of factors that
may impact upon the occurrence of drink spiking.

Chapter 2 therefore explores characteristics relating to sexual
assault. Consideration is given to stranger, acquaintance and date
sexual assault, providing details of prevalence and aspects of typical
assaults, such as location of assaults, methods of committing assaults,
and forms of resistance employed by victims. This discussion
incorporates examination of the experiences of both heterosexual and
homosexual people with regard to sexual assault victimisation. For the
purposes of this study, the term ‘homosexual’ incorporates gay men,
lesbian women, and bisexual men and women; each of these terms
are used throughout the study.

Factors that are typically associated with the perpetration of
sexual assault are also examined in Chapter 2, including alcohol use,
alcohol expectancies, alcohol myopia, and misperception of cues.
Factors that have been related to victimisation of sexual assault are
then explored. These variables include alcohol and substance use,
previous sexual assault victimisation, and risk recognition.

Chapter 3 then examines the previous research relating to drink
spiking and drug-facilitated sexual assault, providing details of the
characteristics of both behaviours. Theoretical consideration is then
given to the possible motivations held by perpetrators of drink spiking, including those relating to sexual assault and those involving more recreational desires, such as sharing positive experiences and having fun. The experiences of victims of drink spiking are then assessed. Both physiological and psychological effects of victimisation are reported, in addition to the difficulties associated with reporting victimisation of drink spiking. Finally, previous attempts to reduce the incidence of victimisation are discussed. These include law reforms, prevention campaigns, and recommendations for intervention and prevention.

Chapters 4 and 5 provide details of the method and results of the current study, in which 805 young Australian adults provided self-report information regarding perpetration and victimisation of drink-spiking, in addition to the range of sexual assault predictors.

Chapter 6 then examines the findings of the current study in the context of the information provided in Chapters 2 and 3. Information provided by participants regarding the relationships between sexual assault predictors and drink spiking perpetration and victimisation are then utilised in the provision of recommendations for intervention and prevention efforts.
CHAPTER 2
SEXUAL ASSAULT

Part 1. Stranger, Acquaintance and Date Sexual Assault

Although legal definitions of sexual assault previously focussed on female victims only, thus neglecting the possibility of men experiencing sexual assault (Krahe, Scheinberger-Olwig, & Bieneck, 2003), recent definitions have included both genders as potential perpetrators and victims. In addition, definitions used in prominent sexual assault research have delineated between sexual assault in general, and specific acts, such as rape. Sexual assault, or sexual aggression, is generally defined as encompassing a group of sexual acts performed against the will or consent of an involved participant. Definitions indicate that such acts may include kissing, touching, stroking, or oral, anal, or vaginal contact or penetration. Such acts are performed though the use of verbal pressure or coercion, threat or use of physical force, or exploitation of the victim’s incapacity to resist (Abbey, 2002; Abbey, McAuslan, & Ross, 1998; Krahe, Schutze, Fritsche, & Waizenhofer, 2000; Mouzos & Makkai, 2004; Testa & Livingston, 2000). Rape, in particular, is defined as non-consensual sexual acts that involve some type of penetration (Abbey, 2002); this may involve penetration of the vagina or anus with a penis, finger, or object or penile penetration of the mouth (Griffiths, 2000). A clear distinction is therefore made between sexual assault and the more specific act of rape.

Sexual assault research also differentiates between types of sexual assault based on the relationship between the offender and victim. Sexual assault perpetrated by an offender who is unknown to the victim prior to the sexual act is typically termed “stranger rape” (Rickert & Wiemann, 1998), whereas sexual assault committed by persons known to the victim are generally termed “acquaintance
rape” or “date rape” – both terms are used to define sexual assaults that occur in the context of some degree of personal social relationship (Russo, 2000), with the latter specifying assaults that occur between two people who are involved in a romantic relationship (Rickert & Wiemann, 1998).

These definitions are generally used to describe a range of non-consensual sexual activities, and are not limited to instances that feature rape. Similarly, the current study focuses on various forms of sexual assault, including rape in addition to other non-penetrative sexual acts. For this reason, the term “stranger sexual assault” will be used to define acts of sexual assault, including rape, perpetrated by a person unknown to the victim. “Acquaintance sexual assault” will refer to acts of sexual assault, including rape, perpetrated by a person known to the victim, but not in a romantic relationship with the victim. “Date sexual assault” will be used to describe acts of sexual assault, including rape, perpetrated in the context of a romantic relationship.

It should also be noted that the research conducted in Australia with regard to sexual assault is somewhat limited. Although several national surveys have comprehensively investigated issues of prevalence, research investigating risk factors for both perpetration and victimisation has not been conducted with Australian samples to any notable degree. For this reason, much of the following information relating to risk factors outlines studies undertaken in other Western countries, generally focussing of the USA and countries in the United Kingdom. Although this is somewhat problematic and comparisons between studies are subject to cultural differences in samples, it is generally the method utilised by the small number of studies in Australia that have investigated risk factors (e.g., Lievore, 2005). In addition, various studies examining other aspects of sexual assault have been conducted in Australia, some of which have obtained findings that are similar to those obtained in the USA and UK. For example, Xenos and
Smith (2001) investigated perception of blame in incidents of sexual assault amongst young adults in Australia and concluded that their findings “…mirror those reported in overseas research” (p. 1113) and were “…consistent with expectations derived from American studies” (p. 1113). It can therefore be assumed that some degree of cultural similarity exists.

**Stranger Sexual Assault**

**Prevalence**

Prior to the mid-1970s, it was generally assumed that all sexual assaults were perpetrated by men who were unknown to their female victims (Kahn & Andreoli Mathie, 2000). Subsequently, greater focus within psychological literature has been placed on sexual assault perpetrated by persons known to the victim.

Nonetheless, a great deal of literature has investigated the prevalence of stranger sexual assault. In Australia, the Personal Safety Survey determined that 1.3% of the 7,693,100 female participants and 0.6% of the 7,478,100 male participants had experienced a sexual assault during the 12 months prior to the survey. Of these, 22% of the women and 33% of the men had experienced a stranger sexual assault in the most recent incident (Australian Bureau of Statistics, 2005).

**Female victims.** A slightly higher prevalence rate than that obtained in the Personal Safety Survey was identified in the Australian component of the International Violence Against Women Survey – of the 6,677 female participants (age: 18-69 years), 4% reported experiencing a sexual assault in the prior 12 months (Mouzos & Makkai, 2004). Studies of younger samples from overseas countries have obtained somewhat higher prevalence rates, ranging from 10% (Testa, Livingston, Vanzile-Tamsen, and Frone, 2003) to 19% (Scott and Aneshensel, 1997). One recent study obtained a notably higher prevalence rate amongst a general population sample in the USA – of the 1,325 women (age: 18-96 years, M = 46.0) surveyed, 38% reported
at least one experience of sexual assault during their lifetime (Casey & Nurius, 2006). This finding may indicate an increase in prevalence of sexual assault victimisation over time, although further investigation is clearly required.

**Male victims.** The majority of studies investigating sexual assault have focussed on the prevalence and characteristics of women’s sexual victimisation (Krahe et al., 2003). In fact, Coxell and King (1996) contended that until 1982, research on male victims of sexual assault was non-existent. However, despite this progression towards recognition of men as potential sexual assault victims, the lack of empirical studies investigating male victimisation continues to be a persistent issue. Commentators in the 1990s maintained that there was little available research assessing male victimisation amongst samples other than those in institutional settings (e.g., King, 1992; Stermac, Sheridan, Davidson, & Dunn, 1996) while more recently, it has been argued that evidence of the prevalence of male victimisation remains limited (Krahe et al., 2000).

Studies investigating the prevalence of the perpetration of sexual assault against men by women are sparse (Anderson, 1998). Of the limited research available, it appears that women tend to perpetrate sexual aggression against men in the context of friendships or intimate relationships (e.g., Struckman-Johnson & Struckman-Johnson, 1998) and are rarely perpetrated by women unknown to the victim.

**Homosexual victimisation.** Researchers have contended that because men perpetrate sexual assault more frequently than women do, homosexual men, who seek sexual contacts with men, are at high risk of experiencing sexual assault (Krahe et al., 2000). However, prevalence rates obtained via empirical research vary widely. For example, Hickson and colleagues (1994) investigated the sexual assault experiences of 930 homosexual men (age: $M = 29.0$) in England and Wales. It was determined that 35% of participants had
experienced non-consensual anal penetration, while an additional 27% reported being forced to perform fellatio, masturbation, interfemoral intercourse or attempted anal intercourse on an unknown man. The prevalence rate obtained amongst a sample of homosexual German men (age: $M = 21.8$, $SD = 3.6$) was somewhat lower, with approximately 15% of participants reported experiencing the use or threat of force in an attempt to make them comply with the sexual demands of another man (Krahe et al., 2000).

Studies investigating lesbian sexual assault are even more scarce than those exploring homosexual male sexual assault. Again, prevalence rates for lesbian victimisation are very varied. To date, the largest study of lesbian, gay and bisexual sexual assault victimisation is that conducted by Balsam, Rothblum, and Beauchaine (2005). This study determined that 16% of lesbian women and 17% of bisexual women had experienced a rape during adulthood. In contrast, Otis and Skinner (1996) revealed lower prevalence rates of sexual assault in general, but indicated that lesbians may be at greater risk of experiencing assaults perpetrated by men than by women. Of the 500 lesbian participants (age: $M = 34.4$), 4% had been victimised by a member of the opposite sex, while 1% had experienced same-sex victimisation.

**Summary**

Although rates of stranger sexual assault are variable, and research regarding male and gay and lesbian victimisation is scarce, the above literature indicates that various forms of sexual assault are experienced by both male and female victims of the community. It is apparent that both homosexual and bisexual men and women are at greater risk of experiencing sexual assault than their heterosexual counterparts (Balsam et al., 2005).
Acquaintance and Date Sexual Assault

A large body of literature indicates that it is far more likely that young people will experience a sexual assault perpetrated by someone known to them, as opposed to an unknown offender (e.g., Abbey et al., 1998; Muehlenhard & Linton, 1987). Given that the current study is focussed on the experiences of a sample of young people, the following section will examine the prevalence and characteristics of acquaintance and date sexual assault, both in Australia and overseas.

It is the consensual view within the sexual assault literature that Koss, Gidycz, and Wisniewski (1987) were the first to reveal that instances of sexual assault perpetrated by known persons are far more frequent amongst young adults than those perpetrated by strangers. This study raised questions as to the accuracy of both popular and professional conceptions of sexual assault. As assumptions regarding sexual assault had previously focussed on perpetration by strangers, the discovery of the high incidence of acquaintance and date sexual assault created some confusion within the community. It was proposed that sexual assault perpetrated by a person known to the victim was not considered to be as serious an offence as that perpetrated by an unknown offender, and was therefore unlikely to cause the same traumatic effects for the victim (Bechhofer & Parrot, 1991). It was also theorised that because date sexual assault, in particular, tends to involve the victim’s consent to some level of sexual activity but not to more intimate activity (Gross, Bennett, Sloan, Marx, & Juergens, 2001), the victim usually experiences reactions associated with sexual assault, while the perpetrator fails to perceive that an inappropriate behaviour has occurred (Rickert & Wiemann, 1998).

Prevalence

Prevalence of sexual assault. Since Koss and colleagues’ (1987) pioneering work, a number of studies have subsequently investigated the prevalence of acquaintance and date sexual assault, particularly
in college samples. Table 1 presents prevalence findings from a number of studies exploring the experience of acquaintance and date sexual assault as reported by female victims in heterosexual relationships. In all studies, participants indicated that the assailant was male. It should be noted that some studies did not state whether occurrences of sexual assault reported by participants were in fact instances of date or acquaintance sexual assault, as opposed to stranger sexual assault. However, in cases where samples comprised young people or college students, it has been assumed that date or acquaintance sexual assault are more prevalent than occurrences of stranger sexual assault given that (i) such types of sexual assault are more common amongst young people (refer to sections above) and (ii) these studies discuss their findings in the context of acquaintance and date sexual assault. It was therefore assumed that such studies are representations of the prevalence of acquaintance and date sexual assault. Studies are presented in chronological order. The varying prevalence rates, which were likely to be affected by methodological issues (e.g., inconsistent time periods assessed by the different measures used among studies), result in difficulties with generalising findings and establishing conclusive prevalence rates. However, with prevalence rates ranging from 18% (Wilson, Calhoun, & Bernat, 1999) to 78% (Muehlenhard & Linton, 1987) and an estimated incidence rate of 166 per 1,000 women in a 12-month period (Koss et al., 1987), it is reasonable to conclude that young women, particularly college students, are susceptible to sexual assault victimisation perpetrated by male acquaintances and intimate partners.
Table 1

Prevalence Data of Male-Perpetrated Date and Acquaintance Sexual Assault of Female Victims, as Reported by Female Participants

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year of publication</th>
<th>Sample Description</th>
<th>Percentage of women who experienced sexual assault</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kanin</td>
<td>1957</td>
<td>262 female college students, USA, age: $M = 17.8$</td>
<td>62% during year preceding college</td>
</tr>
<tr>
<td>Kirkpatrick &amp; Kanin</td>
<td>1957</td>
<td>291 female college students, USA</td>
<td>56% during one academic year</td>
</tr>
<tr>
<td>Koss &amp; Oros</td>
<td>1982</td>
<td>2,016 female college students, USA, aged 18-45 years ($M = 21.0$)</td>
<td>3%-30% over lifetime</td>
</tr>
<tr>
<td>Koss, Gidycz, &amp; Wisnewski</td>
<td>1987</td>
<td>3,187 female college students, USA, age: $M = 21.4$</td>
<td>54% since age 14</td>
</tr>
<tr>
<td>Muehlenhard &amp; Linton</td>
<td>1987</td>
<td>341 female college students, USA, age: $M = 18.8$</td>
<td>78% during high school or college</td>
</tr>
<tr>
<td>Aizenman &amp; Kelley</td>
<td>1988</td>
<td>204 female college students, USA, age: $M = 20.3, SD = 1.73$</td>
<td>22% acquaintance rape &amp; 29% forced intercourse during casual or steady relationships</td>
</tr>
<tr>
<td>Mills &amp; Granoff</td>
<td>1991</td>
<td>113 female college students, USA, age: $M = 22.0$</td>
<td>10%-32% over lifetime</td>
</tr>
<tr>
<td>Abbey, Ross, McDuffie, &amp; McAuslan</td>
<td>1996</td>
<td>1,160 female college students, USA</td>
<td>59% since age 14</td>
</tr>
<tr>
<td>Greene &amp; Navarro</td>
<td>1998</td>
<td>274 female college students, USA</td>
<td>61% since age 14</td>
</tr>
<tr>
<td>Author(s)</td>
<td>Year of publication</td>
<td>Sample</td>
<td>Percentage of women who experienced sexual assault</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------------</td>
<td>------------------------------------------------------------------------</td>
<td>---------------------------------------------------</td>
</tr>
<tr>
<td>Larimer, Lydum, Anderson, &amp; Turner</td>
<td>1999</td>
<td>131 female college students, USA, age: $M = 19.0$</td>
<td>28% since age 14</td>
</tr>
<tr>
<td>Wilson, Calhoun, &amp; Bernat</td>
<td>1999</td>
<td>330 female college students, USA, aged 15-27 years ($M = 19.5, SD = 1.3$)</td>
<td>11% one incident since age 14, 18% multiple incidents since age 14</td>
</tr>
<tr>
<td>Testa &amp; Livingston</td>
<td>2000</td>
<td>190 women at Time 1, 93 at Time 2 (12 months after Time 1), USA, aged 20-35 years ($M = 24.3, SD = 3.6$), 50% college students</td>
<td>68% since age 18 at Time 1, 31% during period between Time 1 and Time 2</td>
</tr>
<tr>
<td>Combs-Lane &amp; Smith</td>
<td>2002</td>
<td>190 female college students at Time 1, 126 at Time 2 (5.5 months after Time 1), USA, aged 17-22 years ($M = 19.0, SD = 1.1$)</td>
<td>22% at Time 1 since age 14 , 13% during period between Time 1 and Time 2</td>
</tr>
<tr>
<td>Davis, Combs-Lane, &amp; Jackson</td>
<td>2002</td>
<td>310 female college students, USA, aged 18-22 years ($M = 19.4, SD = 1.1$)</td>
<td>19% sexual assault, 7% sexual and physical assault over lifetime</td>
</tr>
<tr>
<td>Testa, VanZile-Tamsen, Livingston, &amp; Koss</td>
<td>2004</td>
<td>1,014 women, USA, aged 18-30 years ($M = 23.8, SD = 3.7$)</td>
<td>38% since age 14</td>
</tr>
<tr>
<td>Mohler-Kuo, Dowdall, Koss, &amp; Wechsler</td>
<td>2004</td>
<td>8,567 female college students in 1997, 8,425 female college students in 1999, 6,988 female college students in 2001, USA, 50% under 21 years of age</td>
<td>Approx. 1 in 20 since beginning of school year</td>
</tr>
</tbody>
</table>
Table 2 outlines prevalence data from studies exploring the experience of acquaintance and date sexual assault, as reported by male perpetrators against female victims in heterosexual relationships. Again, in cases where samples consisted of young people or college students, it was assumed that date or acquaintance sexual assaults were more prevalent than occurrences of stranger sexual assault and that these studies are therefore indications of the prevalence of assaults committed by known persons. Again, studies are presented in chronological order. Although prevalence rates, when compared with those in Table 1, indicate that women are reporting victimisation more than men are reporting perpetration, a prevalence range of 10% (Larimer, Lydum, Anderson, & Turner, 1999) and 58% (Zawacki, Abbey, Buck, McAuslan, & Clinton-Sherrod, 2003) and an estimated incidence rate of 68 per 1,000 men in a 12-month period (Koss et al., 1987) indicates that young men, and male college students in particular, are perpetrating sexual assault to a considerable and concerning degree.

Table 3 and Table 4 present a number of studies investigating the prevalence rates of female perpetration of acquaintance and date sexual assault, as reported by male victims (Table 3) and female perpetrators (Table 4). Contrasting these rates are the findings of Stermac, Bove, and Addison (2004), who assessed reports made by people presenting to a sexual assault service in Canada between 1992 and 1999. Participants were 64 men who had been sexually assaulted by a stranger, 81 men who had been sexually assaulted by an acquaintance, and 106 women who had been assaulted by an acquaintance. The authors maintained that only 5% of men reported being assaulted by a female only. Again, this may reflect a lack of recognition of sexual assault incidents by persons who do not present to support services. An overview of the research in Tables 3 and 4 shows that perpetrators are reporting fewer incidences of sexual assault than victims, but a prevalence rate of up to 43% (Struckman-
Johnson & Struckman-Johnson, 1998) demonstrates that male victimisation of sexual assault is occurring, albeit to a lesser degree than female victimisation.
Table 2
Prevalence Data of Male-Perpetrated Date and Acquaintance Sexual Assault of Female Victims, as Reported by Male Participants

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year of publication</th>
<th>Sample</th>
<th>Percentage of men who perpetrated sexual assault</th>
</tr>
</thead>
<tbody>
<tr>
<td>Koss, Gidycz, &amp; Wisnewski</td>
<td>1987</td>
<td>2,972 male college students, USA, age: $M = 21.0$</td>
<td>25% since age 14</td>
</tr>
<tr>
<td>Muehlenhard &amp; Linton</td>
<td>1987</td>
<td>294 male college students, USA, age: $M = 19.5$</td>
<td>57% during high school or college</td>
</tr>
<tr>
<td>Mills &amp; Granoff</td>
<td>1991</td>
<td>106 male college students, USA, age: $M = 22.0$</td>
<td>2%-16% during lifetime</td>
</tr>
<tr>
<td>Calhoun, Bernat, Clum, &amp; Frame</td>
<td>1997</td>
<td>65 men, USA, age: $M = 19.9, SD = 1.3</td>
<td>22% since age 14</td>
</tr>
<tr>
<td>Abbey, McAuslan, &amp; Ross</td>
<td>1998</td>
<td>798 male college students, USA, aged 18-59 years (median = 22)</td>
<td>26% since age 14</td>
</tr>
<tr>
<td>Larimer, Lydum, Anderson, &amp; Turner</td>
<td>1999</td>
<td>165 male college students, USA, age: $M = 19.0$</td>
<td>10% since age 14</td>
</tr>
<tr>
<td>Abbey, McAuslan, Zawacki, Clinton, &amp; Buck</td>
<td>2001</td>
<td>343 male college students, USA, aged 18-53 years (median = 21)</td>
<td>33% since age 14</td>
</tr>
<tr>
<td>Zawacki, Abbey, Buck, McAuslan, &amp; Clinton-Sherrod</td>
<td>2003</td>
<td>356 male college students, USA, median age = 24</td>
<td>58% since age 14</td>
</tr>
</tbody>
</table>
Table 3
Prevalence Data of Female-Perpetrated Date and Acquaintance Sexual Assault of Male Victims, as Reported by Male Participants

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year of publication</th>
<th>Sample</th>
<th>Percentage of men who experienced sexual assault</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hickson</td>
<td>1994</td>
<td>930 men, England &amp; Wales, age: median = 29.0</td>
<td>4% over lifetime</td>
</tr>
<tr>
<td>Struckman-Johnson &amp; Struckman-Johnson</td>
<td>1998</td>
<td>314 male college students, USA, aged 18-45 years (M = 20.0)</td>
<td>43% since age 16</td>
</tr>
<tr>
<td>Larimer, Lydum, Anderson, &amp; Turner</td>
<td>1999</td>
<td>165 male college students, USA, age: M = 19.0</td>
<td>21% since age 14</td>
</tr>
<tr>
<td>Krahe, Scheinberger-Olwig, &amp; Bieneck</td>
<td>2003</td>
<td>247 men, Germany, aged 14-24 years (M = 18.3, SD = 1.7)</td>
<td>25% over lifetime</td>
</tr>
<tr>
<td>Krahe, Scheinberger-Olwig, &amp; Bieneck</td>
<td>2003</td>
<td>153 men, Germany, age: M = 22.3, SD = 2.1</td>
<td>30% over lifetime</td>
</tr>
</tbody>
</table>
Table 4
Prevalence Data of Female-Perpetrated Date and Acquaintance Sexual Assault of Male Victims, as Reported by Female Participants

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year of publication</th>
<th>Sample</th>
<th>Percentage of women who perpetrated sexual assault</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anderson</td>
<td>1998</td>
<td>461 female college students, USA</td>
<td>7%-43% over lifetime</td>
</tr>
<tr>
<td>Larimer, Lydum,</td>
<td>1999</td>
<td>131 female college students, USA, age: M</td>
<td>5% since age 14</td>
</tr>
<tr>
<td>Anderson, &amp; Turner</td>
<td></td>
<td>= 19.0</td>
<td></td>
</tr>
</tbody>
</table>
Table 5 and Table 6 include prevalence rates obtained by studies investigating the occurrence of acquaintance and date sexual assault in same-sex relationships. Although data on this issue is limited, and the rates reported by perpetrators and victims are inconsistent, it is apparent that the occurrence of sexual assault is not limited to heterosexual relationships. Indeed, one study found that gay, lesbian and bisexual participants had a significantly higher victimisation rate across their lifetime than heterosexual participants (Duncan, 1990), while others have concluded that homosexual sexual assault is in fact, “…surprisingly common…” (Davies, 2002, p. 205).

Table 5

Prevalence Data of Female-Perpetrated Date and Acquaintance Sexual Assault of Female Victims

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year of publication</th>
<th>Sample Description</th>
<th>Percentage of women who perpetrated sexual assault</th>
<th>Percentage of women who experienced sexual assault</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterman, Dawson, &amp; Bologna*</td>
<td>1989</td>
<td>34 female homosexual college students, USA, aged 17-36 years ($M = 23.0$)</td>
<td>8% over lifetime</td>
<td>31% over lifetime</td>
</tr>
</tbody>
</table>

* Note: This study questioned participants on sexual assault perpetrated by partners.
Table 6
Prevalence Data of Male-Perpetrated Date and Acquaintance Sexual Assault of Male Victims

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year of publication</th>
<th>Sample</th>
<th>Percentage of men who perpetrated sexual assault</th>
<th>Percentage of men who experienced sexual assault</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waterman, Dawson, &amp; Bologna*</td>
<td>1989</td>
<td>34 male homosexual college students, USA, aged 17-36 years ($M = 23.0$)</td>
<td>6% over lifetime</td>
<td>21% over lifetime</td>
</tr>
<tr>
<td>Hickson</td>
<td>1994</td>
<td>930 men, England &amp; Wales, age: median = 29.0</td>
<td>24% over lifetime</td>
<td></td>
</tr>
</tbody>
</table>

* Note: This study questioned participants on sexual assault perpetrated by partners.

Prevalence of attempted and completed rape. Prevalence data of attempted and completed rape are presented in Table 7 Table 8. These tables consider female victims of male-perpetrated assault only, and are presented in chronological order. Most studies determined that attempted and completed rape prevalence rates were generally lower than other forms of sexual assault, such as forced kissing and sexual coercion (e.g., Koss & Oros, 1982; Zawacki et al., 2003). However, it is clear that young women are subject to rape situations to a high degree. In addition, in many studies, particularly those utilising men’s reports of their own perpetration, rates of completed rape are higher than those of attempted rape, indicating that when attempts at non-consensual sexual intercourse are made, they are often successful.
Table 7

*Prevalence Data of Attempted or Completed Rape Reported by Female Victims*

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year of publication</th>
<th>Attempted rape</th>
<th>Completed rape</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kanin</td>
<td>1957</td>
<td>9%</td>
<td>N/A</td>
</tr>
<tr>
<td>Koss &amp; Oros</td>
<td>1982</td>
<td>N/A</td>
<td>6%</td>
</tr>
<tr>
<td>Koss, Gidycz, &amp; Wisniewski</td>
<td>1987</td>
<td>12%</td>
<td>15%</td>
</tr>
<tr>
<td>Muehlenhard &amp; Linton</td>
<td>1987</td>
<td>N/A</td>
<td>21%</td>
</tr>
<tr>
<td>Koss</td>
<td>1988</td>
<td>12%</td>
<td>16%</td>
</tr>
<tr>
<td>Mills &amp; Granoff</td>
<td>1991</td>
<td>22%</td>
<td>17%</td>
</tr>
<tr>
<td>Abbey, Ross, McDuffie, &amp; McAuslan</td>
<td>1996</td>
<td>8%</td>
<td>23%</td>
</tr>
<tr>
<td>Testa &amp; Livingston</td>
<td>2000</td>
<td>8%</td>
<td>7%</td>
</tr>
</tbody>
</table>

Table 8

*Prevalence Data of Attempted or Completed Rape of Female Victims, Reported by Male Perpetrators*

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year of publication</th>
<th>Attempted rape</th>
<th>Completed rape</th>
</tr>
</thead>
<tbody>
<tr>
<td>Koss, Gidycz, &amp; Wisniewski</td>
<td>1987</td>
<td>3%</td>
<td>4%</td>
</tr>
<tr>
<td>Muehlenhard &amp; Linton</td>
<td>1987</td>
<td>N/A</td>
<td>15%</td>
</tr>
<tr>
<td>Koss</td>
<td>1988</td>
<td>3%</td>
<td>5%</td>
</tr>
<tr>
<td>Mills &amp; Granoff</td>
<td>1991</td>
<td>9%</td>
<td>2%</td>
</tr>
<tr>
<td>Abbey, Ross, McDuffie, &amp; McAuslan</td>
<td>1996</td>
<td>1%</td>
<td>9%</td>
</tr>
<tr>
<td>Calhoun, Bernat, Clum, &amp; Frame</td>
<td>1997</td>
<td>N/A</td>
<td>6%</td>
</tr>
<tr>
<td>Abbey, McAuslan, &amp; Ross</td>
<td>1998</td>
<td>N/A</td>
<td>9%</td>
</tr>
<tr>
<td>Abbey, McAuslan, Zawacki, Clinton, &amp; Buck</td>
<td>2001</td>
<td>3%</td>
<td>5%</td>
</tr>
</tbody>
</table>
With regard to male victims, both heterosexual and homosexual, the specification of rape in the measures used is rare. However, the research that does make this discernment indicates that rape is more common than other forms of sexual assault. For example, in a study of 22 male victims in the United Kingdom, King (1992) established that while only 14% of male victims had experienced attempted anal intercourse, 77% were the victims of completed forced anal intercourse. Moreover, King (1992) reported that up to 50% of the male victims had been subject to other forms of sexual assault, including masturbation. Similarly, in the study by Hickson et al. (1994), 50% of participants were subject to attempted or completed anal penetration. This finding is consistent with that of Stermac et al. (2004) who reported that between 54% and 60% of participants had experienced anal assaults; indeed, anal penetration represented the most common form of reported assault.

**Prevalence in Australia.** The studies discussed generally assess the prevalence of acquaintance and date sexual assault in samples of young people in the USA and UK. The most recent study to investigate prevalence in Australia was the Personal Safety Survey, conducted in 2005. Of the 93,700 women who reported experiencing a sexual assault during the 12 months prior to the survey, 39% indicated that the perpetrator was a family member or friend, and 32% reported that the perpetrator was another known person. A significantly lower proportion of men reported experiencing a sexual assault; however, the proportion of acquaintance sexual assault was similar. Of the 47,300 men reporting an assault, 44% stated that the perpetrator was a family member or friend and 35% reported that the perpetrator was another known person (Australian Bureau of Statistics, 2005).

**Location of Sexual Assault**

Considerations of the locations that increase the likelihood of sexual assault occurring have generally indicated that such incidents
tend to occur in situations where a perpetrator and victim are not accompanied by others, or where a perpetrator has access to a number of potential victims. Koss (1988) determined that 86% of date or acquaintance sexual assaults occurred away from a university of college campus. Subsequent studies by Abbey and colleagues (Abbey, 2002; Abbey et al., 1998) estimated that two-thirds of such assaults occurred in either the perpetrator’s or the victim’s home. Ullman, Karabatsos, and Koss (1999) also revealed that more severe sexual assaults were more likely to occur during spontaneous or unplanned social gatherings, such as parties, than during planned situations, such as individual or group dates. The likelihood of sexual assaults occurring in homes is also apparent with regard to male victims. Participants in Stermac et al.’s (1996) study reported that a private home was the location of 43% of reported assaults, while private vehicles were the setting for an additional 14% of assaults.

**Methods of Committing Assault**

The weight of evidence indicates that a significant degree of both verbal coercion and forceful threats or actions are used in occurrences of acquaintance and date sexual assault, and that these methods are used both by both male and female perpetrators against both male and female victims. The research pertaining to male perpetrators and female victims displays a notable discrepancy in rates reported by offenders and victims. Koss and colleagues have provided support for these contentions via several empirical studies. For example, Koss and Oros (1982) established that 21% of the 2,016 women in their study reported that a man had threatened to use force in an attempted or completed sexual act, while 54% reported experiencing the use of force on such occasions. Of the 1,846 male participants, 4% reported using a threat of force with a female victim, and 14% reported using force to engage in sexual activity. Verbal coercion was experienced by 48% of female victims, and was used by
39% of male perpetrators. Similarly, Koss et al. (1987) revealed that 43% of their 3,187 female participants reported experiencing the threat or use of force in a date or acquaintance sexual assault situation, while 6% of the 2,972 male participants reported threatening or using force. Verbal coercion was reported by 69% of female victims, and 29% of men reported using this method of engaging in a sexual act.

Methods of committing date or acquaintance sexual assault against male victims have also been investigated. Female perpetrators in Struckman-Johnson and Struckman-Johnson’s (1998) study reported a significant degree of verbal coercion, including verbal persuasion (used by 75% of participants), bribes (used by 6% of participants) and threatening to end the relationship (used by 19% of participants). Eight percent of respondents reported using physical restraint, while 1% had inflicted physical harm in an attempt to engage in sexual activity with a male partner. Higher rates of such methods were reported by participants in Anderson’s (1998) study. Again, the use of verbal coercion was most prevalent, with women threatening to end the relationship with the male victim (used by 32% of participants), saying things they didn’t mean (used by 43% of participants), using verbal persuasion (used by 35% of participants), and questioning their partner’s sexuality (used by 33% of participants). With regard to physical force, 28% of participants reported threatening physical force, 20% reported using physical force, and 7% threatened to self-harm in order to partake in sexual activity with a male.

**Resisting Sexual Assault**

It has been asserted that female victims have difficulty in effectively resisting date or acquaintance sexual assault due to the fact that the perpetrator is often a familiar and trusted person. When asked to imagine being in a sexual assault situation, female participants have reported a moderate likelihood of using such resistance strategies as verbal assertiveness and a low likelihood of
using physical means to resist an unwanted sexual advance (Norris, Nurius, & Dimeff, 1996). In actual situations where an assault has been attempted or completed, women rated their efforts as being of moderate severity – 84% of the women in Koss’ (1988) study used verbal reasoning, while 70% physically struggled with their assailant. A slightly smaller proportion of female victims in Koss, Dinero, Seibel, and Cox’s (1988) study utilised similar resistance strategies, with 50% reasoning or pleading with the perpetrator, crying, running away, or physically struggling.

**Summary**

Although acquaintance and date sexual assault appear to affect female victims in heterosexual relationships, it is clear that young people of either gender or any sexuality are at risk of experiencing sexual assault perpetrated by a known person. This seems to be particularly the case during social situations involving isolated locations, especially during spontaneous intimate interactions. The use of verbal coercion and both threats or use of violence are frequent in such instances, resulting in some degree of verbal and physical resistance undertaken by victims.

**Part 2. Factors Associated With Perpetration of Sexual Assault**

Although the responsibility for any perpetration of non-consensual acts lies solely with offenders, as opposed to victims, regardless of the influence of such social or environmental factors as alcohol and substance consumption or miscommunication between involved parties (Abbey, 2002), the investigation of such factors permits the development of a greater understanding of risk and protective factors, thereby enabling the possible application of such knowledge to establishing a theoretical conception of the issue of drink spiking. The following reviews the findings of the body of literature that has investigated the association between substance consumption, particularly alcohol, and sexual assault perpetration. It is posited that
alcohol initially affects perpetration via the expectations held by perpetrators regarding the effects of alcohol on aggression and sexual interest. The effects of such expectations are compounded when perpetrators are alcohol-affected, resulting in their focus on cues that conform to their expectations. Such focus contributes to perpetrators’ misperception of the intentions held by victims, resulting in the commission of a sexual assault.

**Alcohol Use**

Although the impact of alcohol consumption on perpetration of sexual assault has been investigated for many years, the exact pathways through which alcohol affects such perpetration are not clearly understood (Campbell, Sefl, & Ahrens, 2004). Nonetheless, a significant portion of the psychological literature has investigated not only the presence of alcohol consumption in instances of assault perpetration, but also potential ways in which consumption contributes to perpetration.

**Prevalence of Alcohol Use in Sexual Assault Perpetration**

Research has consistently indicated that alcohol consumption is associated with the perpetration of aggressive acts, including sexual aggression (Gross et al., 2001). Indeed, it is widely accepted that not only is alcohol use, in general, related to the likelihood of perpetrating sexual assault, but it is also likely to feature as a precursor to specific acts of perpetration.

Recently, the World Health Organization (2006) reported that 37% of British men incarcerated for rape were alcohol dependent, while Abbey et al. (1998) concluded that alcohol use was related to an increased likelihood of committing sexual assault. In comparing sexual assault perpetrators with people who had not committed sexual assault, Zawacki, Abbey, Buck, McAuslan, and Clinton-Sherrod (2003) determined that the former consumed greater amounts of alcohol on a monthly basis than the latter. However, alcohol-using perpetrators
did not report significantly greater consumption levels than perpetrators who had not consumed alcohol at the time of the assault. In addition, perpetrators who did not consume alcohol at the time of the assault did not report greater monthly consumption than non-perpetrators. These findings suggest that alcohol consumption, in general, may increase the likelihood of a perpetrator consuming alcohol at the time of an assault; however, the likelihood of a person perpetrating a sexual assault is greater when they have consumed alcohol, as opposed to when they have not consumed alcohol, regardless of their overall consumption levels.

A number of studies have reported on prevalence rates of alcohol-involved sexual assaults, with most indicating that alcohol consumption is present during a significant proportion of sexual assaults, if not the majority of assaults. For example, Abbey and colleagues obtained prevalence rates of 35% (Abbey, McAuslan, Zawacki, Clinton, & Buck, 2001) and just under 50% (Abbey et al., 1998) in different samples of American college students. Prevalence rates increase when assessing the presence of alcohol and substances in perpetration. Koss, Dinero, Seibel and Cox (1988) established that 68% of perpetrators were using alcohol, illicit substances, or both, at the time of their assault. The use of alcohol and illicit substances is also prevalent in cases of sexual assault perpetrated against male victims. Fifty-three percent of offenders in Stermac, Sheridan, Davidson and Dunn’s (1996) study, for example, were believed to be using either alcohol or substances at the time of perpetration.

Assessing each type of assault, Kanin (1957) found that alcohol consumption was more likely to be involved in crimes involving rape or attempted intercourse with violence than non-penetrative acts (e.g., fondling). This finding was supported by findings that 58% of British incarcerated rapists reported that they had consumed alcohol shortly prior to committing their offence (World Health Organization, 2006),
and that alcohol was most likely to be involved in the committing of rape, compared with the perpetration of other types of sexual assault (Abbey et al., 2001).

**The Contribution of Alcohol to Sexual Assault Perpetration**

There is general agreement in the literature investigating the physiological effects of alcohol ingestion and sexual arousal that arousal decreases as alcohol consumption increases (George & Norris, 1991). Specifically, penile response and vaginal arousal decreases as consumption increases, and time required to achieve orgasm increases in both males and females (George & Norris, 1991).

Despite this, there exists a wealth of psychological literature that indicates a strong relationship between alcohol use and engagement in both consensual and non-consensual sexual activity. Such research relates solely to interactions between heterosexual couples in which both parties know each other to a degree; surprisingly, no research investigating the influence of alcohol on sexual activity within homosexual couples is available. Nonetheless, within heterosexual couples, it is apparent that the relationship between alcohol consumption and sexual behaviour, particularly in cases of acquaintance and date sexual assault, is mediated by a number of factors.

**Alcohol expectancies.** Expectancies pertain to the beliefs that individuals hold about specific reinforcements occurring as a result of particular behaviours (Kuntsche, Knibbe, Gmel, & Engels, 2005). This term has been used to refer to the expected effects and consequences of alcohol use (Brown, Goldman, Inn, & Anderson, 1980). Alcohol expectancies are therefore the beliefs that individuals hold regarding anticipated outcomes of alcohol consumption (Lee, 1998). Brown and colleagues (1980) identified the existence of categories of alcohol expectancies, asserting that individuals generally perceive alcohol consumption as creating positive experiences, such
as social and physical pleasure, enhanced sexual performance, increased aggressiveness and power, improved social assertiveness and reduced tension. However, more recent theorists have posited that alcohol consumption is also related to negative expectancies, such as cognitive difficulties (Lee, 1998).

A number of general alcohol expectancies have been identified as being held by many, if not most, individuals. For example, a wealth of literature maintains that men in particular expect to experience increases in disinhibition, aggressiveness, and sexual interest and responsiveness after consuming alcohol (e.g., Brown et al., 1980; George & Norris, 1991).

**Increased aggression.** There are inconsistencies in results between studies investigating the physiological and environmental contributions of alcohol consumption to displays of aggressive behaviour. A meta-analysis conducted by Bushman and Cooper (1990) posited that alcohol not only contributes to aggressive behaviour, but causes it. However, various authors have subsequently argued that alcohol consumption does not cause aggressive behaviour, but can contribute to such behaviour, particularly under circumstances involving provocation, social pressure, or the presence of threat or potential harm (Abbey, 2002; Chermack & Giancola, 1997). Not surprisingly, more detailed explorations have provided evidence of a dose-response relationship between alcohol consumption and aggression. For example, Abbey, Clinton-Sherrod, McAuslan, Zawacki and Buck (2003) assessed the alcohol consumption of 113 American male undergraduate students (age: 18-53 years, \( M = 23.0 \)) who had committed a sexual assault since the age of 14 years. The authors concluded that consumption was linearly related to aggressive behaviour, with higher consumption being related to increased aggressiveness. However, this pattern was only evident to the point where participants had consumed an average of four beverages; after
that point, aggression remained constant until consumption of nine beverages, before declining.

Although it appears that alcohol consumption may relate to the display of aggressive behaviours, at least under certain environmental circumstances and with relatively low doses of alcohol, there is a notable body of psychological literature that argues against this conclusion on the basis of methodological issues. For example, it has been contended that the ‘balanced placebo’ design, on which a large number of investigations of aggression-related alcohol expectancies are based, is fallible, and often results in participants being able to accurately deduce whether they have consumed alcohol or not (Bushman & Cooper, 1990; Seto & Barbaree, 1995). Studies using alternative methodologies have determined that alcohol expectancies do not maintain a significant effect on sexual assault perpetration (Abbey et al., 1998; Chermack & Giancola, 1997). Rather, Chermack and Giancola suggested that alcohol dose is a more reliable predictor of alcohol-induced aggression in particular, while Abbey and colleagues (1998) determined that alcohol expectancies affect levels of consumption only. Moreover, Abbey, Ross, McDuffie, and McAuslan’s (1996) study demonstrated that alcohol expectancies of increased aggression were no more prevalent amongst sexual assault perpetrators than non-perpetrators. It is therefore possible that alcohol relates to increased aggressive behaviours through its pharmacological effects and such aggression is not affected by alcohol expectancies (Chermack & Giancola, 1997).

**Increased sexual interest and behaviour.** A great deal of research has indicated that both men and women expect the consumption of alcohol to lead to an increased interest in sexual activity. Not only have studies shown that alcohol consumption increases the perceived attractiveness of potential sexual partners (e.g., Jones, Jones, Thomas, & Piper, 2003), but research also indicates
that approximately 50% of people expect that alcohol consumption will result in enhanced, or disinhibited, sexual behaviour (Norris, Hughes, & Wilsnack, 1994), and that such expectations affect behaviour.

With regard to sexual interest and responsiveness, a number of studies using balanced placebo designs have investigated the expected and actual effects of alcohol consumption, particularly with male samples. Such designs involve constructing situations in which men consume alcohol and undertake various activities. Typically, four groups of participants are compared – men who expect to receive alcohol and do so, men who expect alcohol but consume a placebo, men who expect not to receive alcohol but do so, and men who do not expect to receive alcohol and do not receive it. George and Norris (1991) provided a summary of such studies, concluding that despite alcohol’s tendency to reduce sexual arousal, men consistently reported greater levels of subjective arousal after consuming either alcohol or the placebo replacement.

Women are also subject to perceptions regarding sexual interest and responsiveness when consuming alcohol, with a number of studies concluding that alcohol-affected women are more interested in engaging in sexual activity than women who have not consumed alcohol (e.g., Abbey & Harnish, 1995; Corcoran & Thomas, 1991; Rickert & Wiemann, 1998). In addition, women report being more sexually aroused after alcohol consumption, despite contrary physiological responses (Norris et al., 1994).

Nonetheless, expectations that alcohol improves sexual activity are positively related to both (i) the initiation of sexual acts and (ii) the number of sexual interactions that take place. For example, Corcoran and Thomas (1991) exposed 162 male and 123 female college students (age details not provided) to a hypothetical date scenario. Participants believed that the characters in the scenario were more likely to initiate sexual activity when they were both consuming alcohol,
than when they were not drinking alcohol. In Abbey and Harnish’s (1995) study of 297 female and 125 male college students in the USA (age: 18-21 years), participants believed a hypothetical male character as being more sexually attracted to his female partner than when he did not drink alcohol. The male character was also perceived as being most sexual when both he and his hypothetical partner consumed alcohol, but least sexual when his partner consumed alcohol and he did not. These findings indicate that people perceive men as being interested in sexual activity when they are consuming alcohol, regardless of whether potential sexual targets are consuming alcohol. Despite this, men themselves expect alcohol to affect them to a lesser degree than do women (Earlywine & Martin, 1993).

The relationship between alcohol expectancies and perpetration of sexual assault. Although consideration has been given to the potential contribution of alcohol expectancies regarding aggression and sexual interest to sexual assault perpetration, evidence supporting a direct relationship between expectations of increased aggression with alcohol consumption and actual sexual assault perpetration is lacking. In contrast, it is highly possible that expectations of enhanced sexual responsiveness and interest strongly contribute to the commission of alcohol-involved sexual assault offences.

In terms of sexual interest, a number of studies have compared the alcohol expectancies held by men who have perpetrated sexual assault and men who have not committed such acts. In an American sample, men who had committed a sexual assault more strongly believed that alcohol consumption increases interest in sexual activity when compared with men who had not committed a sexual assault (Abbey et al., 2001). Similarly, of 814 American male college students (age details not provided), those who had engaged in forced sexual activity reported stronger beliefs that alcohol increases sexual responsiveness in both men and women than those participants who
had not undertaken a sexual assault (Abbey et al., 1996). In addition, Abbey, McAuslan, and Ross (1998) assessed the attitudes of 798 male undergraduate students, and found that alcohol expectancies regarding increased interest in sexual activity increased as rape-supportive beliefs increased. Similarly, Zawacki and colleagues (2003) examined the beliefs of young men who had perpetrated assaults after either they, or their victim, had consumed alcohol, and those who had perpetrated assaults in situations where alcohol consumption was not involved. Beliefs that alcohol consumption increases sex drive and that women’s alcohol consumption is indicative of sexual interest were strongest amongst perpetrators of alcohol-involved sexual assault.

It is therefore evident that alcohol expectancies are stronger amongst perpetrators of sexual assault, compared with non-perpetrators, and thus potentially contribute to such perpetration. It is conceivable that perpetrators maintain beliefs that alcohol consumption increases and implies sexual interest in both men and women, and thus feel somewhat justified in forcing sexual activity. It is also possible that such behaviours are fuelled by the availability of using alcohol as an excuse for their aggressive behaviour after the event.

**Alcohol myopia.** Another explanation for the relationship between alcohol consumption and sexual assault perpetration involves the theory of alcohol myopia. According to this theory, alcohol intoxication causes people to focus on environmental cues that are most salient, while ignoring less salient cues (Steele & Josephs, 1990). Steele and Josephs maintained that alcohol consumption causes deterioration in one’s capacity to attend to numerous and complex stimuli, forcing intoxicated persons to instead focus on superficial, immediate aspects of their environment and situation and reducing one’s capacity to consider possible consequences of reactions and behaviours (Abbey, 2002).
In a series of three studies, MacDonald, Fong, Zanna, and Martineau (2000), provided strong evidence in support of the existence of alcohol myopia, demonstrating how this can cause alcohol-affected people to focus on cues that meet their expectations in any given situation. In their first study, 65 Canadian male college students (age: 18-25 years) viewed a video that depicted a heterosexual couple, in a dating scenario, negotiating whether to engage in sexual intercourse without using a condom. Participants were assigned to sober, alcohol (participants were provided with enough alcohol to register a blood alcohol level of 0.08%), or placebo (participants were given an amount of alcohol that was undetectable on a breathalyser, but were advised that they had consumed three alcoholic beverages) conditions prior to viewing the video. Participants completed a questionnaire in which they were asked to indicate the likelihood that they would engage in sexual intercourse in the same scenario; however, in one condition, the words “without a condom” were printed in bold type, while in the second condition, these words were not mentioned, and all remaining text was printed in normal type. When not confronted with the bold type, participants in the alcohol condition reported significantly higher intentions to engage in unprotected sexual intercourse than those in the sober and the placebo conditions. However, participants in all three conditions provided equally negative sexual intentions when faced with the bolded “without a condom” text. Such findings support alcohol myopia theory – when intoxicated, participants based their decisions on the salient cues of their female partner wanting to engage in sexual activity, and did not attend to the weaker cues regarding the lack of condom availability. However, when these weaker cues were made more salient, they exhibited a greater effect on participants’ decision making. The authors argued that the assumption that alcohol simply increases disinhibition cannot account for these findings.
The second study aimed to generalise these findings to more realistic situations. The authors met with 130 women and 195 men at four different licensed venues in Canada, over eight nights (MacDonald et al., 2000). Participants were subjected to a breathalyser, with those reporting a blood alcohol level of 0.08% or above assigned to an intoxicated condition, while those below were assigned to a sober condition. Each participant was then provided with a vignette involving the participant meeting a person of the opposite sex at a licensed venue, returning to the person’s house, discussing intentions of engaging in sexual intercourse but realising that neither person has a condom. Participants were then asked about their intentions of continuing with sexual intercourse in such a situation. Again, some participants were asked to report on their intentions to simply engage in sexual intercourse, while others were asked about their intentions to engage in intercourse without a condom, with the latter words again appearing in bold type. Consistent with the authors’ first study, the bold text did not affect the responses of the participants in the sober condition, but did affect those in the intoxicated condition. It was concluded that the findings again supported the presence of an alcohol myopia effect – sober participants were able to process all available cues in the situation, whereas intoxicated participants were only able to attend to an inhibiting cue when it was made overt.

Finally, the researchers assessed 167 women and 285 men at two licensed venues in Canada, over three nights (MacDonald et al., 2000). All participants were given a hand stamp when they entered the bar. Participants in the control condition received a smiley face stamp, participants in the mild cue condition received a “SAFE SEX” stamp, and participants in the moderate cue condition received an “AIDS KILLS” stamp. Participants then undertook a breathalyser test; again, those reporting a blood alcohol level of 0.08% or above assigned to an intoxicated condition, while those below were assigned to a sober
condition. The same vignette as described in the second study above was used. Intoxicated participants in both the control and mild cue conditions were more likely to express intentions to engage in sexual intercourse than sober participants. However, the moderate cue was sufficient to reduce intoxicated participants’ intentions regarding unprotected sexual activity – a finding which again supported the presence of alcohol myopia.

On the basis of these convergent findings, MacDonald et al. (2000) postulated that alcohol myopia results in intoxicated persons focussing on salient cues that conform to their perceptions or expectations of any given scenario. In the above situations, participants hoped to engage in sexual activity; when intoxicated, they focussed on cues that promoted the occurrence of sexual activity, unless a cue that inhibited such activity was presented in a strong manner. Thus, not only does alcohol myopia cause intoxicated people to focus on salient cues, but it results in people focussing on cues that adhere to one’s expectations or preferred outcomes in situations.

The relationship between alcohol myopia and perpetration of sexual assault. It has been contended that alcohol myopia can result in sexual assault perpetration through perpetrators’ processing of ambiguous cues in such a way that confirms their hopes for a sexual encounter. Abbey and colleagues (Abbey et al., 1998; Abbey et al., 1996) maintained that social cues regarding sexual interest are generally indistinct and indefinite. Thus, if a person is interested in engaging in sexual activity, he/she will interpret all cues as confirming his target’s sexual interest while simultaneously ignoring cues that contradict this belief. Gross, Bennett, Sloan, Marx, and Juergens (2001) illustrated this behaviour in a sample of 160 male college students in the USA (age: 21-30 years, \( M = 22.3, \ SD = 2.8 \)). Participants were presented with scenarios involving cues that inhibit or refuse sexual
activity, and cues that disinhibit or welcome sexual activity. It was determined that intoxicated men were unable to process and respond to inhibitive cues when disinhibitive cues are also present (e.g., men displayed a failure to attend to refusals when the hypothetical female character was engaging in a degree of consensual sexual activity, such as kissing). The authors contended that such disinhibitive cues, if presented in an assertive and direct way, are likely to be heeded by men who had consumed low doses of alcohol; however, such adherence may not be evident after consumption of high doses.

It has also been argued that alcohol myopia can contribute to delays in recognition of disinhibitive cues in sexual situations. Bernat, Calhoun and Stolp (1998) conducted a study with 102 male undergraduate students in the USA (age: 18-28 years, $M = 20.1$, $SD = 1.9$). Participants listened to an audio analogue featuring a heterosexual couple engaging in gradually increasing levels of sexual activity, with the female expressing higher levels of resistance while continuing to participate in lower-level sexual activity, such as kissing. Participants were asked to indicate when they would stop their sexual advances if they were in the same situation. In one condition, participants were told that the characters in the analogue had consumed alcohol, while in a second condition, participants were advised that the characters were sober. Based on self-report responses, participants were separated into sexually aggressive and sexually non-aggressive groups. Overall, men who were told that the characters were alcohol-affected took significantly longer, and thus stronger resistance communications, to stop the sexual advances than men who were told that the characters were sober, suggesting that the mere expectation of alcohol consumption induced the presence of alcohol myopia. However, it was also determined that sexually aggressive men who believed that characters were alcohol-affected took significantly longer to stop the interaction than sexually aggressive
men who did not hold this belief; yet, this difference was not evident amongst the non-aggressive participants.

It therefore appears that the expectation of alcohol myopia is present amongst men who have sexually aggressive tendencies, but has little effect on men who are not sexually aggressive. Nonetheless, it also seems that actual alcohol consumption, as opposed to the expectancy of consumption, does create the experience of alcohol myopia. Thus, it is plausible that where an alcohol-affected person is interested in engaging in sexual activity, any cues provided by the sexual target that indicate sexual interest are attended to, while cues indicating disinterest are ignored or reconceptualised as actually being indicative of interest. If refusals or resistance by the sexual target remain minimal and less salient than the inviting cues, there is a greater likelihood that a sexual assault will occur (Gross et al., 2001).

**Misperception of Sexual Intentions**

Several theorists have argued for the possible role of misperception in the perpetration of sexual assault. Misperception occurs when a person misinterprets the sexual intentions of another person, mistakenly perceiving that they are sexually attracted or interested in engaging in sexual activity (Abbey et al., 1998).

**Prevalence of Misperception in Social Situations**

A number of studies have investigated the frequency with which young people misperceive the actions or intentions of others during social interactions, with most studies indicating that male misperception of female behaviour is more common than vice versa (e.g., Abbey et al., 2002; e.g., Anderson & Aymami, 1993). For example, with regard to general social misperception, 65% of women and 48% of men in Abbey and colleagues’ (Abbey et al., 1996) study reported that they had been sexually misperceived. Studies have also indicated that men perceive women as being more sexual than do women themselves. For example, male participants observing a photograph of
students in a classroom rated the female student as being more sexy and seductive than did female participants (Abbey, Cozzarelli, McLaughlin, & Harnish, 1987). In addition, the female character in four different vignettes (describing a dating scenario) was rated as having greater sexual intentions by male participants than female participants (Abbey & Harnish, 1995). Male participants also rated the male character as being more sexual and more attracted to his partner than did female participants. Combined findings from these studies, in general, indicate that men perceive the behaviours of others as being more sexual than do women.

**The Effects of Misperception on Perpetration of Sexual Assault**

It is therefore possible that the misperception of sexual attraction, interest, and responsiveness displayed by young men is a contributor in the perpetration of sexual assault, particularly in incidents where some level of consensual sexual activity has taken place, as is often the case in occurrences of acquaintance and date sexual assault. A number of studies have investigated the prevalence of misperception in instances of sexual assault. In her investigation of 3,187 female (age: $M = 21.4$) and 2,972 male (age: $M = 21.0$) college students in the USA, Koss (1988) determined that the majority of female sexual assault victims believed that although they had partaken in some degree of sexual activity, they had made their non-consent to engage in sexual intercourse clear. However, the majority of men who perpetrated such assault believed that their partner’s non-consent was “...‘not at all’ clear...” (p. 17). Further studies have determined that misperception is more common amongst sexual assault perpetrators than non-perpetrators (Abbey et al., 2001), and that misperception is more frequent during social interactions that result in sexual assault than those that do not (Muehlenhard & Linton, 1987). Finally, Abbey, McAuslan, and Ross (1998) determined that frequency of misperception was related to
frequency of sexual assault perpetration, with the latter increasing as the former increased.

Possible explanations for the relationship between perception and sexual assault perpetration were explored by Malamuth and Brown (1994). One hundred and sixty-one men from a college and community sample (age details not provided) viewed four videos, featuring scenes of an interaction between a man and a woman in a licensed venue. The hypothetical male character approached the women in order to initiate a social interaction, and the woman responded in one of four ways: friendly, assertively rejecting, seductive, or hostile. In each condition, sexually aggressive participants misperceived the female character’s sexual intentions or doubted the genuineness of her reactions. When the female character rejected the male character, either with hostility or assertiveness, sexually aggressive participants perceived her as being receptive and seductive. In contrast, when the female character reacted to the male character in a favourable manner, sexually aggressive participants rated her as being more hostile than did non-aggressive participants. Overall, sexually aggressive participants perceived female behaviour to be dishonest and misleading.

In summary, it appears that misperception plays some role in the potential perpetration of sexual assault, particularly assaults perpetrated by men against women. It is possible that male perpetrators tend to misperceive female behaviour in general, regardless of whether the woman’s intentions conform with those of the perpetrator. Given that this notion conflicts with the tenets of the alcohol myopia theory, further consideration of the effects of alcohol consumption on misperception is warranted.
The Effects of Alcohol and Misperception on Perpetration of Sexual Assault

It is evident that alcohol consumption increases the likelihood of misperception occurring, and that such misperception can then lead to sexual assault perpetration. This association has been reported by both perpetrators and victims of sexual assault. For example, Zawacki et al. (2003) determined that perpetrators who committed sexual assaults while alcohol-affected reported greater frequency of misperception than perpetrators who were not alcohol-affected. With regard to victims, Abbey, Ross, McDuffie, and McAuslan (1996) found that women who had consumed alcohol during their experience of a sexual assault believed that misperception held a greater influence on the perpetration than women who did not consume alcohol. In addition, women who were victimised by a man who was alcohol-affected at the time of the assault believed that alcohol played a greater role in the assault than women whose perpetrator had not consumed alcohol.

It seems that while misperception may be frequent amongst sexually aggressive men, as argued by Malamuth & Brown (1994), it can also be present in alcohol-affected men, regardless of their sexually-aggressive tendencies. Moreover, it is clear that misperception becomes more frequent amongst sexually aggressive men when they consume alcohol. Such possibilities require future investigation, but remain pertinent to the current study despite the present inconclusiveness of findings.

It is indisputable that the presence of alcohol consumption increases the likelihood of the occurrence of sexual assault perpetration. Although consideration of specific consumption patterns and individual behaviours is warranted in any examination of sexual assault perpetration (Zawacki et al., 2003), it is clear that particular factors may contribute to perpetration. The presence of expectancies
regarding the effects of alcohol consumption and of alcohol myopia may indeed lead to misperception of the behaviours and intentions of others, thereby contributing to the perpetration of sexual assault. It is also plausible that similar processes are present in occurrences of drink spiking, and therefore require further investigation.

**Summary**

It is therefore apparent that alcohol consumption during social interactions on the part of perpetrators does indeed increase the likelihood of sexual assault occurring. Sexual assault perpetrators hold stronger beliefs that alcohol consumption increases sexual interest than non-perpetrators, and are also more likely to display alcohol myopia tendencies and misperception of cues. It is therefore feasible that, when alcohol is consumed, perpetrators perceive both themselves and others to be interested in engaging in sexual activity. The influence of alcohol myopia then causes perpetrators to focus on communications and signals given by potential sexual partners as conforming to the perpetrators expectations; that is, signals that are indicative of sexual interest are focussed on, while those that suggest disinterest are ignored or rationalised. In cases where the perpetrator’s target is not interested in engaging in consensual sexual activity, any resistance to unwanted sexual advances on the part of the target are misinterpreted, thereby resulting in an ensuing sexual assault.

**Part 3. Factors Associated With Victimisation of Sexual Assault**

A wealth of research has investigated sexual assault victimisation from the perspective of delineating factors that are associated with its occurrence, particularly amongst female victims. Three factors in particular - alcohol and substance use, past experience of victimisation, and risk recognition and response - have been shown to reduce an individual’s capacity to recognise high risk situations for sexual assault.
Alcohol and Substance Use

Although researchers maintain that particular behaviours cannot, and do not, directly cause victimisation of sexual assault, a number of factors have been identified as increasing the risk of such victimisation occurring. This is particularly the case with alcohol use – many have argued that both alcohol and substance use increases the likelihood of experiencing sexual assault victimisation.

Prevalence of Alcohol and Substance Use During Incidents of Sexual Assault Victimisation

Numerous studies have reported on the prevalence of victims’ alcohol consumption during occurrences of sexual assault, although a range of prevalence rates have been obtained. More than 50% of sexual assault victims in a sample of 3,187 female college students (age: $M = 21.4$) had consumed alcohol prior to the incident (Koss & Dinero, 1989). Similarly, 42% of the victims in Ullman, Karabatsos, and Koss’ (1999) sample reported consuming alcohol before experiencing an assault. A lower prevalence rate was obtained by Abbey and colleagues (Abbey et al., 1996), who reported that 30% of sexual assault victims had consumed alcohol prior to the assault. An identical rate was obtained by Campbell, Seftl, and Ahrens (2004) in a community sample in the USA (age at time of assault: $M = 26.7$, $SD = 8.7$). Comparable prevalence rates have also been reported in relation to male sexual assault victims. For example, of the 22 men in King’s (1992) investigation, 59% were heavily intoxicated at the time of the assault. Similarly, 46% of male victims assessed by Stermac and colleagues (Stermac et al., 1996) were alcohol-affected prior to experiencing a sexual assault.

Very few studies have investigated the prevalence of substance use amongst sexual assault victims, making it difficult to formulate definitive conclusions about this relationship. One study examined the experiences of 4,009 women (age: $M = 35.9$) who participated in the
National Women’s Study in the USA (Kilpatrick, Acierno, Resnick, Saunders, and Best, 1997). The researchers determined that regardless of past history of sexual assault, the women who reported active substance use were more likely to have also experienced sexual assault.

It is therefore clear that alcohol use is relatively common amongst sexual assault victims, and that prevalence rates are similar across a range of sectors of the community. Substance use may also play a contributing role, but this remains inconclusive due to the lack of research.

**The Relationship Between Alcohol and Substance Use and Sexual Assault Victimisation**

A search of the psychological and sociological literature revealed a paucity of empirical research investigating the relationship between illicit substance use and sexual assault victimisation; the following discussion, therefore, focuses predominantly on possible explanations for the relationship between alcohol consumption and sexual assault victimisation that seems to exist.

Various studies have identified a correlation between relatively high levels of general alcohol use, as opposed to use at the time of sexual assault, and victimisation. This has been made particularly apparent in longitudinal studies. For example, Testa and Livingston (2000) assessed 93 women (age: 20-35 years, $M = 24.3$, $SD = 3.6$) from a community and college sample at two separate times, 12 months apart. Women who reported sexual assault victimisation at the time of initial data collection displayed significantly higher alcohol consumption than those who had not been assaulted. Additionally, women who were assaulted during the time period between the first and second data collection points reported greater alcohol consumption than non-victimised women. A similarly designed study was conducted by Combs-Lane and Smith (2002) with a sample of 126
female college students (age: 18-22 years, $M = 19.0$, $SD = 1.1$). It was found that sexual assault victimisation during the first and second data collection points (5.5 months apart) was related to greater actual and expected alcohol use during that period. Thus, it is evident that general alcohol use increases the likelihood of experiencing sexual assault victimisation.

However, a number of studies have indicated that, regardless of frequency of alcohol consumption, heavier episodic alcohol use contributes to victimisation. For example, Mohler-Kuo and colleagues (Mohler-Kuo, Dowdall, Koss, & Wechsler, 2004) determined that of a number of alcohol-related variables, heavy episodic drinking was the strongest predictor of sexual assault victimisation, with frequent heavy episodic drinks at 7.8-fold and 2.8-fold increased odds of experiencing alcohol-involved rape and non-alcohol involved rape, respectively, than non-heavy drinkers. Supporting this, Muehlenhard and Linton (1987) identified that assaultive and non-assaultive dates did not differ in terms of whether alcohol was consumed, but heavy drinking was more common on dates involving sexual assault than on dates where no such assault occurred. It appears that sexual assault victimisation is related to moderate frequency of alcohol consumption but high levels of episodic consumption.

As noted previously, with the exception of a single study, no research has examined the relationship between substance consumption and increased likelihood of sexual assault victimisation. Mohler-Kuo, Dowdall, Koss, and Wechsler (2004) examined reports of female college students in the Harvard School of Public Health College Alcohol Study. In 1997, 8,567 women were surveyed, 8,425 women were surveyed in 1999, and 6,988 women were surveyed in 2001. The authors did not provide exact age details, but reported that half of the overall sample was under 21 years of age. Overall, it was determined that women who used illicit substances were subject to 4.6-fold
increased odds of experiencing rape, and 2.7-fold increased odds of experiencing a sexual assault not involving rape. Although it is difficult to generalise these findings, it is clear that general substance use is a probable risk factor for sexual assault victimisation.

**Alcohol Expectancies**

The impact of alcohol expectancies on sexual assault victimisation remains relatively unexplored. However, one study explored whether expectancies related to sexual interest affected experiences of such victimisation. Utilising a sample of 350 students (age: 18-30 years, \(M = 19.3, \ SD = 1.5\)) in the US, Benson, Gohm, and Gross (2007) investigated the impact of beliefs that alcohol increases sex drive and sexual affect. The study determined that women who had been sexually victimised held stronger such beliefs than women who had not been victimised. The researchers proposed that such beliefs may result in higher levels of alcohol consumption, thereby increasing the risk of experiencing victimisation.

**Previous Sexual Assault Victimisation**

A wealth of literature exists investigating the effects of previous sexual assault victimisation on future incidents of victimisation. Revictimisation, or the experience of multiple victimisations, typically during separate developmental periods (Davis, Combs-Lane, & Jackson, 2002), has been conceptualised as a risk factor in itself for sexual assault victimisation (Messman-Moore, Long, & Siegfried, 2000). Indeed, several studies have indicated that previous sexual assault victimisation increases the likelihood of future victimisation.

**Prevalence of Sexual Assault Revictimisation**

Investigations of child sexual abuse and sexual victimisation during adulthood have identified a relationship between these experiences. A number of studies have indicated that significant proportions of adult sexual assault victims have also experienced child sexual abuse (e.g., Aizenman & Kelley, 1988; Koss & Dinero, 1989;
Stermac et al., 1996; Stermac et al., 2002). The differing samples and methodologies used by these samples indicates that the relationship between childhood and adulthood sexual assault occurs regardless of gender, sexual orientation and the victim’s relationship with the perpetrator.

Perhaps of greater significance to the current study are those investigations that have revealed a pattern of revictimisation amongst adult sexual assault victims, which has been established by both general studies (e.g., Davis et al., 2002) and studies that have examined revictimisation within specified time periods. An example of the latter was that conducted by Testa and Livingston (2000), which determined that women who reported victimisation at the first time of their data collection were four times as likely as non-victims to experience unwanted sexual advances during the 12 months between data collection points. Similar findings were obtained by Greene and Navarro (1998), who also explored time-limited revictimisation amongst college students. In a sample of 274 female students ($N = 274$ at Time 1, $N = 88$ at Time 2, $N = 105$ at Time 3), victimisation in a one semester period between the first and second data collection times was positively correlated with victimisation during a one semester period between the second and third data collection times.

While there is consistency in results obtained by studies investigating revictimisation of sexual assault in general, no such revictimisation pattern has been identified for attempted and completed rape (Combs-Lane & Smith, 2002). It is therefore possible that previous sexual assault is predictive of less severe types of sexual assault occurring in the future, but is not necessarily predictive of future experience of rape.
Considerations of both the prevalence and predictive nature of revictimisation have led to analysis of the possible causes of such a pattern. Numerous studies have indicated that previously-victimised women perceive themselves to be at greater risk of experiencing future victimisation than non-victimised women. This was the case in the abovementioned sample utilised by Testa and Livingston (2000), and in Norris, Nurius, and Dimeff’s (1996) sample of 66 female college students (age: $M = 19.2, SD = 1.0$). Similarly, 41% of the victimised women in Koss’ (1988) sample expected to experience a sexual assault at some point in the future.

Such expectation may indicate that victimised women are able to identify situations and events that place them at risk of future victimisation, but remain apprehensive about their capacity to avoid such risk (Testa & Livingston, 2000). This may reflect a general incapacity to use techniques that contribute to avoidance of victimisation. The victimised women in Norris, Nurius, and Dimeff’s (1996) sample were significantly more likely than non-victimised women to plan to use indirect forms of resistance in any future experience of victimisation, and less likely to plan to use forms of verbal and physical resistance. It is therefore possible that previously victimised women are unable to act on their recognition of risk, thereby resulting in additional incidents of victimisation.

**Recognition of Risk**

Despite the contentions of Testa and Livingston (2000) that women are able to accurately gauge their likelihood of revictimisation, but are simply unable to avoid it, a number of researchers have instead contended that such risk recognition is in fact impaired in victims of sexual assault (Combs-Lane & Smith, 2002). For example, Wilson, Calhoun, and Bernat (1999) examined the experiences of 330
female college students in the USA (age: 15-27 years, \( M = 19.5, SD = 1.3 \)). Participants were exposed to an audio analogue featuring a heterosexual couple engaging in minor sexual activity, with the female character expressing increasing resistance and refusal as the male character attempted to engage in sexual intercourse. Participants were asked to indicate the point at which they believed the male character had displayed unacceptable behaviour. Participants who had experienced multiple sexual assault victimisations took significantly longer to indicate that the male character had behaved inappropriately than both non-victimised participants and participants who had experienced one occurrence of sexual assault. It was concluded that women who have experienced revictimisation appear to display poorer recognition of potential risks than women who have not been victimised, or those who have been victimised on one occasion. Thus, although single victimisation may act as a risk factor for future victimisation, revictimisation may be more likely when coupled with poor risk recognition.

It has also been proposed that women who have experienced some type of assault continue to place themselves in situations that increase the risk of further victimisation occurring. Parks, Miller, Collins, and Zetes-Zanatta (1998) questioned 52 American women (age: 18-55 years, \( M = 31.9, SD = 9.3 \)) about their experiences of alcohol-related aggression. Participants who had experienced some type of aggression perceived others to be at greater risk of experiencing future aggression than themselves. A similar study was conducted by Buddie and Parks (2003), who assessed the experiences of 198 American women (age: 18-52 years, median: 29.0). The researchers determined that previously victimised women engaged in more high-risk behaviours than non-victimised women. For example, victims consumed greater amounts of alcohol and left licensed venues alone or with strangers more frequently than women who had not been victimised. In
addition, recent research has identified an interaction between revictimisation and alcohol consumption. In a study of 372 female college students (age not provided) in the US, Gidycz et al. (2007) determined that alcohol use did not impact upon victimisation amongst women who had not already been victimised. However, amongst women who had experienced sexual assault victimisation, alcohol consumption significantly increased their likelihood of experiencing future victimisation. These findings relate to the argument of Testa and Livingston (2000) – even if previously victimised women are able to recognise the risks that increase the likelihood of experiencing sexual assault, they appear to be unable to avoid them.

**Summary**

A number of factors that are associated with sexual assault victimisation have been identified. It is apparent that both substance use in general and high episodic use of alcohol are significant risk factors for sexual assault victimisation. Previous experience of sexual victimisation is also predictive of future victimisation of sexual assault, although no such relationship is evident for victimisation of rape. Due to the presence of revictimisation, it has been contended that victimised women are either unable to recognise risk or unable to act protectively when they are in situations where a sexual assault may occur. In addition, it has been posited that alcohol consumption adversely affects one’s capacity to recognise, process and act upon potential risks (Abbey, 2002), thereby increasing the possibility of experiencing sexual assault victimisation.
CHAPTER 3
DRINK SPIKING AND DRUG-FACILITATED SEXUAL ASSAULT

Part 1. Background Information

Despite recent advances in research, drink spiking and drug-facilitated sexual assault remain poorly understood phenomena. There is general agreement that such victimisation is not limited to any particular type of person or situation (Griffiths, 2000; 2004) and does not result in predictable outcomes (Taylor et al., 2004). Nonetheless, a recent study of drink spiking victimisation in Australia has resulted in the establishment of comprehensive data pertaining to the prevalence of a range of drink spiking incidents (Taylor et al., 2004). Such data, in addition to that relating to drug-facilitated sexual assault, can be considered in the identification of risk factors for victimisation, thereby providing potential direction for prevention and intervention strategies. The following provides a detailed account of this body of research.

Differentiation of Drink Spiking and Drug-Facilitated Sexual Assault

Drink spiking is defined as the adding of a substance, licit or illicit, to a beverage without the consumer’s knowledge or consent (Moreton, 2003; Neame, 2003; Taylor et al., 2004). Drink spiking defines this solitary act, regardless of the intentions of the person committing the act, or the consequences of the act. In contrast, drug-facilitated sexual assault is used to define the perpetration of a sexual act that is committed when the victim is affected by alcohol, or substances, to a degree that renders them unable to provide clear consent to participating in the sexual act. While the offending substance is always unknowingly consumed in instances of drink spiking, drug-facilitated sexual assault can be committed after the victim has voluntarily consumed the substance (LeBeau et al., 1999; Taylor et al., 2004; Women’s Health Strategy Unit, 2004).
Prevalence of Drink Spiking

Obtaining an exact measure of the prevalence of drink spiking, in Australia or internationally, is generally considered to be unfeasible at the present time. Prevalence rates vary widely (Beynon, Sumnall, McVeigh, Cole, & Bellis, 2006), predominantly due to differing methods of collecting data on occurrences of spiking. While prevalence rates based on disclosures to support services, particularly sexual assault agencies, indicate that drink spiking is a relatively common and increasing occurrence (Neame, 2003), reports based on police data and results of toxicological analysis of alleged victims reveal much lower rates of victimisation (Neame, 2003; Taylor et al., 2004) than that provided by sexual assault agencies.

A number of support services have collected data over specified periods of time, in order to estimate the proportion of service users who have experienced an episode of drink spiking. An awareness campaign conducted in Manly, Sydney, included 534 surveys of young people in licensed venues (sample details not provided). Participants reported a high level of victimisation, and 30% of participants reported that they knew someone who had experienced drink spiking victimisation (Huxley & Meyers-Brittain, 2001). Data has also been collected by the Eastern and Central Sexual Assault Service at the Royal Prince Hospital in Sydney over several time periods. Between August 1998 and October 1999, 55 people (17% of all presentations) who believed that they had been spiked presented at this service (Griffiths, 2000; Moreton, 2003). Between June 2000 and May 2001, this reported rate had increased to 22% of all presentations (Griffiths, 2001; Moreton, 2003). Several other agencies have provided similar prevalence rates (see Taylor et al., 2004, for a review). In contrast, however, were the findings of Scott-Ham and Burton (2005), who assessed the toxicology results of 1,014 cases of suspected drug-facilitated sexual assault in the UK. The researchers determined that
only 2% of cases could be attributed to spiking, as opposed to voluntary consumption of a substance prior to the assault occurring. However, the researchers acknowledged that it was not possible to determine the proportion of cases involving the use of alcohol as a spiking agent.

Although rates obtained from support services provide some understanding of the percentage of sexual assault victims who were victimised via the use of alcohol or substances, they do not provide accurate data regarding the prevalence of drink spiking incidents that do not result in sexual assault victimisation. The only study, to date, to investigate such prevalence rates is that conducted by Taylor and colleagues (2004). Estimations were based on data collected by the Australian police between the 1st July 2002 and the 30th June 2003. The researchers used an ‘unreported crime adjustment’ technique (Mayhew, 2003, Walker, 1992; cited in Taylor, 2004). This uses statistical procedures to inflate police data on the basis of estimations of the degree to which drink spiking in under-reported. The technique therefore allows the addition of estimated unreported incidents to reported incidents, thereby providing what is considered to be a relatively accurate indication of prevalence. The researchers estimated that between 3,000 and 4,000 incidents of drink spiking occurred during the specified time period, resulting in an incidence rate of between 15 and 19 incidents per 100,000 people in Australia.

**Prevalence of Drug-Facilitated Sexual Assault**

Numerous researchers have argued that drug-facilitated sexual assault, committed after victims have voluntarily consumed alcohol and/or substances, is vastly more prevalent in Australia, the UK and the USA, than incidents of drink spiking (e.g., Neame, 2004). Specific prevalence rates of drug-facilitated sexual assault in Australia are rare. However, in 2004, members of the Metropolitan Ambulance Service (Melbourne, Victoria) reported that a significant number of these forms
of assaults were committed via the use of GHB, an illicit sedative (Eade & Patrick, 2004). In addition, the Australian component of the International Violence Against Women Survey determined that approximately 1% of the 3,047 female participants had experienced a drug-facilitated sexual assault during adulthood (Mouzos & Makkai, 2004).

Prevalence studies are much more common in the USA. Although the majority of these studies focus on women’s reports of victimisation, a number also examine men’s reports of their perpetration, as well as male victimisation and female perpetration. The most comprehensive study of female sexual assault victimisation under a range of circumstances, including alcohol and substance consumption, is that conducted by Koss, Gidycz, and Wisniewski (1987). Of the 3,187 female college students (age: \( M = 21.4 \)) sampled, 12% had experienced attempted sexual intercourse while alcohol- or substance-affected, and 8% had experienced completed sexual intercourse under similar circumstances. Using the same data, Koss (1988) estimated that 143 women had experienced 236 incidents of attempted intercourse, while 91 women reported 159 incidents of completed intercourse, indicating the presence of revictimisation within what is considered to be a representative American college sample. A similar prevalence rate was obtained by Testa, Livingston, Vanzile-Tamsen, and Frone (2003), who reported that 8% of their sample of women had experienced sexual intercourse when unable to consent due to intoxication.

Reports given by men regarding their own perpetration of drug-facilitated sexual assault generally provide prevalence rates that are lower than that provided by female victims. The two abovementioned studies undertaken by Koss and colleagues investigated male perpetration, in addition to female victimisation. In a sample of 2,972 male college students (age: \( M = 21.0 \)), 5% reported attempting to
engage in sexual intercourse with a woman who was intoxicated and unable to consent, while 4% reported engaging in completed intercourse under these circumstances (Koss et al., 1987). Again, a pattern of repeated incidence was evident – 72 men reported perpetrating 115 incidents of attempted intercourse, and 57 men reported perpetrating 103 incidents of completed intercourse (Koss, 1988).

Data regarding the prevalence of drug-facilitated sexual assault amongst male victims is limited, particularly those focusing on heterosexual relations. However, two studies have provided similar prevalence rates, indicating that such rates may be an accurate indication of actual occurrence of male victimisation. Of the 22 men surveyed by Stermac, Sheridan, Davidson, and Dunn (1996), 17% were unable to recall the exact nature of the sexual assault they had experienced, as they had been assaulted while intoxicated or substance-affected. Similarly, Krahe, Schutze, Fritsche, and Waizenhofer (2000) utilised a sample of 310 homosexual German men (age: 14-35 years, $M = 21.8$, $SD = 3.6$) and determined that 20% of participants had experienced sexual victimisation while intoxicated. More than 16% of participants reported exploiting the intoxicated state of another person in order to engage in sexual activity with them.

A notably higher prevalence rate of female perpetration of drug-facilitated sexual assault is evident within relevant research. Examining men’s reports of victimisation by a female partner, Struckman-Johnson and Struckman-Johnson (1998) investigated the experiences of a sample of 314 male college students in the USA (age: 18-45 years, $M = 20.8$). Forty-three percent of these participants reported experiencing a coercive sexual experience, perpetrated by a woman, since the age of 16 years, with 27% reporting an experience involving coerced sexual intercourse. Forty percent of men indicated that the perpetrator had engaged in non-consensual sexual activity.
after the victim became intoxicated; some of these incidents occurred without active participation on the part of the man. Similar rates were obtained in a study assessing women’s reports of their own perpetration. An even higher prevalence rate was obtained in a sample of 461 female American college students (age: all under 21 years; range, $M$ and $SD$ not provided), with 62% of women reporting initiating sexual activity with a man when he was intoxicated, while 37% reported deliberately causing intoxication in order to initiate sexual contact (Anderson, 1998).

The limited number of available studies investigating male victimisation of drug-facilitated sexual assault indicates similar, if not greater, reporting rates by perpetrators than by victims, thus providing what is likely to be a relatively accurate indication of overall prevalence. In contrast, prevalence rates reported by female victims are notably higher than rates provided by male perpetrators of drug-facilitated sexual assault. This may be the result of a number of factors, including social desirability bias or a possible lack of recognition on the part of perpetrators that the sexual act was indeed non-consensual. The latter may particularly be the case if young men were unaware of the requirements of clear consent, or if such factors as alcohol myopia and misperception were present during assaults.

**Characteristics of Drink Spiking and Drug-Facilitated Sexual Assault**

Drink spiking and drug-facilitated sexual assault are increasingly recognised as separate and distinct entities. However, most research does not differentiate between the two, as the characteristics relating to each are similar. For these reasons, the following review considers characteristics relating predominantly to drink spiking and, where relevant, the deliberate intoxication of others for the purposes of engaging in sexual activity.
Gender

Most studies of drink spiking report that the majority of victims are female (e.g., Griffiths, 2000). Indeed, in a well designed, structured interview study by Taylor, Prichard, and Charlton (2004), 82% of the 197 callers to a telephone hotline for victims of drink spiking were female. Eighteen percent were male, and one victim reported being transgender.

Gender differences in the perpetration of drug-facilitated sexual assault have also been reported. For example, Larimer, Lydum, Anderson, and Turner (1999) investigated such perpetration in a sample of 165 male and 131 female college student in the USA (average age: 19 years; range, $M$ and $SD$ not provided). Men were significantly more likely than women to report deliberately causing intoxication in a partner in an attempt to engage in sexual intercourse. Consistent findings were reported in studies conducted by Koss and colleagues (Koss, 1988; Koss et al., 1987), described previously.

Age

Although it is evident that drink spiking occurs across most, if not all, age groups (Huxley & Meyers-Brittain, 2001), most research indicates that the majority of incidents occur amongst young adults. Of 109 female and 14 male drink spiking victims in the UK (age details not provided), 42% were aged between 30 and 39 years (Sturman, 2000). Victims interviewed by Taylor et al. (2004) were predominantly under the age of 34 years, with 41% under the age of 25 years. These researchers also assessed data collected by police and by the Centre Against Sexual Assault (CASA). Police data were based on records obtained between the 1st July 2002 and the 30th June 2003; the total number of reports was 660. CASA provided Taylor and colleagues with data collected from drink spiking and drug-facilitated sexual assault victims who presented at a CASA service between the 1st February 2002 and the 8th July 2003. This comprised 115 cases of suspected drink
spiking incidents. Fifty-one per cent of victims who reported to police were under 25 years of age, while 59% of victims attending CASA services were aged between 20 and 29 years.

**Location**

Sturman (2000) reported that almost 50% of drink spiking incidents within his sample occurred in licensed venues, followed by private residences and university campuses. Quigley (2004) further delineated prevalence rates of particular locations, maintaining that that vast majority of drink spiking incidents occur in licensed venues, but those resulting in the perpetration of sexual assault tend to occur at private functions where attendees are acquainted with each other. Again, Taylor et al. (2004) compared rates provided by their own data collection in addition to that obtained via police and CASA sources. Overall, it was found that 79% of all incidents occurred in metropolitan areas, with 78% occurring in licensed venues. This outcome is somewhat higher than the rates obtained via police reports (which suggest that between 67% and 75% of drink spiking events occur in venues) and CASA data (which indicate that only 20% occurred in venues, and 33% occur in the victim’s home). Such differences appear to support Quigley’s contention that spiking for the purposes of committing sexual assault tends to occur in private locations.

**Victim’s Relationship to Offender**

Only the study by Taylor et al. (2004) study has examined the relationship between perpetrators of drink spiking and their victims. It was reported that incidents that result in the perpetration of sexual assault often occur between people who know each other. Thus, 29% of drink spiking events reported to the telephone hotline were perpetrated by acquaintances. Indeed, only 45% of cases were perpetrated by a person unknown to the victim. This trend was also evident in the experiences of people attending counselling for sexual
assault. Sixty-one percent of drink spiking events reported to CASA counsellors were perpetrated by acquaintances.

**Substances**

A number of licit and illicit substances have been associated with the perpetration of drink spiking (Schwartz & Mitteer, 2000). The following provides a brief outline of the substances typically associated with spiking, and an examination of research that has investigated the prevalence of each substance in allegations of spiking and drug-facilitated sexual assault. Physiological and psychological effects of each substance will be discussed in detail when considering motivations for the perpetration of drink spiking.

**Alcohol.** Ethanol or ethyl alcohol, commonly referred to as alcohol, is a central nervous system depressant that is legal for adult consumption and is highly prevalent in Western communities (Koob & Le Moal, 2006). Alcohol is absorbed by the stomach and small intestine (Koob & Le Moal, 2006), and metabolised by the liver (Winger, Woods, & Hofmann, 2004); however, consumption affects all human organs (Goldberg, 2003). Absorption is affected by a number of factors. On average, men absorb alcohol at a slower rate than women, and alcohol is absorbed more slowly when greater amounts of food are present in the stomach at the time of absorption. Type of beverage also affects absorption – wine and beer are absorbed at a slower rate than distilled spirits, while sparkling wine and spirits mixed with carbonated drinks are absorbed more quickly, as the presence of carbon dioxide quickens absorption (Goldberg, 2003).

The effects of alcohol are dose-dependent and variable both within and across individuals (Koob & Le Moal, 2006). Although there does not currently exist a formal definition of alcohol intoxication, it is generally maintained that intoxication is reached when a person is unable to function within their normal range of physical and cognitive abilities, and experiences noticeable effects on mood, cognition and
motor abilities (National Health and Medical Research Council, 2003). A low blood alcohol concentration (BAC) of 0.05% is generally thought to be indicative of intoxication (National Health and Medical Research Council, 2003), and is likely to decrease alertness and increase disinhibition. Impaired psychomotor ability and sedation is expected at a BAC of 0.20%, while a BAC of 0.30% may result in stupor and impaired memory. A BAC of 0.35% is likely to produce an anaesthetised state, while a 0.40% BAC is expected to produce unconsciousness or coma, and death in approximately 50% of people if medical intervention is not obtained (Goldberg, 2003).

**GHB.** Gamma-hydroxybutyrate (GHB) is both a drug and a naturally occurring substance that is produced by the human body. It functions as a neurotransmitter in the central nervous system (Caldicott, Chow, Burns, Felgate, & Byard, 2004; Galloway et al., 1997), but can also occur in other parts of the body (Degenhardt, Darke, & Dillon, 2003; Dillon, 2003). As an artificially produced substance, GHB acts as a central nervous system depressant (Hensley, 2002). It is generally formulated in a crystal powder or clear liquid form, and has a bitter, salty taste (Dillon, 2003; Hensley, 2002; Taylor et al., 2004).

GHB has historically been used as an anaesthetic agent, a treatment for narcolepsy and insomnia, and an aid in muscle development amongst bodybuilders (Caldicott et al., 2004; Eade & Patrick, 2004). However, the use and production of the substance were illegalised after issues with seizures and vomiting, amongst other health concerns, became evident. In 2001 and 2002, the illicit use of GHB in Melbourne increased dramatically (Eade & Patrick, 2004), resulting predominantly in increased presentations at hospital emergency departments, but also in the first allegation of GHB-facilitated sexual assault (Eade & Patrick, 2004). Such increases in problematic use of GHB were also evident in the USA, where emergency hospital attendances of GHB users increased almost six-fold between 1994 and

GHB is easily manufactured and inexpensive (Eade & Patrick, 2004), and recipes are readily available via search engines on the internet. Onset of effects usually occurs between 10 and 30 minutes after ingestion, and effects are generally relatively short-lasting (Hensley, 2002; Taylor et al., 2004).

Due to difficulties with obtaining ingredients to produce GHB, recreational use has recently been supplemented by gamma-butyrolactone (GBL) and 1,4-butanediol (1,4-BD) (Caldicott et al., 2004; Taylor et al., 2004), both of which are converted into GHB in the body (Jansen, 2004).

**Benzodiazepines.** Benzodiazepines are minor tranquilisers that were first produced in 1960, beginning with chlordiazepoxide, or Librium, and diazepam, or Valium (Winger et al., 2004). Benzodiazepines are obtainable in Australia via prescription, and are generally used in the treatment of sleep and anxiety disorders. Common effects include drowsiness, difficulties with concentration, and impaired reflexes (Taylor et al., 2004).

Although a number of benzodiazepines have been associated with drink spiking and drug-facilitated sexual assault, flunitrazepam, traded under the generic name Rohypnol, has generally been associated with spiking more frequently than other benzodiazepines (Saum & Inciardi, 1997). The substance was introduced in 1975, and has since been used predominantly for the treatment of insomnia (Hindmarch & Brinkmann, 1999), due to its hypnotic, anxiolytic, and muscle-relaxing effects (Mattila & Larni, 1980). Effects usually occur after approximately 30 minutes and can last for approximately eight hours (Taylor et al., 2004). A relatively small dose is required to produce marked sedation (Winger et al., 2004).
Flunitrazepam is soluble in liquid, and in the original formulation, is colourless, odourless, and tasteless (Anglin, Spears, & Hutson, 1997). However, due to the alleged prevalence of flunitrazepam in instances of drug-facilitated sexual assault, the manufacturers, Hoffman LaRoche Pharmaceuticals, recently reformulated the substance to decrease the likelihood of its use in cases of drug-facilitated sexual assault – a dye was added, causing a release of a blue colour when dissolved, and the dissolving process now occurs at a slower rate than that of the previous formulation (Hindmarch & Brinkmann, 1999; Pope & Shouldice, 2001; Russo, 2000), thereby increasing the likelihood of detection. Despite this, the manufacturers have since withdrawn flunitrazepam from circulation, and it is therefore not legally available in Australia (Smith & Temple, 2000). The product is also illegal in the USA, but is available in South America, Europe, and Asia (Saum & Inciardi, 1997; Simmons & Cupp, 1998).

**Ketamine.** Ketamine, classified as a dissociative anaesthetic, was invented in 1962 in the Parkes-Davis laboratories in the USA (Jansen, 2000), and has since been used as an anaesthetic agent, particularly in paediatric and veterinary surgery (Curran & Morgan, 2000; Li, 1999; Taylor et al., 2004). Predominantly as a result of its dissociative effects, ketamine gained some popularity in the 1980s both as a tool for exploring spirituality, and an enhancement substance amongst young people attending parties, raves, and clubs (Jansen, 2000).

Medical use of ketamine usually involves intravenous injection, causing onset of effects within four minutes (Jansen, 2000). For recreational use, the substance is usually either consumed as a liquid, or is heated, producing a white powder (Mozayani, 2002). Nasal use results in the experience of effects within 10 minutes, while effects are noted within 30 minutes after an oral dose. Effects after a recreational dose usually last for approximately one hour (Jansen, 2000).
Ecstasy. 3,4-Methylenedioxymethamphetamine (MDMA), commonly known as ecstasy, is an illegal substance that was originally formulated as a treatment for obesity (Winger et al., 2004), but is now used solely for recreational, as opposed to medicinal or therapeutic, purposes. The substance is produced in tablet form (Taylor et al., 2004), and has stimulative and hallucinogenic properties (Schifano, Furia, Forza, Minicuci, & Bricolo, 1991). Acute effects are usually experienced between 30 and 60 minutes after ingestion, and reach a peak level between 75 and 120 minutes after consumption. Effects can last for a period of two to 12 hours (Baylen & Rosenberg, 2006). Nonetheless, effects may be influenced by the purity of the substance. It has been contended that the majority of ecstasy tablets in Victoria and New South Wales, Australia, do not contain MDMA (Dillon, 2003; Eade & Patrick, 2004).

Amphetamine. Amphetamine is a central nervous system stimulant (Drabsch, 2006) that is generally used in the treatment of attention-deficit hyperactivity disorder (Upfal, 2003). Methamphetamine, which is more potent than amphetamine (Dillon, 2003), and crystal methamphetamine hydrochloride, which is a synthetic stimulant that activates various neurotransmitters in the brain, including dopamine, serotonin, and noradrenaline (Drabsch, 2006), are both used recreationally. The former is structurally similar to MDMA (Harris, Baggott, Mendelson, Mendelson, & Jones, 2002). Use of methamphetamine, also known as speed, and crystal methamphetamine, also known as crystal meth or ice, is illegal (Taylor et al., 2004), but increasingly popular (Australian Drug Foundation, 2006; Drabsch, 2006). Onset of effects usually occurs approximately 20 minutes after oral ingestion, and effects can last up to 12 hours (Taylor et al., 2004).

Prevalence of substances in incidents of drink spiking. A great deal of conflicting evidence and argument has occurred surrounding
the prevalence of particular substances in the perpetration of drink spiking and drug-facilitated sexual assault. Most theorists have contended that although prescription and illicit substances have indeed been used to facilitate sexual assault, and that the reasons for the use of such substances are understandable, it is in fact alcohol that is used most frequently to achieve such purposes.

For example, Jansen and Theron (2004) argued that GHB is a logical option for perpetrators wishing to cause notable sedation in an unknowing person. The substance is soluble, if not already in liquid form, and can cause unconsciousness, particularly if consumed with alcohol. However, Jansen (2004) also maintained that GHB has a particularly strong taste and is therefore likely to be noticed by a person consuming a drink in which GHB has been placed. Jansen, therefore, concluded that although GHB has been used to facilitate sexual assault in Australia, the prevalence of its use has been exaggerated within community perceptions and media representations. This contention was supported by Clarke (2004) with regard to incidents in the UK.

Similarly, considerations of the use of ketamine in drink spiking and drug-facilitated sexual assault have indicated that the substance can induce effects that make the commission of an assault relatively uncomplicated, such as limb paralysis, sedation, and amnesia (Li, 1999). However, the effects of ketamine are unreliable, and small doses can exact a stimulant effect (Jansen & Theron, 2004). Researchers have therefore indicated that ketamine is unlikely to be utilised for the purposes of sexual assault, due to the possibility that it will not achieve desired effects.

A similar argument has been posited with reference to the facilitation of sexual activity through the use of ecstasy and amphetamine. Because these substances do not, generally, adversely affect memory or consciousness, it has been argued that the
substances may be administered to an unknowing consumer with the aim of reducing inhibitions, thereby promoting willingness to engage in sexual activity (LeBeau et al., 1999). However, again, these substances can be unpredictable in their effects, and may cause such negative reactions as paranoia, anxiety, panic, and hallucinations (Solowij, Hall, & Lee, 1992), which are unlikely to be conducive to engagement in sexual activity. In addition, it has been noted that ecstasy in particular tends to be associated with increases in desire for sensual physical contact, rather than enhanced sexual interest (Bellis & Hughes, 2004). For these reasons, most researchers have maintained that although ecstasy and amphetamine may have been administered in order to encourage sexual activity, these substances are unlikely to be prevalent in most cases of drink spiking and drug-facilitated sexual assault.

In contrast, a number of researchers have maintained that alcohol is the substance most commonly used in instances of drink spiking and drug-facilitated sexual assault. Alcohol increases disinhibition and reduces motor control, and also causes sedation and memory loss (Quigley, 2004). It is therefore argued that non-consensual sexual activity can occur after individuals pressure others to consume large amounts of alcohol, or after the covert addition of alcoholic shots to alcoholic beverages belonging to unknowing consumers (Bellis & Hughes, 2004).

The prevalence of alcohol in incidents of drink spiking and drug-facilitated sexual assault has been supported by research involving toxicological testing of urine and blood samples provided by victims of these offences. ElSohly and Salamone (1999) conducted such a study in the USA. A total of 1,179 urine samples were taken from law enforcement agencies, hospitals, and sexual assault services over a 26-month period, each of which was provided by a victim of alleged sexual assault. The authors’ publication provides full details of the
toxicological testing conducted. Almost 40% of all samples were negative for all substances, indicating that sexual assault had occurred without the aid of substances. Of the remaining 60%, 38% were positive for alcohol, and 35% were positive for more than one substance. The most prevalent substance after alcohol was cannabis (18% of all samples), followed by benzodiazepines (8%), amphetamines (4%), and GHB (4%). The authors noted the high prevalence of alcohol in samples provided by sexual assault victims. Hindmarch and Brinkmann (1999) utilised the data collected by ElSohly and Salamone to investigate changes in prevalence over two 12-month periods. The researchers noted an increase of positive samples for alcohol, cannabinoids, and amphetamine. Contrastingly, a decrease in an already low prevalence rate of flunitrazepam was observed.

The high prevalence of alcohol, compared with other substances, was again evident in a study conducted by Hindmarch, ElSohly, Gambles, and Salamone (2001). A total of 3,303 urine samples were collected from victims who believed that they were sexually assaulted after consuming a substance. Due to the presence of alcohol and multiple substances in the majority of samples (67% and 61% of all samples, respectively), the researchers concluded that drug-facilitated sexual assault may occur amongst groups of people who voluntarily partake in recreational alcohol and substance use. The authors also argued that it was not possible to identify a particular substance, apart from alcohol, that was more predominantly associated with drink spiking or drug-facilitated assault than any other substance.

Consistent findings were obtained in the only toxicologically-based exploration of drink spiking completed in Australia to date. A total of 81 urine samples and 63 blood samples provided by alleged spiking victims were collected by the Western Australia Police Service and the Forensic Toxicology Section of the Chemistry Centre between
June 2002 and October 2004. There was no evidence of benzodiazepines, GHB, or ketamine in any of the samples, while a small number of samples were positive for methylamphetamine, amphetamine, MDMA, and cannabis. In 78% of blood samples, alcohol was present, with blood alcohol concentrations (BAC) of over 0.15% evident in 30% of cases (Chemistry Centre WA, 2004). As abovementioned, this BAC is approaching a level where marked sedation would be expected in the consumer. The researchers again concluded that drink spiking with substances apart from alcohol is not prevalent in Australia (Chemistry Centre WA, 2004).

Although these studies appear to provide an almost conclusive argument against the common occurrence of prescription or illicit substances in the perpetration of drink spiking and drug-facilitated sexual assault, such conclusions remain problematic. The predominance of alcohol in samples provided by alleged victims may indicate that alcohol itself is used as a spiking agent. It is also possible that high levels of alcohol are voluntarily consumed by victims, leading to symptoms that increase susceptibility to sexual assault. Fallibilities with reporting processes and toxicological testing also arise the possibility that substances have indeed been consumed by victims but become undetectable by the time of testing (Taylor et al., 2004).

Immediate Outcomes

Very little empirical research investigating the immediate after events of drink spiking and drug-facilitated sexual assault has been conducted, although Taylor and colleagues (2004) assessed both physiological and behavioural sequelae of drink spiking victims. The researchers maintained that such outcomes are highly variable, but often include such physical symptoms as vomiting, impaired coordination, memory loss, and unconsciousness. These outcomes have also been noted by other authors (e.g., Schwartz & Milteer, 2000). In accordance with findings from toxicological research, Taylor et al.
(2004) maintained that such symptoms may be the result of non-consensual substance consumption or voluntary alcohol ingestion.

With regard to criminal outcomes of alleged drink spiking incidents, 76% of the participants in Taylor et al.’s (2004) sample reported that they experienced no victimisation beyond the act of drink spiking itself. However, 16% of the participants who contacted the hotline had experienced a sexual assault, as had 10% of participants in the data provided by police.

**Summary**

Overall, it is evident that drink spiking is a relatively prevalent issue within Australian society, and that a number of characteristics can be identified as potential risk factors for victimisation. Drink spiking victims tend to be young women who remain unaware of their perpetrator’s identity, and incidents occur predominantly in licensed venues, generally resulting in little consequence apart from adverse physical symptoms. Exceptions to these trends are instances of drink spiking that result in sexual assault victimisation. In such cases, victims tend to be acquainted with the perpetrator, and incidents occur more frequently in private locations, such as parties or homes.

**Part 2. Motivations for Perpetration of Drink Spiking**

As demonstrated, toxicological evidence appears to support the argument that prescription and illicit substances are not used in the majority of occurrences of drink spiking. This raises several potential explanations. It is possible that sexual assaults committed after the victim’s voluntary alcohol or substance consumption are of greater prevalence than drink spiking. It is also conceivable that adding alcohol to unsuspecting consumers’ drinks is indeed the most frequent type of drink spiking. Given that alcohol consumption does not necessarily lead to symptoms that facilitate the perpetration of sexual assault, such as sedation and memory loss, it is possible that drink
spiking is not occurring solely for the purposes of engaging in sexual activity.

It has recently been proposed that drink spiking is often perpetrated for recreational purposes – to induce intoxication in others and therefore enhance a social occasion, or to provide another person with an experience of illicit substance use (Quigley, 2004). It has also been determined that experiences of drink spiking resulting in sexual assault are generally different to those resulting in no further victimisation. It therefore seems essential that types of drink spiking are differentiated according to the purposes of the perpetrator. The following considers the possible motivations held by perpetrators of drink spiking for the purposes of committing sexual assault and for recreational purposes.

**Drink Spiking for Sexual Assault Perpetration**

Although research investigating the motivations of sexual assault perpetrators is limited (Houston, 2002), it is generally accepted that such assaults, and particularly rape, are committed not for sexual purposes but in order to obtain control and power over another person (Griffiths, 2000). As summarised by Petrak (2002):

> …rape is most often a terrorizing, aggressive act, which is carried out with the purpose of controlling, humiliating, and degrading the survivor.

(p. 7)

Such a contention is founded predominantly on research conducted with prisoners convicted of rape. An example of this research is that undertaken by Monahan, Marolla and Bromley (2005), who interviewed 33 convicted rapists in the USA. The majority of these men reported feeling a lack of control in their work life or personal relationships. Such feelings caused the men to feel hopeless and in
need of an escape; committing rape provided a situation in which the perpetrator was in complete control. Somewhat contrastingly, research conducted with community samples indicates that sexual assault is motivated by attitudes regarding relationships. These studies indicate that perpetrators of sexual assault are more likely than non-perpetrators to perceive force and coercion within relationships as being acceptable, to believe that sexual relationships are exploitative, and to endorse rape myths (Houston, 2002).

It is generally accepted that instances of stranger sexual assault are motivated by anger, a need for power and control, and a desire for humiliation. In contrast, acquaintance and date sexual assault tend to result from a desire to engage in sexual activity (Bechhofer & Parrot, 1991). It is understood that the perpetrator plans the date in advance, expecting to engage in some degree of sexual activity; if such activity does not take place, he commits a non-consensual sexual act (Abbey, 1991). Such behaviours on the part of the male college students in Koss’ (1988) study were likely to induce feelings of pride after the event.

Although the delineation between stranger and acquaintance or date sexual assault has not been made, similar trends are also evident in cases of homosexual male sexual assault. Perpetrators in community samples tend to be motivated by sexual desire, while convicted male perpetrators report being motivated by a need for power (Hickson et al., 1994). In addition, female perpetrators of heterosexual sexual assault within acquainted relationships in Anderson’s (1998) sample tended to report more hostile beliefs regarding relationships than non-perpetrators. No such research investigating perpetrators of homosexual female assault was uncovered.

To date, published research investigating the motivations of perpetrators of drink spiking is non-existent. It is possible that perpetrators who utilise drink spiking as a *modus operandi* for
committing sexual assault are motivated by the same attitudes, emotions and desires as general sexual assault perpetrators. Drink spiking, particularly when sedating substances are used, generally achieves all of the aims of a perpetrator who holds a clear intention to commit sexual assault. The sedation experienced by the victim facilitates commission of the act, predominantly through the victim’s incapacity to resist sexual advances. Many such substances also impart profound memory loss, resulting in the victim experiencing difficulties in recalling events and identifying the perpetrator. Such factors may contribute to a lower likelihood of reporting the assault to authorities.

In cases of stranger sexual assault, it is likely that these advantages of enforcing substance consumption onto a victim indicate that the act is premeditated - in Sturman’s (2000) study, all drink spiking victims believed that the perpetrator had planned the attack. Many of these perpetrators also kept photographs of their incapacitated victim “… to produce pornographic literature or as a trophy or record” (p. 19). Thus, although the act of drink spiking may be premeditated, the motivation behind the ensuing sexual assault remains unclear – in some instances, elements of control are evident, while in others, perpetrators appear to be aroused by the commission of a sexual act with an incapacitated victim.

Motivations for the perpetration of drink spiking, and consequent sexual assault, amongst acquaintances are also unclear. Past research has indicated that almost half of male college students would not rule out the possibility of committing a sexual assault if they were sure that they would not be punished (Malamuth, Haber, & Feshbach, 1980). Although attitudes may have changed since this research was conducted, it is possible that drink spiking remains an ideal method of committing a desired act without retribution. It is also likely that, because most acquaintance and date sexual assaults in general are
motivated by a desire to engage in sexual activity, sexual assaults involving drink spiking are also motivated by this desire.

In the majority of cases, stranger sexual assaults are fuelled by a need for control and power, with sexual gratification existing as a secondary motivation. On the contrary, sexual desire remains the predominant, if not the sole, motivation in the majority of cases of acquaintance and date sexual assault. Motivations for the perpetration of drink spiking acts that result in sexual assault remain unclear, as a result of the lack of research investigating these. Such issues are also complicated by issues of consent and social acceptability. It is possible that drink spiking using alcoholic shots is considered to be appropriate behaviour. It is also possible that perpetrators perceive any sexual acts that result from alcohol intoxication, regardless of whether intoxication is reached voluntarily or unknowingly, as being consensual. Clearly, further investigation of the motivations behind drink spiking, and consequential sexual assault, is necessary.

**Drink Spiking for Recreational Purposes**

Again, empirical investigation into the motivations held by people who spike drinks for essentially motiveless purposes has not been undertaken. However, as mentioned above, anecdotal evidence indicates that recreational drink spiking is undertaken either in a somewhat altruistic effort to share what perpetrators consider to be a pleasurable experience, or in an attempt to ‘prank’ the consumer of the spiked drink, thereby creating an entertaining situation (Dillon, 2003). Consideration of the motivations that fuel individuals’ own alcohol and substance use can therefore be used to obtain some insight into the reasoning for the desire to share this experience with others.
Drink Spiking With Alcohol

Recreational alcohol use is ubiquitous within most Western countries, including Australia, where over 10,000 varieties of beer, wine and spirits are available (Bloomfield, Stockwell, Gemel, & Rehn, 2003). The 2004-2005 National Health Survey indicated that 62% of adults had consumed alcohol during the week prior to data collection, while a much smaller proportion (11% of men and 20% of women) had not consumed alcohol for at least 12 months (Australian Bureau of Statistics, 2006). Problematic drinking is also prevalent in Australia, although this is more widespread amongst young adults. A total of 11% of participants in Lee’s (1998) sample of Australian adults (age: \( M = 38.0 \)) were classified as high risk drinkers, whereas 60% of young women and 75% of young men observed by Lindsay’s (2005) in four licensed venues in Melbourne were considered to be consuming alcohol at moderate or high risk levels.

Motivations for alcohol consumption are generally considered to be entrenched in both biological and social factors, including physical reactions to alcohol, alcohol expectancies, and beliefs regarding social acceptability and expectation (Ahlstrom & Osterberg, 2005; Kuntsche et al., 2005; Paton-Simpson, 1996). Kuntsche and colleagues provided a detailed review of such motivations, and categorise these into three overarching motivations – escapism from negative emotions, enhancing social scenarios, and increasing positive emotional states. Other authors have indicated that alcohol use is a learnt behaviour, often prompted by social expectations.

It is possible that such cultural expectations and motivations for alcohol use also fuel one’s decision to enforce alcohol consumption onto others via the perpetration of drink spiking. A person may engage in recreational drink spiking if he/she has experienced decreased adverse feelings and increased pleasurable feelings as a result of alcohol consumption, and perceives another person to be in need of
such positive experiences. Given the high prevalence of high-risk alcohol consumption amongst young adults, it is also feasible that intoxication is viewed as a pleasurable state, and therefore that adding alcoholic shots to another person’s drink is viewed as a harmless means of inducing a desired state of intoxication. Such a view was supported by interviews conducted by Taylor et al. (2004) with police officers, forensic scientists, representatives of the Australian Hotels Association, and staff at sexual assault agencies, government departments, hospitals and gay and lesbian services. The authors reported that these professionals were of the opinion that recreational drink spiking was “…extremely common…” (p. 60), and that perpetrators of such acts were motivated by a wish for friends to enjoy themselves.

**Drink Spiking With Substances**

A number of studies have investigated the prevalence of illicit substance use in Australia. Not surprisingly, national surveys indicate that illicit substance use is notably lower than alcohol use. In the 2004 National Drug Strategy Household Survey, 38% of Australians aged 14 years and older reported at least one experience of illicit substance use, while 15% reported use during the previous 12 months. The most commonly used illicit substance during the 12 months prior to the survey was marijuana (used by 11% of Australians), followed by prescription medications (6%), ecstasy (3%) and amphetamine or methamphetamine (3%). Ketamine and GHB were used by 0.3% and 0.1% of Australians during the past 12 months, respectively (Australian Institute of Health and Welfare, 2005).

Some exploration of substance use within the homosexual community has also been conducted in Australia. A longitudinal study determined that 58% of lesbian women (age: 22-27 years) had used illicit substances in the previous 12 months – a rate that was significantly higher than the prevalence rate of use amongst heterosexual women.
(McGuigan, 2004). Similar rates were obtained in a survey of gay men in Sydney – 44% of participants had used ecstasy in the previous six months, while 29% reported methamphetamine use (McGuigan, 2004).

Many studies have also indicated that most recreational users do not limit their use to one substance. For example, of the self-identified ecstasy users in the 2004 National Drug Strategy Household Survey, 82% had used alcohol while ecstasy-affected. Fifty-seven per cent had engaged in concurrent ecstasy and marijuana use, while 39% had usedamphetamine or methamphetamine (Australian Institute of Health and Welfare, 2005). Frequency of concurrent substance use was explored by Degenhardt (2004), who provided details on a sample of 809 Australian users (age: \( M = 25.0 \)) of “party drugs”, or substances that are used to enhance social occasions. More than 95% of the sample reported that they most commonly used ecstasy, in addition to such other substances as alcohol, cannabis and tobacco. Respondents also reported at least monthly use of methamphetamine or crystal methamphetamine, while 1% of the sample reported use of GHB or ketamine in the six months prior to data collection. Similar rates of multiple use were obtained in the national Party Drug Initiative (White, 2004). Of all ecstasy-using participants, approximately 25% had used cocaine and ketamine in the previous six months, while 10% had used GHB.

In contrast with the relatively low prevalence of concurrent ecstasy and GHB use found in these studies, a sample of 76 GHB users in Melbourne and Sydney (age: \( M = 27.0 \)) reported much higher use of ecstasy. Between 87% and 89% of GHB users also used ecstasy, with smaller proportions using cocaine, methamphetamine, amphetamine, cannabis, ketamine and alcohol. At least half of the GHB users had used one of these substances in the past six months (Degenhardt et al., 2003). GHB users in the 2004 National Drug Strategy Household Survey also reported on the substances used while they were GHB-affected in
the past 12 months. Almost half had used marijuana, while 43% had used Viagra, 41% had used amphetamine or methamphetamine, and 33% had used alcohol (Australian Institute of Health and Welfare, 2005). It therefore appears that although ecstasy and GHB users tend to consume alcohol while substance-affected, GHB users are more likely than ecstasy users to also use a number of other illicit substances.

Prevalence rates of substance use in other Western countries have also been explored, with most finding similar trends as those identified in Australian samples (for further information, see Curran & Monaghan, 2001; Curran & Travill, 1997; Harris et al., 2002; Hughes, 2004; Kilpatrick et al., 1997; Schifano et al., 1991).

The vast majority of research indicates that recreational substance use is initiated for the purposes of enjoyment (Solowij, 1993; Solowij et al., 1992). Although motivations become more complicated if substance addiction occurs, most users report that the positive experiences induced by “party drugs” function as a primary motivation. GHB, ecstasy and amphetamine in particular have been associated with the experience of pleasurable emotional states. GHB, when taken in relatively small doses, generally induces feelings of euphoria (Galloway et al., 1997; Jansen, 2004; Smith & Temple, 2000; Taylor et al., 2004). Ecstasy use also produces such euphoric sensations (Harris et al., 2002), but is also known to cause increased feelings of intimacy with others and confidence (Solowij et al., 1992; White, 2004), in addition to enhanced openness and responsiveness and improved awareness of environmental and sensory stimuli (Vollenweider, Gamma, Liechti, & Huber, 1998). Slightly different experiences are reported after use of amphetamine or methamphetamine. Although positive mood states are induced by the substance, amphetamine is also known for stimulating increased energy, talkativeness, alertness and tolerance (Solowij et al., 1992). In some contrast with these substances is ketamine, which often results in a trance-like state.
(Mozayani, 2002), whereby the user feels somewhat disconnected with themselves and reality (Jansen, 2000). Users generally consider such a state to be a positive experience.

Not only do these illicit substances induce positive experiences, but negative consequences are relatively infrequent. Although GHB use can result in coma and unconsciousness, hospital presentations amongst users of small amounts are rare (Eade & Patrick, 2004). Overdose or death after ecstasy or ketamine use is also very rare (Hunt, 2004; Jansen, 2000). Ecstasy in particular is likely to produce difficulties with concentration and decision-making (Vollenweider et al., 1998), in addition to a degree of depressed mood on the days following ingestion (Solowij et al., 1992). However, as demonstrated by a literature review of 24 studies conducted by Baylen and Rosenberg (2006), the majority of ecstasy users experience desired effects more frequently and more intensely than they experience negative effects.

Given the dominant perception amongst recreational substance users that the positive consequences of substance use outweigh the negative consequences, it is viable that drink spiking with illicit substances might occur amongst friends who wish to either share such positive experiences or enhance the experiences of others. Such possible motivations remain similar to those discussed above, in relation to the adding of alcoholic shots to others’ beverages for recreational purposes.

**Summary**

The undertaking of empirical investigation of the motivations of sexual assault in general provides some indication of possible motivations for the use of drink spiking to facilitate the commission of such assault. Yet, these motivations remain theoretical, due to the lack of specific spiking-related studies that explore the motivations held by perpetrators. In addition, recent opinions held by professionals within the hospitality, law enforcement and sexual assault industries regarding
the prevalence of recreational drink spiking indicate the possible presence of non-sexual motivations amongst perpetrators. Gaining clarity on the types of motivations held by perpetrators may result in the development of effective prevention and intervention strategies. It is clear, then, that empirical investigation of a range of drink spiking motivations is necessary.

Part 3. The Aftermath of Drink Spiking

It is widely recognised that drink spiking is rarely a pleasant experience. Indeed, even if the experience of drink spiking does not result in additional criminal victimisation, the event is often associated with adverse physical and psychological symptoms. In addition, the typical features of victimisation, including sedation and memory loss, often result in victims not reporting the incident to relevant authorities due to their incapacity to provide details that may assist in enforcing punishment on the perpetrator. Moreover, victims who do report the incident often fail to receive emotional support, and the process rarely leads to identification and prosecution of the perpetrator, making the process futile. For these reasons, a number of attempts to rectify issues faced by drink spiking victims have been made. These include recommendations for law reforms that allow the prosecution of perpetrators who use alcohol as spiking agent, and the development of interventions and prevention campaigns that aim to raise awareness of the issue and promote the use of behaviours that guard against victimisation. The following review provides further detail about typical after events of drink spiking victimisation, and discusses a number of reforms and prevention strategies.

The Physical and Psychological Effects of Drink Spiking Victimisation

Very little research investigating the after effects of drink spiking victimisation has been conducted; again, the study conducted by Taylor et al. (2004) remains the most detailed analysis of victim’s experiences after their spiking. The authors reported that many drink
spiking victims, particularly those who were sexually assaulted after being spiked, experienced symptoms of anxiety when visiting licensed premises. This was exacerbated amongst victims who were unconscious at the time of being sexually assaulted; such participants expressed fear of having further contact with the perpetrator without knowing whom he was. Taylor and colleagues (2004) concluded that “...many sexual assault victims experienced severe and ongoing trauma long after the incident” (p. 43).

Despite the lack of research exploring the effects of drink spiking victimisation, the potential effects of victimisation can be considered on the basis of likely effects of the substances used in the spiked drink, and the consequences of the victimisation, such as sexual assault, which is the most common type of criminal victimisation associated with spiking (Taylor et al., 2004).

**The Physical and Psychological Effects of Substance Ingestion**

Discussion in Part 2 emphasises how recreational substance use is primarily motivated by the positive experiences that typically result from substance consumption. However, the number of potential negative consequences of substance use remains relevant in circumstances where substances are unknowingly consumed. Although perpetrators of drink spiking may intend for the experience to be a positive one for the victim, it is highly possible that the unknowing consumer will experience at least minor, if not severe, adverse effects.

It is almost impossible to predict the exact effects that a particular substance will have on a specific individual, particularly because many recreational substances are produced in clandestine laboratories, making users unaware of potential contaminating substances used during production (White, 2004). Ecstasy in particular has been associated with hundreds of physical and psychological effects (Baylen & Rosenberg, 2006). Other substances, such as GHB, GBL and 1,4-B, have narrow therapeutic windows, meaning that doses
required for positive effects and doses that induce coma are very similar (Dillon, 2003; Eade & Patrick, 2004; Munir, 2004) and are somewhat dependent upon individual physiological characteristics. Thus, drink spiking with illicit substances has the potential to cause any number of potentially adverse symptoms, particularly when appropriate doses are estimated or not considered at all.

Illicit substance use is also associated with the experience of negative physical and psychological symptoms. These symptoms are generally not of a severity sufficient to discourage recreational use, or do not outweigh the perceived positive aspects of recreational use. However, they are likely to cause distress in a drink spiking victim who has not voluntarily engaged in behaviours that induce these symptoms, particularly if the symptoms are unfamiliar. For example, ecstasy use often produces a range of adverse side effects, including teeth grinding, decreased respiration, jaw tension, perspiration, dehydration, headache, nausea and vomiting (Baylen & Rosenberg, 2006; 2005; Jansen & Theron, 2004; Solowij et al., 1992). Methamphetamine ingestion may cause such side effects as chest pains, tremors and heart palpitations (Dillon, 2003).

Not only do substances induce symptoms that may be distressing after non-consenting or unfamiliar ingestion, but they are also capable of causing significant adverse reactions, such as overdose and death. Although ecstasy-related deaths are rare, users have reported experiencing overdoses (Solowij et al., 1992; White, 2004). Overdose is also common amongst GHB users – 53% of the participants in Degenhardt, Darke and Dillon’s (2003) sample reported overdosing at least once. Several deaths have also been directly attributed to GHB and 1,4-B (Caldicott et al., 2004; Theron, Jansen, & Skinner, 2003). Such potential consequences demonstrate the highly dangerous aspects of drink spiking.
As ecstasy and amphetamine affect neurotransmitters that are associated with mood and anxiety (Steele, McCann, & Ricaurte, 1994), psychological symptomatology is also often evident after ecstasy and methamphetamine use. Consumers of these substances often report the experience of anxiety, depressive symptoms, and paranoia (Baylen & Rosenberg, 2006; Dillon, 2003). Ketamine use may be particularly problematic if adverse symptoms are induced in people who have unknowingly consumed the substance. Ketamine has been linked with increased schizotypal symptomatology and dissociation, both on the day of consumption (Curran & Morgan, 2000) and on days after consumption (Curran & Monaghan, 2001). In addition, ketamine is likely to produce a number of unusual sensations, including an inability to speak, blurred vision (Dillon, 2003), insensitivity to pain (Taylor et al., 2004), hallucinations, paranoia, and being unable to communicate despite being conscious (Mozayani, 2002). Such effects may be particularly traumatic for a person who is unaware that they have consumed a substance. Even in circumstances where the consumer is able to recognise these effects as being substance-induced, the involuntary nature of the causation of these symptoms is may result in significant distress and/or anger on the part of the consumer.

Negative physiological and psychological reactions to substance use are often exacerbated in the context of multiple drug use. The side effects of ecstasy, GHB, and amphetamine are amplified when these substances are mixed with alcohol (Dillon, 2003; Galloway et al., 1997; Munir, 2004), and substance-related hospital presentations often result from the ingestion of multiple substances (Hunt, 2004; Munir, 2004). Ecstasy use, in combination with moclobemide, has also resulted in death (Vuori et al., 2002), indicating the potentially fatal consequences of mixing illicit and prescription substances. It is therefore apparent that adding various substances to a beverage belonging to an unknowing consumer may amplify the already
negative aspects of drink spiking victimisation. Such harmful reactions may also be experienced after the voluntary consumption of alcohol or substances is followed by a drink spiking episode.

Finally, drink spiking has implications for victims who intend to drive a motor vehicle shortly after the spiking incident, as both alcohol and illicit substances inflict negative effects on driving capacity. Winstock (2004) reported that the risk of involvement in a motor vehicle accident increases fourfold when the driver has a blood alcohol concentration between .05 and .10. Moreover, although stimulants such as ecstasy and amphetamine can increase alertness and vigilance, they also decrease judgement and impulse control. Indeed, it has recently been shown that the driving ability of MDMA-affected drivers is improved in some aspects, notable impairments in other facets are evident (Ramaekers, Kuypers, & Samyn, 2006). Drink spiking, then, may exact potentially devastating effects on victims. Victims who have been spiked with alcohol may not be aware of the exact amount that they have consumed; similarly, victims of spiking using substances may be unaware of the effects of the substance on driving ability. Victims may therefore attempt to drive before the substance has left their body, thus creating potentially dangerous and illegal driving circumstances.

Given that drink spiking is an unplanned event, and victims may not have experience with voluntary substance consumption, victims may experience adverse effects as a result of the incident. Consideration of the negative consequences of substance use therefore provides an insight into the possible experiences of drink spiking victims.

**The Physical and Psychological Effects of Sexual Assault Victimisation**

Although sexual assault is considered to affect victims in a multitude of ways (Campbell et al., 2004; Resick, 1993), a number of physical and psychological sequelae are common amongst many
victims. It is also salient to note that both female and male victims of assault experience similar reactions (Mezey & King, 1980), and that often negative consequences are worsened when assaults are committed while the victim is intoxicated (Cameron & Stritzke, 2003; Struckman-Johnson & Struckman-Johnson, 1998).

Sexual assault victims are at risk of experiencing both pregnancy and sexually transmitted diseases (STDs; Griffiths, 2000). Studies have indicated that high-risk sexual behaviours, such as engaging in unprotected sexual intercourse, are more likely to occur after alcohol consumption (e.g., MacDonald, MacDonald, Zanna, & Fong, 2000), indicating that pregnancy and STDs may be of greater concern in instances where perpetrators are alcohol-affected. This is likely to be the case in cases of acquaintance and date sexual assault, and is also probable in cases of drink spiking and drug-facilitated sexual assault.

Victims of sexual assault are also likely to experience psychological symptoms (Kimerling & Calhoun, 1994). Various studies have indicated that female victims may display fear, anxiety, sexual dysfunction (Resick, 1993), decreased sexual self-esteem (Shapiro & Schwarz, 1997), anger, depressive symptoms (Koss, 1988), and suicidal ideation (Koss et al., 1988). However, reports by male victims of sexual assault are inconsistent. For example, one study determined that such victims reported more depressive symptoms than non-victims (Larimer et al., 1999). In contrast, only 23% of participants in Struckman-Johnson and Struckman-Johnson’s (1998) study stated that they were moderately upset by the incident, with 33% reporting that the event did not have a negative impact on them.

Reports of the psychological sequelae experienced by homosexual victims of sexual assault are limited. Studies have generally indicated that men frequently report such adverse emotional states as vulnerability, anger, and irritability after experiencing a sexual assault perpetrated by another man (e.g., King, 1992; Stermac et al., 1996).
The effects of victimisation on lesbian and bisexual women are also relatively unknown, as illustrated by Balsam (2003) in her review of the research pertaining to such victimisation. Balsam concluded that homosexual women are affected by victimisation in a multitude of ways. She contended that lesbian and bisexual women may be particularly traumatised after experiencing sexual assault victimisation in addition to such common and traumatic events as hate crime and homophobia. However, she also suggested that as a result of existing as a minority within the community, lesbian and bisexual women may be particularly resilient to adverse outcomes, thereby displaying fewer negative reactions to sexual victimisation.

It is also apparent that women who have been victimised on multiple occasions report greater symptoms of post-traumatic stress disorder, depression, and anxiety than women with no history of abuse and women who have experienced victimisation on a single occasion (Gidycz, Coble, Latham, & Layman, 1993; Messman-Moore et al., 2000; Wilson et al., 1999). A review of 90 empirical studies also demonstrated that revictimised women report difficulties in social relationships and cognitive functioning, as well as higher levels of shame and powerlessness, than non-victimised or singly-victimised women (Classen, Palesh, & Aggarwal, 2005). Similar difficulties have also been reported in samples of men who have experienced both childhood and adulthood sexual victimisation. Indeed, revictimised men often experience severe psychological distress, including increased post-traumatic stress symptoms and dissociation (Aberle, 2001).

Increased psychological symptomatology amongst revictimised adults is also evident in gay, lesbian, and bisexual populations. It is noteworthy that much of this research has focussed on childhood victimisation followed by adulthood victimisation, as opposed to multiple victimisations during adulthood. For example, Heidt and colleagues (2005) determined that participants who had experienced
sexual revictimisation reported greater psychological distress than participants who had not experienced victimisation or who had experienced victimisation on a single occasion. A similar study of gay men also determined that revictimised participants were not more likely than non-victimised and singly-victimised men to display dissociation or trauma-related anxiety; however, these men were more likely to demonstrate borderline personality traits (Kalichman et al., 2001). The relative lack of research investigating revictimisation in gay, lesbian and bisexual people means that conclusions must be reached with caution. However, these studies suggest that victims of multiple sexual assaults are particularly susceptible to negative psychological outcomes, regardless of sexuality.

Despite the apparent association between sexual revictimisation and adverse psychological sequelae, it has been noted that most studies of revictimisation are cross-sectional, and it is therefore difficult to determine whether these difficulties are risk factors or consequences of multiple victimisations (Classen et al., 2005). Nonetheless, it is indisputable that sexual assault generally causes some degree of distress, if not severe traumatic responses.

**Reporting Drink Spiking Victimisation**

The after events of drink spiking are not only characterised by physical and psychological consequences experienced by the victim. Drink spiking victims are also likely to experience a number of difficulties when considering whether to report their victimisation to relevant authorities (e.g., police, support services) or the venue at which the spiking incident occurred.

**The Underreporting of Drink Spiking Victimisation**

Although little research into the reporting of drink spiking has been conducted, the available evidence suggests that reporting rates are low. Taylor and colleagues (2004) estimated that 20-25% of drink spiking incidents that do not involve sexual assault victimisation are
reported to police. Even fewer (approximately 15%) spiking-related sexual assaults are reported to the police. Reporting to informal sources (i.e., friends and relatives) of spiking-related sexual assaults is estimated to be higher – of the participants in Taylor and colleagues’ (2004) study, 68% discussed their victimisation with friends and 40% advised family members of the incident. In contrast, only about 13% of incidents are reported to the venue staff at which the incident occurred.

These reporting patterns are consistent with those frequently published in studies of sexual assault victims that are not related to drink spiking, where the vast majority of victims do not report their experiences to authorities (e.g., Greene & Navarro, 1998; e.g., Koss et al., 1987) but instead opt to discuss these with friends or family (e.g., Ullman & Filipas, 2001).

One of the reasons postulated to explain the lack of reporting of drink spiking victimisation is the lack of acknowledgement that drink spiking is an inappropriate and potentially dangerous behaviour. To date, research exploring such acknowledgement as not been conducted; however, a great deal of research indicates that acknowledgment of sexual assault contributes significantly to the likelihood of reporting such assaults to relevant authorities – if a victim does not recognise his/her victimisation as sexual assault, he/she is extremely unlikely to report the act (Kahn & Andreoli Mathie, 2000). An unacknowledged sexual assault victim is defined as one who has experienced an incident that would meet the criteria of sexual assault, but who does not consider themselves to be a victim of sexual assault (Kahn & Andreoli Mathie, 2000). Past research has indicated that approximately one half of rape victims are unacknowledged victims (Kahn, Jackson, Kully, Badger, & Halvorsen, 2003). Kahn and Andreoli Mathie (2000) theorised that lack of acknowledgement is fuelled by a preconceived sexual assault script, or an idea of the typical characteristics of sexual assault. It is argued that if one’s experience of
sexual assault does not match their preconceived ideas, they are unlikely to acknowledge their experience as sexual assault. Kahn and Andreoli Mathie (2000) further contended that this lack of acknowledgement is also possible if the victim does not experience a significant adverse reaction to their assault. Kahn and colleagues (2003) also found that lower levels of acknowledgement are common amongst women who were assaulted by a romantic partner, or who were assaulted while under the influence of alcohol or illicit substances.

It is highly possible that lack of acknowledgment is common amongst drink spiking victims for similar reasons. The common community perception of drink spiking is that it is an act committed by strangers for the sole purpose of committing sexual assault (Taylor et al., 2004). Thus, if a victim experiences a drink spiking incident perpetrated by an acquaintance or partner, and this experience contradicts the victim’s preconceptions about typical drink spiking incidents, the victim is unlikely to acknowledge the event as spiking. In addition, lack of acknowledgement may also occur if the drink spiking does not result in adverse consequences, or if the incident occurred after voluntary alcohol or substance consumption. As posited by Kahn and Andreoli Mathie (2000), this lack of acknowledgement is likely to result in a lack of reporting of drink spiking incidents.

It has been contended that the reasons for refraining from reporting drink spiking victimisation are similar to those held by sexual assault victims (Taylor et al., 2004). Both male and female victims of sexual assault cite such reasons as fear, guilt, shame, embarrassment, and humiliation as dominating their decision to avoid reporting to authorities (Foote, Wangmann, & Braaf, 2004; Karabatsos, 1997; King, 1992; Lievore, 2003). Similar emotions have been reported by both drink spiking victims and members of relevant authorities, such as police officers and sexual assault agency staff (Taylor et al., 2004). In addition, often drink spiking victims are unable to recall details of the incident.
and therefore perceive police reports as being futile, as charges and convictions are unlikely if the offender cannot be identified; again, this is similar to perceptions held by sexual assault victims. It appears to be a commonly-held belief that members of the criminal justice system are likely to either disbelieve victims, or be unable implement to provide assistance (Lievore, 2003; Lievore, 2005).

Another issue that is likely to affect reporting rates of drink spiking victimisation is that of blame and responsibility. Very little research exploring this issue pertains directly to drink spiking; however, the literature relating to the reporting of sexual assault enables the development of some understanding of how blame and responsibility may affect the reporting of drink spiking.

A number of studies have shown that when presented with hypothetical scenarios involving sexual assault, most men and women blame the perpetrator, rather than the victim, for the assault (e.g., Cameron & Stritzke, 2003; Whatley & Riggio, 1993). However, several studies have also established that male participants tend to blame victims more than female participants do (e.g., Bell, Kuriloff, & Lottes, 1994; e.g., Koss, 1988; McDonald & Kline, 2004; Whatley & Riggio, 1993). It also appears that victims are blamed more often when they experience acquaintance or date sexual assault than when they experience stranger sexual assault (e.g., Bell et al., 1994). Moreover, numerous studies have indicated that degrees of blame for the perpetration of sexual assault alter when alcohol or substance consumption is undertaken prior to the assault occurring. The majority of such research has concluded that, when comparing sober and intoxicated characters in scenarios involving a sexual assault, people are less likely to place blame on alcohol-affected perpetrators, and more likely to place responsibility on alcohol-affected victims (e.g., Abbey et al., 1996; Cameron & Stritzke, 2003; Sims, Noel, & Maisto, 2007; Stormo, Lang, & Stritzke, 1997; Ullman & Filipas, 2001). Study participants
are also less likely to acknowledge that a sexual assault has occurred if the hypothetical characters were alcohol-affected (e.g., Norris & Cubbins, 1992).

To date, only one study has explored this issue in relation to involuntary substance consumption prior to sexual assault victimisation. Angelone, Mitchell, and Pilafova (2007) utilised a sample of 198 American students (age: 18-48 years, $M = 19.9$, $SD = 3.0$), and provided participants with hypothetical scenarios involving both voluntary and involuntary alcohol and GHB consumption preceding a sexual assault. The researchers found that victims who voluntarily consumed alcohol or GHB were blamed for the assault to a greater degree than those who had involuntarily consumed the substance. In addition, participants believed that perpetrators were deserving of less blame if they assaulted a voluntarily intoxicated victim than perpetrators who assaulted a victim who had been spiked.

Thus, the body of research that has begun to explore issues of blame and responsibility with regard to drink spiking appears to illustrate similar trends to those that have been identified via sexual assault research. It is therefore probable that these trends affect the expectations held by drink spiking victims when considering reporting the incident. A number of relevant authorities are male-dominated; for example, the Victoria Police had a female contingent of 20% of all staff in 2004/2005 (Victoria Police, 2005). If victims expect to be blamed by men, they may be unlikely to report to such male-dominated authorities. Similarly, if drink spiking victims were targeted by acquaintances, or after voluntary consumption of alcohol or substances, they may again expect to receive blame, thereby reducing the likelihood of reporting.
The Difficulties Associated With the Reporting of Drink Spiking Victimisation

Many studies have reported that the reporting of sexual assault victimisation can be a traumatising and ineffectual experience given the need for victims to describe the details of their assault and undergo invasive investigations. Moreover, the frequent lack of criminal convictions resulting from the process is commonly cited as a major deterrent to reporting (Greene & Navarro, 1998; King, 1992; Koss, 1988). The experiences of the drink spiking victims interviewed by Taylor et al. (2004) are testament to this issue. These researchers found that only 18% of the drink spiking incidents reported to the police were investigated, and of these, almost a third were reported to have simply been dismissed. In explanation, police officers in the study indicated that criminal investigations were often impossible, due to the lack of evidence and identifying details provided by victims. Police officers also stated that victims, particularly those who were sexually assaulted after the spiking, were often dissuaded from proceeding with prosecutions due to the traumatising nature of their experiences and the difficulties associated with obtaining a successful outcome.

Respondents in Taylor et al.’s (2004) study also reported difficulties with reporting their experiences to medical authorities and venue staff. Although 40% of those reporting to medical staff undertook toxicological testing for substances, only 8% of these received a positive test result, with the remainder, for reasons discussed below, remaining inconclusive. One positive of this reporting was the monitoring and counselling support provided by medical staff. Such positive experiences were generally not experienced by victims who reported to venue staff. Although 25% of these victims indicated that staff completed a written report of the incident, almost 50% were dismissed with no action taken.
Even when reports are made to authorities and victims undertake toxicological testing, a number of additional difficulties arise. To begin with, standard testing does not necessarily detect all substances that can be used in drink spiking incidents, and specific testing must therefore be requested by medical professionals (Pope & Shouldice, 2001). However, comprehensive testing is not necessarily capable of detecting substances after they are metabolised, as this process leaves only a small amount of the substance in the system (Griffiths, 2001). For example, most benzodiazepines are eliminated rapidly, making toxicological screening difficult (Boussairi et al., 1996). Although flunitrazepam, which has often been associated with drink spiking, is detectable for up to 20 hours after consumption (Mattila & Larni, 1980; Simmons & Cupp, 1998), other benzodiazepines are eliminated rapidly, making toxicological screening difficult (Boussairi et al., 1996). Illicit substances also tend to be metabolised more quickly than flunitrazepam. Ketamine, for example, is metabolised within 4 hours (Mozayani, 2002), and GHB is mostly excreted through urine during the six hours immediately following ingestion (ElSohly & Salamone, 1999), and detection is very difficult (Caldicott et al., 2004).

Often, drink spiking victims suffer memory loss or unconsciousness and therefore do not present for testing until a delay after substance ingestion has occurred (Taylor et al., 2004). Such delays can clearly result in the failure to detect a substance that may indeed have been ingested by a drink spiking victim. In addition, detection of substances may indicate voluntary consumption by the alleged victim, and therefore do not necessarily prove that a spiking incident has occurred. In addition, tests that uncover a high blood alcohol concentration may signify either voluntary alcohol consumption or spiking with additional alcoholic shots (Taylor et al., 2004).

It is therefore apparent that the detection of drink spiking is rife with complications and difficulties. Although it is quite possible that
spiking victims experience adverse physical and psychological sequelae of the event, it is unlikely that victims will report their events to authorities that are capable of reducing, if not eliminating, the incidence of drink spiking. Even when victims do report on their experiences, fallibilities associated with criminal investigations and toxicological testing can combine, such that positive outcomes are rarely achieved.

**Efforts Aimed at Rectifying the Issues Relating to Drink Spiking**

Given the number of difficulties associated with reporting drink spiking victimisation and prosecuting perpetrators, consideration has been given to the legal aspects of spiking. Many commentators contend that stringent laws and successful prosecutions are likely to inhibit potential perpetrators from engaging in drink spiking behaviours (Taylor et al., 2004). In addition, the potentially traumatic consequences of spiking have prompted a number of prevention campaigns as well as recommendations for future campaigns aimed at decreasing victimisation. The following considers recent law reforms and reviews drink spiking campaigns in Australia.

**Law Reforms and Recommendations**

Currently, in Australia, there does not exist a law that specifically focuses on the act of drink spiking (Model Criminal Code Officers’ Committee of the Standing Committee of Attorneys-General (MCCOC), 2007). However, most states maintain laws that prohibit against intentions to cause harm, in addition to laws that relate to adverse outcomes of drink spiking, allowing police to prosecute under a number of statutes. Most states have criminalised the act of administering a substance to another person with the intention of causing harm. However, these laws are not necessarily relevant to the use of alcohol as a spiking agent, as alcohol is not a controlled or prohibited substance (MCCOC, 2007; Taylor et al., 2004).
Various laws throughout Australian jurisdictions also prohibit the administration of a stupefying substance with intent to commit a criminal offence (MCCOC, 2007), while others focus specifically on the outcomes of the offence, including the causation of bodily harm, the perpetration of assault, and the commission of manslaughter or murder. Each of these is covered by laws in all States and Territories of Australia, although some complications are evident with regard to post-spiking sexual assault. Laws in South Australia, Western Australia, and the Northern Territory apply to all types of sexual assault involving the addition of alcohol or substances to a victim’s beverage. However, laws in New South Wales, Queensland, and Tasmania do not apply where alcohol is used as the spiking agent. In Victoria, legislation covers the use of alcohol, but applies only when sexual penetration, as opposed to non-penetrative sexual assault, is committed (MCCOC, 2007). Nonetheless, all states uphold laws relating to the need for all sexual activity to be consensual, and the incapacity of intoxicated persons to provide consent to sexual activity (Foote et al., 2004; Griffiths, 2000; Neame, 2004).

A full review of these laws is provided by the MCCOC (2007). Overall, it remains evident that although the more severe outcomes of drink spiking are punishable by law, the act of drink spiking itself is not necessarily illegal, unless harmful intent or outcomes can be proven. For this reason, the MCCOC (2007) recommended that a summary offence of drink spiking without further intent be introduced in all Australian jurisdictions, and that this law incorporate the use of any substance that is intended to, or is likely to, adversely affect the consumer’s bodily function or consciousness. At the present time, no such offence has been established in any jurisdiction in Australia, although governments in New South Wales, Victoria and the ACT have indicated intention to do so in the near future.
Prevention Campaigns

A number of drink spiking campaigns have been undertaken throughout Australia (see Taylor et al., 2004, for a full review), most of which are aimed at reducing drink spiking victimisation by increasing potential victims’ use of protective behaviours, such as supervising one’s drink (Fyfe & Newell, 2002; Neame, 2004; Taylor et al., 2004). Examples of such campaigns include the Australian Defence Force Mental Health Strategy drink spiking fact sheet, the Victorian Law Enforcement Drug Fund campaign, CASA House’s “Keep an eye open” campaign, and the “Watch your drink, yourself and your friend” campaign in the Northern Territory. Many campaigns, such as the AIDS Council of NSW’s campaign, the Manly “Don’t Get Spiked” campaign, and the “Drugged and Assaulted” campaign undertaken by the Central Sydney Area Health Service, also focus on increasing community awareness of the potential for perpetrators to utilise drink spiking to commit criminal acts, usually sexual assault.

While positive in intent, these campaigns have been criticised for their tendency to place responsibility for avoiding drink spiking on victims rather than providing messages that prevent perpetrators from committing such acts (Neame, 2003; 2004). As a consequence, several more recent campaigns have broadened their conceptual focus to emphasise that drink spiking is an issue that must be rectified by the entire community. As such, these campaigns have focussed on relevant industries (e.g., licensed venues, sexual assault agencies) and have incorporated the provision of education and training to staff members. For example, the NSW Violence Against Women Strategy liaised with venue licensees, bar staff, and security staff to alter drinking environments, making drink spiking less covert and more difficult to conceal (Fyfe & Newell, 2002). In addition to such campaigns, organisations overseeing licensed venues have taken independent action in an attempt to reduce drink spiking. Similarly, all bar staff in
Victoria, Tasmania, Western Australia, and the ACT are now trained in recognising and responding to drink spiking incidents during their Responsible Service of Alcohol Training (Taylor et al., 2004). Similarly, in 2002, the Australian Hotels Association implemented a zero tolerance policy on violence in licensed venues; this included the provision of information to licensees and venue staff regarding drink spiking (Foote et al., 2004).

Two drink spiking campaigns, in particular, have utilised a comprehensive approach to prevention. The Western Australia Drink Spiking Education Project targeted individuals, environments where drink spiking is likely to occur, and cultural beliefs and expectations that may contribute to the perpetuation of drink spiking. The campaign was conducted between March 2002 and July 2002, and utilised venue advertising, peer education, and liaison with police officers, sexual assault agency staff, drug and alcohol workers, and licensed venue staff. Although specific outcome measurement was not undertaken, most stakeholders regarded the campaign positively, and advertising material was taken by 75,000 female patrons of licensed venues. Notably, reports of drink spiking made to police following this campaign increased by 75% (Fyfe & Newell, 2002).

Empirical investigation of outcomes was conducted as part of the “Keep an Eye Open” campaign, which was launched in May 2002, and included advertising located in licensed venues, featuring separate messages that were specific to female victims and male perpetrators of drink spiking. Women were advised of the prevalence of drink spiking and its potential outcomes, and were encouraged to utilise protective behaviours and seek support if they experienced drink spiking victimisation. Men were made aware of the criminal status of drink spiking and were encouraged to act protectively towards potential victims. Venue staff were also provided with information
regarding signals of drink spiking victimisation and appropriate reactions to spiking incidents.

The campaign was followed by investigation of attitudes and reactions by both staff and patrons. Surprisingly, the outcome data suggest that the campaign was not well received. Almost all patrons reported that they had been aware of drink spiking prior to the campaign, and more than half of respondents indicated that the campaign failed to provide them with any ‘new’ information. Only a minority of respondents (20%) reported that the campaign made them aware of services that could be contacted after a drink spiking incident. Nevertheless, it was noted that most patrons not only felt safer in the premises as a result of the campaign, but were also more positive about venue management, who were perceived to be caring for patrons’ safety (Munro, 2003).

In addition to prevention campaigns, a number of commercial products have been developed that allow consumers to either protect their beverages from potential added substances, or to test their beverages for the presence of non-alcoholic substances. Such products include awareness wristbands, coasters that detect the presence of illicit substances in beverages, and anti-spiking beverage lids. Perhaps the most common of these products are the Drink Guard and the Drink Detective, the former of which has been marketed as the Drink Safe Detector in Australia. Both products are cards that allow a consumer to identify the presence of either GHB and ketamine (Drink Guard), or GHB, ketamine, and any benzodiazepine (Drink Detective), by placing a drop of their beverage onto the card. The testing section of the card changes colour if one of these substances is detected. However, the effectiveness of each of these products has been questioned. A recent study by Beynon, Sumnall, McVeigh, Cole, and Bellis (2006) found that both products demonstrated poor sensitivity to potential spiking substances. The Drink Detective was able to correctly
identify the presence of substances in only 69% of trials, and this rate
was found to decrease when substances were placed in beer.
Similarly, although the Drink Guard was successfully able to detect
ketamine, its sensitivity to GHB was very low, and a significant number
of false positive results were obtained when using water as the base.
Beynon et al. (2006) concluded that although further investigation is
required, these products cannot currently be considered to be
effective in accurately determining the presence of substances in
beverages.

**Recommendations for the Prevention of Drink Spiking**

Previous and current attempts to prevent drink spiking have
therefore displayed limited success, leading to the development of a
number of recommendations for future preventative efforts. A wide
body of sexual assault research has provided recommendations for the
prevention of stranger, acquaintance and date sexual assault, much
of which remains potentially relevant to the prevention of drink spiking.
For example, it has been recommended that prevention strategies
focus on addressing beliefs and expectations held by perpetrators
(Abbey et al., 2001; Zawacki et al., 2003), while also teaching potential
victims to accurately perceive risk (Testa & Livingston, 2000) and cope
with high-risk situations (Wilson et al., 1999). Additionally, researchers
have recommended that potential perpetrators and victims be
educated on issues of alcohol misuse, particularly with regard to
obtaining consent (Abbey, 2002; Abbey et al., 1996), and
communicating clearly (Abbey et al., 1998; Muehlenhard, Andrews, &
Beal, 1996).

The concepts of awareness raising, education, and maintaining a
focus on perpetrators in recommended sexual assault prevention
programs are also evident in recommendations posited by researchers
for preventing drink spiking. Taylor and colleagues (2004) proposed
that interventions focus on providing potential victims, both male and
female, with accurate information about drink spiking; for example, the authors contended that victims need to be aware that drink spiking is often perpetrated by acquaintances and friends, as opposed to unknown persons. It was also recommended that victims be encouraged to report suspected incidents of drink spiking, and that they are reassured that such reports will be taken seriously by authorities. Notably, Taylor et al. (2004) did not emphasise the need for potential victims to engage in protective behaviours in order to avoid victimisation. Similarly, Neame (2004) emphasised the need for drink spiking prevention programs to be focussed on perpetrators, rather than victims. Although specific programs are yet to be developed, Neame noted that potential perpetrators need to be made aware of issues of consent and how such issues are affected by alcohol consumption.

Recommendations for drink spiking prevention initiatives have also focussed on social and environmental factors, the tenets of which also remain applicable to sexual assault prevention programs. Foote et al. (2004) promoted the use of social institutions and the media to alter social values regarding drink spiking and sexual victimisation. They also encouraged the alteration of environments to decrease the opportunity for such victimisation to occur. The authors discussed the Safer Times ‘Round Albury-Wodonga project, in which licensed venues are nominated for awards on the basis of a safety audit of such environmental characteristics as lighting, parking, and security.

**Recommendations for Intervention After a Drink Spiking Incident**

A number of recommendations for appropriate management of drink spiking incidents, particularly those involving post-spiking sexual assault, have also been made. Researchers have emphasised the need for coordinated, uniform responses to all drink spiking incidents, regardless of the location of their occurrence (Clarke, 2004; Griffiths, 2001). Detailed recommendations regarding appropriate responses for
all services involved in the management of drink spiking incidents have been provided. It has been advised that all allegations of spiking should be taken seriously and investigated appropriately, with detailed recording by police (Taylor et al., 2004), achieved through standardised interviewing procedures (Foote et al., 2004). Several recommendations for procedures undertaken as part of toxicological assessment of samples have also been made. While Clarke (2004) advocated for the implementation of toxicology screening equipment in hospital emergency departments, Taylor et al. (2004) recommended that a central register be developed in all Australian States and Territories, thereby allowing detailed recording of all samples taken from alleged drink spiking incidents. Taylor and colleagues (2004) also proposed that all toxicological tests are accompanied by information regarding the victim’s voluntary consumption of alcohol or substances prior to the spiking, the estimated time of the spiking, and the nature of the symptoms experienced. Such information, when provided to parties who may be investigating the alleged incidents, such as police officers or venue management, may encourage the conceptualisation of the incident in a comprehensive manner, rather than focussing solely on toxicological evidence. As posited by Quigley (2004), primary emphasis needs to be placed on the information provided, and symptoms displayed, by victims. Finally, it has been recommended that any judicial processes related to drink spiking incidents are conducted in an integrated and consistent manner, with efforts made to ensure that victims are not adversely affected by the process, and receive appropriate levels of support throughout (Foote et al., 2004). Overall, it is believed that such coordinated responses to drink spiking allegations will lead to more successful prosecutions and consequent penalties for perpetrators, which in turn will lead to the deterrence of future perpetration (Sturman, 2000).
To date, there have not been any recommendations made regarding the implementation of effective interventions for victims of drink spiking. A number of therapies for drug-facilitated sexual assault were reviewed by Hensley (2002). Therapies focussing on anxiety management and cognitive restructuring were noted as being particularly effective in assisting victims in managing post-assault difficulties. Such therapies may also be beneficial in treating psychological issues experienced by drink spiking victims, regardless of the outcome of the spiking incident, but this clearly requires further investigation.

Summary

Regardless of the motivations of perpetrators of drink spiking, it is likely that spiking victims experience adverse physical symptoms or psychological sequelae, or both, after the event. In addition, victims who consider reporting their experience to authorities are also susceptible to a range of difficult circumstances, many of which contribute to a lack of successful prosecutions of perpetrators. Recent law reforms and prevention campaigns have attempted to rectify these difficulties; however, further advancements in these areas are required.

Part 4. Aims and Research Questions

To date, research investigating drink spiking in Australia has been limited to explorations of prevalence rates and characteristics associated with victimisation, such as gender, age, typical locations of incidents, and outcomes. Almost no research has as its primary aim the investigation of variables that may increase the likelihood of drink spiking perpetration and victimisation. The research reported in this thesis is designed to redress this omission. Given that sexual assault is a relatively frequent outcome of drink spiking, factors known to be associated with sexual assault perpetration and victimisation were selected for investigation. These variables include gender, age,
sexuality, alcohol expectancies, participation in risk-taking behaviours, and previous sexual assault victimisation. In addition, drink spiking victimisation has typically been associated with awareness of drink spiking and consequent engagement in such protective behaviours as supervising one’s drink; however, the relevance of such behaviours to both perpetration and victimisation is yet to be empirically explored.

In order to address the associations between each of these variables and drink spiking perpetration and victimisation, the following research questions, relating to perpetration and victimisation of drink spiking, were developed. It is important to note that directional hypotheses were not viewed as appropriate methods of investigating the predictors of both perpetration and victimisation of drink spiking; the lack of research examining these relationships determined that theory-driven hypotheses were not able to be formulated. For this reason, the current study was based on research questions allowing the exploration of these relationships.

**Perpetration of Drink Spiking**

1. What is the current prevalence of drink spiking perpetration in Australia?
2. Is there a relationship between gender, age, sexuality, and drink spiking perpetration?
3. How do alcohol expectancies relate to drink spiking perpetration?
4. How does participation in risk-taking behaviours relate to drink spiking perpetration?
5. How does previous sexual assault victimisation relate to drink spiking perpetration?
6. How does the use of protective behaviours relate to drink spiking perpetration?
7. What are the motivations held by drink spiking perpetrators?
Victimisation of Drink Spiking

1. What is the current prevalence of drink spiking victimisation in Australia?
2. Is there a relationship between gender, age, sexuality, and drink spiking victimisation?
3. What are the characteristics of drink spiking incidents?
4. How do alcohol expectancies relate to drink spiking victimisation?
5. How does participation in risk-taking behaviours relate to drink spiking victimisation?
6. How does previous sexual assault victimisation relate to drink spiking victimisation?
7. How does the use of protective behaviours relate to drink spiking victimisation?

It was anticipated that gaining clarity on these issues will inform the development of recommendations for prevention and intervention programs for victims of drink spiking.
CHAPTER 4
METHOD

Participants

Gender
The sample consisted of 805 participants; 235 men (30%), 557 women (69%) and three people (0.4%) who did not specify a gender.

Place of Residence
Participants reported residence in 370 different geographic areas in Australia – 478 participants (59%) resided in Victoria, 149 participants (19%) in New South Wales and Australian Capital Territory, 46 participants (6%) in South Australia, 33 participants (4%) in Queensland, 24 participants (3%) in Western Australia, and 15 participants (2%) in Tasmania. A proportion \( n = 60, 8\% \) refrained from providing a residential area.

Sexual Orientation
The vast majority of participants \( n = 684, 85\% \) reported a heterosexual orientation, while 6% \( n = 44 \) reported that they were gay or lesbian, and 7% \( n = 52 \) reported that they were bisexual. A relatively small number of participants \( n = 19, 2\% \) reported that they were unsure of their sexual orientation.

Age
The study requested that participants were aged between 18 and 35 years, inclusive, and any participants outside of this age were excluded from quantitative analysis. The specified age was determined as a result of previous research assessing the typical ages of victims of sexual assault and of drink spiking. For example, Rickert and Wiemann (1998) reported that adolescents (aged 16 to 19 years) and young adults (aged 20 to 24 years) are four times more likely to be a victim of sexual assault than women in all other age brackets. In the most recent assessment of drink spiking in Australia, Taylor, Prichard, and Charlton
(2004) established that between 41% and 51% of drink spiking victims were under the age of 25 years. They also analysed data provided by CASA, which showed that over 70% of all drink spiking victims were aged between 16 and 29 years, with the majority (59%) aged between 20 and 29 years. Overall, Taylor and colleagues (2004) concluded that almost all drink spiking victims were aged under 34 years.

While it is acknowledged that drink spiking occurs amongst people under the age of 18 years, the decision to exclude minors from the study was made in order to focus the study on the population cohort known to be at the highest risk. As noted above, the victim prevalence data indicates that the majority of drink spiking victims are over 18 years of age. Moreover, studies have indicated that between 54% and 87% of drink spiking incidents occur as a result of the adding of a substance to an alcoholic drink (Fyfe & Newell, 2002; Taylor et al., 2004), while between 66% and 75% of drink spiking incidents occur in licensed venues (Taylor et al., 2004). Thus, the current study focussed on participants that potentially attended venues where drink spiking may occur, as opposed to persons who were legally unable to attend such venues.

Despite the age inclusion for participation being established as between 18 and 35 years, the final sample was relatively young ($M = 23.7$ years, $SD = 4.68$ years), with a greater proportion of 18-23 year olds ($n = 443, 55\%$) than 24-29 year olds ($n = 240, 30\%$) or 30-35 year olds ($n = 119, 15\%$) participating. Figure 1 illustrates the distribution of ages across the sample.
Education and Occupation

In terms of education, just over half of the sample (n = 435, 54%) had attended a government-funded secondary school. Three hundred and fifty-two participants (44%) reported attendance at a private school – 35% (n = 285) attended a school with a religious affiliation, while the remainder (n = 67, 8%) attended a non-religious private school. Three hundred and twelve participants (39%) reported that they had completed secondary schooling without any additional training, while 392 participants (49%) indicated completion of a tertiary degree, certificate or diploma. Of these, 71% (n = 279) had completed an undergraduate or postgraduate university degree, 20% (n = 79) had completed a tertiary course at a Technical and Further Education (TAFE) institution, 5% (n = 19) had completed both a university and TAFE course, and 4% (n = 15) had undertaken an unspecified or incomplete degree.

Despite the relatively high presence of tertiary-educated participants in the sample, a proportion of the sample also identified themselves as current students (n = 364, 45%). A minority (n = 15, 2%)
indicated that they were currently completing secondary schooling, while just over half of the sample \( (n = 437, 54\%) \) reported that they were undertaking an undergraduate or postgraduate university degree. An additional 63 participants (8%) were completing a TAFE course, while 16 (2%) participants reported that they were undertaking an unspecified course or degree.

Figure 2 provides a depiction of the current and achieved levels of education reported by the sample.

![Figure 2](image-url)

**Figure 2.** Highest Level of Education Attained By Participants and Current Educational Institution Reported By Participants \( (N = 531-704) \).

A wide range of occupations were reported by those participants who were not studying at the time of participation. These occupations were categorised into occupational fields, and the prevalence of each field within the sample is illustrated in Figure 3, with occupational categories presented in order of prevalence. Thirty-nine participants did not report an occupational status.
Figure 3. Current Employment Reported by Participants, According to Occupational Category ($N = 402$).

Materials

In order to advertise the study to potential participants, a flyer (see Appendix A) and bookmarks (see Appendix B) developed by the researchers, and three Media Releases (see Appendix C), developed by the RMIT University Department of Media and Communications, were utilised. The Media Release prompted a number of radio, television, newspaper, and magazine items featuring details of the study and alerting media consumers to the need for participants. Appendix D provides a list of the media outlets that featured coverage of the study.

A self-report questionnaire pack was presented in two formats – hard copy or online. In addition to the questionnaire itself, the hard copy featured a plain language statement (PLS), details of the terms of consent implied by the participants’ completion of the questionnaire, contact details for relevant support services, and information and
websites relating to the issues covered in the questionnaire. Two separate Plain Language Statements were used – one for participants recruited via university lectures and tutorials, and one for participants recruited via community agencies. Each PLS is provided in Appendix E, while the questionnaire is provided in Appendix F. Participants completing a hard copy version of the questionnaire were also provided with a Reply Paid envelope in which to return the questionnaire to the researchers. The website, located at http://weblearn.rmit.edu.au/ses, featured similar inclusions. The homepage included a welcome statement and the PLS in both HTML and PDF formats. The latter included letterhead and the researchers’ signatures and was available for participants to download. The site also required participants to check tick boxes agreeing to each segment of the PLS prior to accessing the survey, including a tick box stating that the participant had read the PLS in full and provided informed consent to participate. Again, support services and relevant information were listed. Both the hard copy and online versions of the questionnaire provided avenues through which concerns or complaints could be addressed.

The questionnaire, entitled the Social Experiences Survey (SES; see Appendix F), was developed by the researchers as a result of the lack of previously established questionnaires that investigated the nature of drink spiking and its relationship to other experiences and characteristics. Although the study was designed with attention to developing a questionnaire that was written in a sensitive way, participants were asked to disclose information relating to their personal experience of sexual assault and incidents of drink spiking. As is discussed below, the sections of the SES that were potentially distressing for participants were based on established measures. These studies have not cited any incidents of significant emotional distress experienced by their participants.
The SES incorporated four sections. An introductory section examined demographic details. Section A assessed typical venues attended; alcohol expectancies; willingness to engage in various drink spiking behaviours; previous engagement in such behaviours, and the motivations held for this engagement; participation in risk-taking activities; and engagement in behaviours commonly believed to protect people from experiencing drink spiking. Section B examined previous experiences of non-consensual sexual activity. Section C investigated the nature of drink spiking incidents experienced by both the participant and people known to the participant.

**Demographic Questionnaire**

The Demographic Questionnaire was established by the researchers for the specific purposes of the current study. As such, it investigated gender, age, height, weight, occupation, level of education, occupation, sexuality, residential area, and amount of alcohol consumed prior to participation. This latter variable, in addition to height and weight, was included in order to determine the level of intoxication experienced by participants, thereby allowing an investigation of the influence of alcohol consumption on other aspects explored in the study (e.g., alcohol expectancies, willingness to perpetrate drink spiking).

**Venues Attended**

Participants were asked to report on the types of venues they generally attend on social occasions and to cite three specific venues that they attend most frequently. Participants were also requested to indicate the frequency of their attendance at heterosexual and homosexual venues, on an 11-point scale ranging from “Every day” to “Never”.

**Alcohol Expectancies**

The measurement of alcohol-related beliefs, attitudes, and behaviours has been plagued by inconsistencies in findings (Lee, 1998).
Given that such studies tend to rely on the use of retrospective self-report measures, these inconsistencies have raised questions about the efficacy of such measures. However, it has recently been contended that such error and variability is a result of poorly-constructed measures, rather than any flaws associated with retrospective or self-report measurement formats (Lee, 1998). According to Lee (1998), self-report measures of alcohol-related issues are now considered to be equal, if not superior, to other forms of measurement (i.e., direct observation or self-monitoring) particularly when instructions are clear and anonymity and confidentiality are ensured. The current researchers therefore believed that a self-report format was an appropriate method of investigating the alcohol expectancies held by participants.

The section of the SES relating to alcohol expectancies was based on two previously established, widely used measures – the Alcohol Expectancy Questionnaire (George et al., 1995) and the Drinking Expectancy Questionnaire (Lee, Oei, Greeley, & Baglioni, 2003; Young & Knight, 1989), both of which have been subject to a number of alterations in an attempt to improve their psychometric properties.

The Alcohol Expectancy Questionnaire (AEQ) was originally developed by Brown, Goldman, Inn, and Anderson (1980) and has since been extensively used to explore various aspects of problematic alcohol consumption and alcoholism, including treatment planning and relapse prevention (Young & Knight, 1989). However, the AEQ has been criticised for its focus on positive alcohol expectancies, or beliefs that alcohol consumption will result in some positive experience, and the absence of negative expectancies, or beliefs that alcohol consumption will result in negative experiences (Young & Knight, 1989). This criticism was addressed by Rohsenow (1983; cited in Young, 1989), who developed the AEQ-2, which included items relating to negative expectancies. Nonetheless, the AEQ-2 featured subscales that were developed on assumptions formed by the researcher, and were
therefore not empirically based, and also restricted responses to a true/false format.

In order to address these criticisms, Young and Knight (1989) developed the Drinking Expectancy Questionnaire (DEQ). Administering the questionnaire over three phases to students, alcohol dependents, and members of the community in New Zealand, then factor analysing their results, the researchers identified nine emerging categories of alcohol expectancies – assertiveness, affective change, sexual enhancement, social enhancement, relaxation, cognitive impairment, dependence, carelessness, and aggression. These factors accounted for between 41% and 45% of the variance, and coefficients of congruence ranged from .809 to .966, indicating that the identified factors remained similar throughout the different samples used. It was also determined that the DEQ measured trait-like, as opposed to state-like, alcohol expectancies (Lee, 1998), determining its appropriateness as a measure for use in situations that do not necessarily involve imminent alcohol consumption. Overall, it was concluded that the DEQ presented strong, reliable, and independent factors with strong construct validity (Young & Knight, 1989).

After the development of the DEQ, George and colleagues (1995) re-examined the strengths and criticisms of the AEQ and AEQ-2, and established the AEQ-3 by shortening the positive expectancy subscales included in the AEQ-2 and adding two negative expectancy subscales, and including a 6-point Likert scale (1 = “Agree Strongly”, 6 = “Disagree Strongly”) response format, rather than the aforementioned true/false format used in the AEQ-2. The measure was utilised with a sample of 1,260 people in the USA. The researchers concluded that the eight subscales displayed strong distributional properties and high reliabilities and that the AEQ-3 was a more psychometrically sound and generalisable measure than the AEQ-2, although concerns regarding its discriminant validity remained. The authors noted that the
distinctiveness between each subscale was modest, and therefore recommended that future investigators use an overall single score rather than individual subscale scores.

More recently, Lee et al. (2003) contended that despite advancements made by aforementioned authors, the field of alcohol expectancies remained subject to a lack of reliable and valid measures. Focussing on the DEQ, Lee et al. (2003) utilised the measure in a community sample of 679 participants in Australia, providing participants with 43 statements relating to positive and negative alcohol expectancies, with participants responding to each statement on a 5-point Likert scale (1 = “Strongly Disagree”, 5 = “Strongly Agree”). The researchers determined that a good fit was not produced by either a six-factor or a seven-factor analysis. They therefore formed a 37-item solution with five factors – negative consequences of drinking, increased confidence, increased sexual interest, cognitive enhancement and tension reduction. The authors concluded that the revised DEQ maintained robust psychometric properties that previous measures lacked.

The current study attempted to maintain the positive qualities of the DEQ and AEQ-3 while altering them in order to ensure that they were relevant to the study’s aims. Like the AEQ-3 and the DEQ, most items in the present study were phrased in the first person (e.g., “I’m better at attracting partners after a few drinks”), and efforts were made to include alcohol expectancies of both a positive (e.g., “Drinking makes me feel outgoing and friendly”) and negative (e.g., “Drinking increases my aggressiveness”) nature, not only because previous studies cited the limitations of focussing solely on positive expectancies (George et al., 1995; Lee et al., 2003; Young & Knight, 1989) but also because it was thought that some negative expectancies, such as those relating to increased aggressiveness, may be related to the perpetration or experience of drink spiking. Rather
than a true/false response format, a 6-point Likert scale (1 = “Strongly Disagree”, 6 = “Strongly Agree”) was used, as studies of the AEQ-3 and the DEQ indicated that this format was more representative of perceptions held by participants (George et al., 1995; Lee et al., 2003).

In the interests of brevity and relevance, a selection of items from the DEQ were utilised in the present study. As mentioned, the DEQ appeared to be the most psychometrically sound measure at the time of data collection, but it was believed that all items were not necessarily relevant to the issue of drink spiking. For this reason, 11 DEQ items (Lee et al., 2003) were used, and an additional 23 items were formulated by the researchers. These items (e.g., “It’s easy to keep an eye on your drink, no matter how drunk you are”, “Women who drink alcohol are more likely to want to have casual sex than women who do not drink alcohol”) were believed to have some relevance to the experience of drink spiking. In order to address concerns raised by Lee (1998), clear instructions were provided, and participants were repeatedly assured of their anonymity. Negatively-worded items (e.g., “I tend to avoid sex when drinking”) were reverse-scored.

**Willingness and Experience of Perpetration of Drink Spiking**

The lack of previous studies investigating drink spiking determined the need for the researchers to establish measures in order to address the aims of the current study. Participants were asked about a range of behaviours that involved adding substances to drinks without the consumer’s specific knowledge of the substance involved. Deliberate efforts were made to refrain from labelling such behaviours as ‘drink spiking’ and to include behaviours that are generally considered to be socially acceptable. It was assumed that such efforts would encourage participants to provide honest responses without fear of judgement.

Participants reported their willingness to partake in various behaviours by responding to such statements as “I would buy a cocktail for someone without telling them what is in it”, “I would add
alcoholic shots to an alcoholic drink (e.g., beer, wine, mixed drinks) belonging to someone else without the person knowing”, and “I would add a drug (e.g., GHB, Rohypnol, Ketamine, Ecstasy, Valium) to a non-alcoholic drink (e.g., soft drink, hot chocolate, tea, coffee) belonging to someone else without the person knowing”. Participants responded on a 6-point Likert scale, ranging from 1 = “Totally Untrue of Me” to 6 = “Totally True of Me”.

Participants then reported on previous experiences of engaging in these behaviours, responding to the same statements on a 7-point Likert scale, ranging from 1 = “Never” to 7 = “More than 20 times”. If participants reported that they had engaged in any of the specified behaviours, they were asked to provide details of their reasons for so doing. Tick boxes were provided, accompanying such statements as “Just for fun”, “To get someone drunk”, and “I thought it would give me a better chance of having sex”; participants were encouraged to tick as many boxes as were applicable.

Participants were then asked to rate the nature of their friendship with the person they provided the drink to, indicating the level of trust and knowledge held between the participant and the person receiving the drink, on a 6-point Likert scale, ranging from 1 = “Not at all” to 6 = “Totally”.

**Participation in Risk-Taking Activities**

Again, a thorough literature search failed to uncover an assessment of risk-taking that was brief enough to include in the SES but also examined a range of risk-taking behaviours. Researchers examined such risk-taking assessments as the Risk Activities by Perceived Risk Assessment (Abbott-Chapman & Denholm, 2001), which was developed recently for an Australian sample of young people, in order to establish a measure that was relevant to the current study and sample. Participants were asked to indicate their level of participation in a range of activities relating to alcohol and substance use, sexual
activity, gambling, and driving-related behaviours. Participants rated such activities as “I snort cocaine”, “I drink drive” and “I have sex with someone I don’t know very well”, on a 7-point Likert scale ranging from 1 = “Never” to 7 = “Daily”. Positive behaviours such as “I make sure I have a healthy diet” were reverse-scored.

**Engagement in Protective Behaviours**

Despite the emphasis on individual utilisation of protective behaviours with regard to drink spiking, no previous study has created a measure assessing the frequency with which such behaviours are undertaken, and the current study therefore again utilised a measure developed by the researchers. Various anti-spiking campaigns (e.g., the fact sheets provided at http://www.thesource.gov.au/drinkspiking and http://www.reachout.com.au) encourage young people to engage in certain behaviours that are believed to protect potential victims from experiencing drink spiking. Participants were therefore asked to report on their engagement in both protective and risk behaviours, responding to such statements as “I leave my drink unattended” and “I hold my drink at all times” on a 7-point Likert scale, ranging from 1 = “Never” to 7 = “Always”. Because varying degrees of strictness with relation to these behaviours are encouraged by different campaigns, items were reverse-scored according to different analyses. For example, in some analyses, leaving a drink with a trusted person was considered to be a protective behaviour, while in other analyses, it was considered to be a behaviour that placed a participant at risk of experiencing drink spiking.

**Sexual Experiences Survey**

Due to the sensitive nature of this section of the SES and consequent concerns regarding to potential to cause adverse emotional effects amongst participants, efforts were made to identify a previously established measure that would investigate participants’ experience of sexual assault in a manner that was detailed enough to
meet the aims of the present study. Consideration was given to the most optimal method of obtaining such information. Koss, Gidycz, and Wisniewski (1987) cited differing sexual assault prevalence rates according to sample and method of data collection. Concerns have also been raised about the potential for self-report formats to provide underestimated prevalence rates (Testa, VanZile-Tamsen, Livingston, & Koss, 2004). However, Testa and colleagues (2004) maintained that self-report measures are generally the most appropriate, if not the only, way of obtaining accurate information on such sensitive issues as sexual assault, as this format allows participants to report on potentially traumatic experiences without fear of stigma, judgement, or other concerns associated with discussing issues in an interview format.

Because the current study was focussed on exploring the relationship between drink spiking and sexual assault, rather than on providing prevalence rates, it was believed that a self-report format would be the most suitable and convenient method of data collection. After some consideration, the current researchers determined that the Sexual Experiences Survey (Koss et al., 1987; Koss & Oros, 1982) was the most effective measure for obtaining a relatively detailed account of participants’ experience of sexual assault.

The Sexual Experiences Survey (Koss & Oros, 1982) was initially developed as a means of assessing the experience of a range of sexual assault behaviours. According to the researchers, previous measures simply focused on rape, thereby failing to gain insight into other forms of sexual aggression. The authors therefore developed a 13-item measure that assessed male perpetration and female victimisation of non-consensual kissing, petting, oral sex, and attempted and completed vaginal and anal penetration. Items also investigated the circumstances surrounding the sexual assault, questioning participants about whether the situation involved threats to the relationship, pressuring the victim, the perpetrator reaching a point
of arousal that deemed him unstoppable, or the threat or use of physical force. The measure was utilised in a sample of 3,862 college students. The authors concluded that because all items were experienced by at least part of the sample, a dimensional view of sexual assault was preferable over one that considered rape only.

Although no further statistical analyses were conducted with the initial development of the Sexual Experiences Survey (Koss & Oros, 1982), the measure was further developed and subject to psychometric analyses over the following five years. It was first reduced to a 10-item measure (Koss & Gidycz, 1985), with some questions altered. The items asked participants to report on experience or perpetration of sex play (fondling, kissing, or petting), sex acts (anal or oral intercourse or penetration by objects other than the penis), and attempted or completed sexual intercourse. Again, circumstances surrounding the incidents involved verbal coercion, misuse of authority, the threat or use of physical force, or victim intoxication. Koss and Gidycz (1985) cited internal reliabilities of this new measure of .74 for women and .89 for men, and indicated a test-retest agreement rate of 93%. The authors also compared their participants’ responses on the measure to their responses during an interview conducted several months later; significant Pearson correlations of .73 for women and .61 for men were obtained.

Koss, Gidycz, and Wisniewski (1987) also utilised this revised version of the Sexual Experiences Survey in a sample of 6,159 college students. Because Koss and Oros (1982) had indicated that the measure was perhaps not as valid for males as it was for females, Koss et al. (1987) compared the responses of 15 males via self-report and interview formats, stating that 93% provided the same responses on both formats. They concluded that the measure was appropriate for use with male perpetrators of sexual assault.
Since Koss et al.’s (1987) refinement of the Sexual Experiences Survey, several studies have utilised the measure in both its full and revised forms, providing further recommendations for the most efficacious ways of using the tool (e.g., Testa & Livingston, 2000; Testa et al., 2004; Ullman et al., 1999). The measure has also been translated into German (Krahe et al., 2000) and altered for samples of heterosexual and homosexual men (Krahe et al., 2003). Such studies have reported good psychometric properties for their revised measures, indicating the capacity for the Sexual Experiences Survey to be altered while maintaining reliability and validity.

At the time of data collection, the Sexual Experiences Survey was available in both short form and long form versions (Koss, personal communication, 16th February 2005). The short form was selected for the current study, in order to meet the aims of the study while avoiding overwhelming participants with a lengthy questionnaire. Participants were asked to report on their experience of attempted and completed non-consensual oral sex, anal penetration, and, for female participants, vaginal penetration. The lack of consent was not articulated within the items; rather, various circumstances were provided, resulting in participants being unable to consent. Such circumstances included voluntary, coerced and non-consensual intoxication. Participants reported on their experience of each incident both in the previous 12 months and since the age of 14, and reported whether incidents had not occurred at all or had occurred once, twice, or three or more times during these time periods.

Unlike the Sexual Experiences Survey, which focuses on male perpetrators and female victims, the current study assessed victimisation of both male and female victims, and refrained from enquiring about participants’ perpetration. This was undertaken for a three reasons. First, the absence of questions relating to perpetration eliminated concerns raised by (Koss et al., 1987) with regard to the
measure’s tendency to underestimate the prevalence of perpetration. Second, the scope of the current study does not extend to an assessment of the relationships between perpetration of sexual assault and perpetration of drink spiking, as the study aimed to focus on a greater breadth of motivations for drink spiking, including, but not remaining limited to, the perpetration of sexual assault. Third, researchers prioritised the investigation of differences between heterosexual and homosexual sexual assault over issues of perpetration. For this reason, an additional question regarding the gender of the perpetrator was also included.

**Victimisation of Drink Spiking**

The final measure was again formulated by the researchers due to a lack of previously-established measures of drink spiking incidents that were detailed enough to meet the aims of the present study. Participants were asked to provide details of up to three occasions in which they experienced a drink spiking incident, one occasion in which a friend experienced drink spiking when the participant was present, and one occasion in which a friend experienced drink spiking when the participant was not present. For each occasion, participants were asked to specify the date of the occurrence, how they knew the victim had been spiked (e.g., “Presence of symptoms”), the type of venue in which the spiking occurred (e.g., “Friend’s house”, “Nightclub”), how the participant believed the spiking occurred (e.g., “Left drink unattended”), what occurred after the incident (e.g., “Left venue with friends”), whether the participant knew the perpetrator (e.g., “Yes – he/she was a friend”), the gender of the perpetrator, whether the participant perceived themselves or their friend as a victim of crime, and whether the victim reported the incident to any authority.

**Procedure**

The present study was approved by the RMIT Human Research Ethics Committee on 26th April 2005 (Project No. 1/05; see Appendix G).
Obtaining the Sample

Participants were sourced from a range of locations, including community agencies, hospitals, universities and TAFEs, and via a number of media programs, including newspaper and magazine articles, and radio and television programs.

Over a period of eight months, the study was advertised via three Media Releases (see Appendix C), which, as mentioned, resulted in media coverage detailing the aims of the current study and preliminary findings, and highlighting the need for participants. The researchers undertook radio interviews on such programs as “Hack” (Triple J), “The Late Date Show” (Fox FM) and “The Matt and Jo Show” (Fox FM), in addition to various current affairs programs (e.g., ABC Radio Tasmania, ABC Central Victoria, SYN FM). One television program, “Today Tonight”, featured a segment that included preliminary findings from the present study. Finally, a number of publications featured articles outlining the nature of the study (e.g., Hall, 2005), many of which encouraged readers to participate (e.g., Burstin, 2005).

A number of community agencies and hospitals across Australia were also contacted. Researchers requested that these agencies encouraged their consumers to participate in the study. Agencies were provided with information, copies of the flyer (see Appendix A) and bookmarks (see Appendix B) to assist in advertising the study within their organisations. A number of agencies were helpful in promoting the study, not only via the use of promotional materials, but also through articles and advertisements placed on websites (e.g., http://www.druginfo.adf.org.au/) and publications (e.g., Aware: Australian Centre for the Study of Sexual Assault newsletter no. 11) and emails to various networks (e.g., Drug and Alcohol Services South Australia). Appendix H provides a complete list of the organisations that provided assistance.
The researchers also attended university tutorials and lectures, or encouraged lecturers to discuss the study with their students, at RMIT University. The researchers advertised the study at the commencement of classes, provided details of the website, and left hard copies of the questionnaire for interested students to complete in their own time. One lecturer provided class time in which students could participate in the study. The researchers also placed flyers in all buildings at both the City and Bundoora campuses of RMIT University, and the Media Release was included on the RMIT University website homepage (http://www.rmit.edu.au). Researchers were also provided with a stall during the RMIT University Orientation Week, at which current students were advised of the study and encouraged to participate. Organisers of Orientation Week at the University of Sydney also promoted the present study to new students. Again, flyers and bookmarks were utilised to publicise the study on these occasions.

It was initially proposed that hard copies of the questionnaire would be placed within licensed venues in Melbourne, Victoria, in an attempt to encourage young people to participate while in their social environment. Thirty-five licensed venues were contacted, with a positive response received from just one organisation. The Eagle Bar (LaTrobe University, Victoria) allowed the researchers to advertise the study within the venue; bookmarks were therefore placed on every table in the venue immediately prior to the busy lunch period on the 17th March 2006. In addition, the Peer Education Officer at RaveSafe, a sector of Vivaids that promotes safe sexual practices and harm minimisation with regard to substance use, allowed the researchers to attend a number of organised events in order to advertise the study to potential participants. Permission was sought from venue authorities, and four events in Melbourne were attended – God’s Kitchen (Melbourne Park, 7th October 2005), High Fidelity (QBH, 15th October 2005), Decadence (Cage, 29th October 2005) and PHD (Inflation, 1st
November 2005). The researchers discussed the study with people using the RaveSafe services, and provided advertising materials as requested.

**Process of Participation**

Participants responding to flyers, bookmarks, or media coverage were encouraged to visit the website, which allowed participants to complete the questionnaire online, or to contact the researchers in order to obtain a hard copy version of the questionnaire.

Participants were encouraged to read the PLS, which detailed the nature and purpose of the study. Participants were advised of the inclusion of sensitive information at the outset, and were encouraged to take this into consideration prior to participating. Participants were also advised of their capacity to discontinue or withdraw their contribution at any point, should they commence participation but later find this to be too distressing. In addition, participants were clearly informed of their anonymity and of the confidentiality of their responses, and were advised that any questionnaires featuring identifying details would be destroyed and not included in analyses. This occurred not only in the PLS but also at the commencement of each section of the SES. In situations where participants chose to complete the survey in public, they were advised, via the PLS, to be aware of having their responses within view of others, and to take action if they believed that they were being observed by another person.

In accordance with the recommendations of Roberts and Indermaur (2003), a consent form was not used in the current study; rather, participants were advised that their return of the survey implied their provision of consent. This process meant that “…the potential for information obtained during the research process to be used against research participants in later legal proceedings is removed” (p. 24) and that “…the rights of participants are maintained and protected with
less liability, as the researchers remain unaware of the names of the respondents or any other identifying information…” (p. 25). Because of this assurance, “…research participants can be confident that the information they supply will not be used to incriminate them at a later date, (which) reduces the perceived need for self-protecting responses on sensitive topics…” (p. 24). Participants were also “…less likely to refuse to take part in the study, removing the threat to response rates and the representativeness of the sample…” (p. 24). For these reasons, the questionnaire was deliberately designed with complete anonymity and confidentiality at its foundation. Participants were advised of this via the PLS, thereby encouraging genuine responses and removing fear of judgement or incrimination on the part of participants.

However, despite the lack of consent form, participants completing a hard copy version of the SES were advised of the terms of consent, and participants completing an online version were required to check tick boxes before they were able to access the questionnaire, thereby consenting to each part of the PLS.

To avoid university students feeling coerced into participating, advertising of the study in lectures or tutorials involved a researcher providing a general outline of the study, followed by a statement of the website and, if permitted, the writing of the website on the whiteboard, allowing students to note the site if they desired, without having to verbally commit to participating. Where possible, hard copies of the SES were left in the classroom, for students to collect of their own volition, independent of the researcher and the lecturer/tutor. Students were advised both verbally and via the PLS that their participation would not result in any academic inducements or penalties.

**Process After Participation**

Participants completing the SES online were simply required to submit their completed questionnaire; their data was automatically downloaded into a spreadsheet that was only accessible by the
researchers and a staff member at RMIT University’s Information Technology Service. Participants completing a hard copy version of the SES were provided with an unmarked Reply Paid envelope with which to return the questionnaire to the researchers confidentially.

In circumstances were participants chose to complete the SES but later experienced distress or concern as a result of their participation, they were provided with a debriefing section (see Section D of Appendix F) which provided some information relating to each of the topics covered by the SES, and directed participants to websites for more detailed information. Participants experiencing distress were also encouraged to seek assistance, by contacting a professional who could provide assistance or referral. Contact details for a male Psychologist and female Probationary Psychologist were provided. A list of support services was also provided. These services were contactable via telephone or online, and many were available on a 24-hour basis. The services were selected on the basis of the questions posed in the SES, and therefore included services for both heterosexual and homosexual participants, and focussed on issues of sexual assault, drug and alcohol use, and reporting of crimes. General support services were also included, in addition to those offered by RMIT University.
CHAPTER 5
RESULTS

All analyses were conducted using the Statistical Package for the Social Sciences (SPSS) Version 14.0 for Windows.

Missing Value Analysis

Two methods were employed in order to avoid the adverse effects of missing data on analyses. A total of 122 people, of an overall sample of 927 participants, submitted a survey which did not include responses beyond demographic questions; these participants were deleted from any further analysis. Case deletion was also utilised for any participants who demonstrated item non-response for entire sections of the SES. Such participants’ responses were used in some analyses, but were excluded from analyses involving the variables to which they did not respond. This is reflected in the differing sample sizes evident in the following analyses.

Remaining missing values were assessed using Missing Values Analysis (MVA) in SPSS, a procedure which has been recommended for identifying both quantity and distribution of missing values (Tabachnick & Fidell, 2001). The number of missing values was relatively small and randomly distributed. However, it was determined that such methods as mean substitution would not be appropriate due to the common perception that these methods can affect various analyses in a problematic way (Garson, 2007), particularly factor analysis and regression (SPSS, 2007), which are to be a focus of the current study. The Expectation Maximisation (EM) method of replacing missing values was therefore utilised. This method utilises an algorithm that estimates missing values on the basis of responses provided to theoretically-related variables (Tabachnick & Fidell, 2001). Various studies have used data sets with deliberately removed data to compare a number of missing value analysis techniques (e.g., Musil, Warner, Payne, Yobas, &
Jones, 2002; Pastor, 2003). These studies consistently found that of all tested techniques, EM provided missing value estimates closest to the original values. The EM method of MVA was therefore used to attain estimated values for missing data for each section of the SES. Missing data were replaced with these estimated values prior to any analysis being conducted.

**Factor Analysis**

A number of sections of the SES were subjected to a principal components factor analysis, thereby reducing the individual items to a number of factors forming subsets of the overarching concept (Tabachnick & Fidell, 2001). In each case, several rotated solutions were examined and it was determined that rotation via varimax and Kaiser normalisation procedures were most theoretically viable. Factor selection was based on the Kaiser criterion, which states that all factors with Eigenvalues of less than 1 are excluded; thus, factors were only included if they had Eigenvalues that were greater than 1. Factor loadings of .40 or greater were accepted as significant for the purposes of factor interpretation. Extraction was based on communality values, which indicate the proportion of each variable’s variance that can be explained by the principal components (Tabachnick & Fidell, 2001). Communality values of .40 or greater were accepted as significant for extraction. Alternative solutions were rejected on the basis of extraction values and solution interpretability – variables with low extraction values and limited theoretical relevance to obtained factors were excluded from analysis.

The specific factor analysis procedure for each relevant section of the SES is detailed below.

**Alcohol Expectancies and Alcohol Beliefs**

After several attempts, four items were removed from the analysis, resulting in nine factors that accounted for 67% of the variance. Although removing an additional two items (“I tend to avoid
sex if I’ve been drinking” and “I feel that drinking hinders me in getting along with other people”) would have increased the explained variance to 70%, these items were thought to be theoretically appropriate to include in the factors on which they loaded, and therefore remained in the analysis.

As noted above, the final item set comprised 29 items that loaded onto nine factors. Appendix I lists the factor loadings for each item. It should be noted that the factor set included four factors that each contained two items and two factors that each contained three items. This was problematic, as it is generally accepted that factors require at least four items in order to be meaningful. However, in this case, it was determined that the inclusion of all nine factors was warranted. This decision was based on the finding that each of the two- and three-item factors accounted for a notable, albeit small, amount of the variance (ranging from 5% to 6%), thereby indicating that the overarching concept of alcohol expectancies encompasses a number of distinct constructs. Because the relationship between drink spiking and each of these constructs is yet to be investigated, it was believed that excluding these factors may result in the neglect of potential correlates. However, it should be noted that such relationships should be interpreted with some caution. This is discussed further in Chapter 6, Part 5.

Of the nine factors, five related to traditional alcohol expectancies (outlined in Chapter 2) and four reflected participants’ beliefs about behaviours related to alcohol consumption. For this reason, the factors were separated into alcohol expectancies and alcohol beliefs. These categories are utilised separately for the remainder of the current study.

The factors were labelled as follows: Alcohol Belief of Deliberate Intoxication of Others, Alcohol Belief of Responsibility to Self, Alcohol Belief of Responsibility to Others, Alcohol Belief of Allowing Friends to
Leave Venues, Alcohol Expectancy of Aggressive and Antisocial Tendencies, Alcohol Expectancy of Confidence and Sexuality, Alcohol Expectancy of Attractiveness, Alcohol Expectancy of Interest in Sexual Activity, and Alcohol Expectancy of Engaging in Casual Sexual Activity. Based on their responses to each item, a mean value for each factor was calculated for each participant.

**Participation in Risk-Taking Activities**

Of the 25 items that comprised the risk-taking section, five items were removed in the factor analysis, with the remainder loading onto six factors, accounting for 66% of the variance. Again, a mean score for each factor was calculated for each participant. The factor loadings for items within each of the six factors are presented in Appendix J. Again, this set incorporated factors that included less than four items; specifically, three factors contained only two items. However, as aforementioned, these factors were included since they accounted for a notable proportion of the variance (ranging from 5% to 6%) and to avoid overlooking their potential contribution to understanding the relationship between drink spiking and factors associated with sexual assault.

The six factors were labelled as follows: Engagement in Positive Behaviours, Engagement in Casual Sexual Activity, Driving Without a Licence, Use of Alcohol and Related Behaviours, Use of Stimulants and Hallucinogens, and Use of Narcotics and Sedatives.

**Engagement in Protective Behaviours**

Of the 12 items that explored participants’ use of behaviours that are generally thought to reduce one’s risk of experiencing drink spiking, two were removed. This resulted in three factors, which accounted for 67% of the variance. The factor loadings for items within each of the six factors are presented in Appendix K. As with the above analyses, this factor analysis obtained two three-item factors. Although this does not meet the aforementioned requirement that each factor include four
items, these factors accounted for 16.7% and 17.9% of the variance, and were therefore considered to be imperative for further investigation.

Factors pertained to participants’ degree of supervision of their own alcoholic beverages, and were thus labelled as follows: Low Supervision, Moderate Supervision, and High Supervision.

**Previous Perpetration of Drink Spiking**

The factor analysis conducted with the items relating to previous perpetration of drink spiking behaviours identified two factors, accounting for 67% of the variance. The first factor included behaviours relating to adding substances to both alcoholic and non-alcoholic beverages and adding alcoholic shots to non-alcoholic beverages. The second factor incorporated behaviours relating to mixing or purchasing cocktails, adding alcohol or substances to punch, and adding alcoholic shots to alcoholic beverages.

Given that the prevalence rates of activities loading on the second factor were generally higher than those loading on the first factor, factors were labelled accordingly. Factors were labelled Experience of Spiking Low Frequency and Experience of Spiking High Frequency. The factor loadings for items within each of the six factors are presented in Appendix L.

**Motivations for Perpetration of Drink Spiking**

The achievement of an acceptable variance level via factor analysis of perpetrators’ motivations for engaging in drink spiking behaviours required the deletion of several high-prevalence variables, and consequent, unacceptable, sacrifice of a notable portion of the sample. In addition, overarching concepts for each identified factor could not be established due to the theoretical variability of motivations loading on each factor. It was therefore decided that further analyses would focus on individual motivations in each of the three mentioned categories, rather than groups of motivations.
Willingness to Engage In Drink Spiking Behaviours

The eight items that investigated participants’ willingness to engage in drink spiking behaviours reduced to two factors, accounting for 70% of the variance.

The first factor was labelled Willingness to Spike Low Frequency while the second factor was labelled Willingness to Spike High Frequency. The factor loadings for items within each of the six factors are presented in Appendix M.

Reliability Analysis

The reliability of each subscale was determined using Cronbach’s alpha coefficients. Each coefficient provided a measure of internal consistency, or the degree to which each of the items within the factor is equivalent and measure the same underlying construct (Cohen & Swerdlik, 2005). A Cronbach’s alpha coefficient of greater than .70 is considered to be acceptable, while a coefficient that exceeds .80 is considered to be high (Aron, Aron, & Coups, 2006).

Table 9 presents the Cronbach’s alpha coefficients for each of the factors mentioned above.
Table 9
Cronbach’s Alpha Coefficient for all Factors

<table>
<thead>
<tr>
<th>Measure</th>
<th>Factor</th>
<th>Cronbach’s Alpha</th>
<th>N of Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol Expectancies and Beliefs</td>
<td>Allowing Friends to Leave Venues</td>
<td>.857</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Confidence and Sexuality</td>
<td>.835</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>Interest in Sexual Activity</td>
<td>.721</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Aggressive and Antisocial Tendencies</td>
<td>.753</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Attractiveness</td>
<td>.532</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Responsibility to Others</td>
<td>.719</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Responsibility to Self</td>
<td>.803</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Deliberate Intoxication of Others</td>
<td>.675</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Engaging in Casual Sexual Activity</td>
<td>.637</td>
<td>2</td>
</tr>
<tr>
<td>Participation in Risk-Taking Activities</td>
<td>Use of Stimulants and Hallucinogens</td>
<td>.832</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Use of Alcohol and Related Behaviours</td>
<td>.764</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Use of Narcotics and Sedatives</td>
<td>.743</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Engagement in Casual Sexual Activity</td>
<td>.866</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Driving Without a Licence</td>
<td>.604</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Engagement in Positive Behaviours</td>
<td>.293</td>
<td>2</td>
</tr>
<tr>
<td>Engagement in Protective Behaviours</td>
<td>Low Supervision</td>
<td>.779</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Moderate Supervision</td>
<td>.741</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>High Supervision</td>
<td>.725</td>
<td>3</td>
</tr>
<tr>
<td>Previous Perpetration of Drink Spiking</td>
<td>Low Frequency</td>
<td>.833</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>High Frequency</td>
<td>.743</td>
<td>4</td>
</tr>
<tr>
<td>Willingness to Engage in Drink Spiking Behaviours</td>
<td>Low Frequency</td>
<td>.828</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>High Frequency</td>
<td>.778</td>
<td>4</td>
</tr>
</tbody>
</table>
As illustrated, most factors demonstrated an acceptable, if not high, level of agreement in scores across the items within each factor. However, four factors (Alcohol Expectancy of Attractiveness, Alcohol Expectancy of Deliberate Intoxication of Others, Alcohol Expectancy of Engaging in Casual Sexual Activity, Driving Without a Licence) maintained only a modest level of equivalence (ranging from .53 to .68). It is possible that this resulted from the small number of items comprising each factor, which may be associated with the discrepancy in the consistency of responses amongst participants. It is also possible that although these factors measure similar domains, their inconsistency reflects actual attitudinal differences within the sample. For example, the factor measuring the Alcohol Expectancy of Attractiveness assesses participants’ beliefs regarding the level of attraction displayed by men and women accepting alcoholic drinks from the participant. It is possible that participants’ beliefs differ according to the gender of the person in question; thus, an item relating to a man accepting a drink may prompt a different response to an item relating to a woman accepting a drink, thus increasing the likelihood of inconsistency. Such possibilities are present for each of the factors demonstrating modest internal consistency.

Of some concern is the factor pertaining to Engagement in Positive Behaviours – the Cronbach’s alpha coefficient (.29) indicates that the two items comprising this factor do not maintain an acceptable level of equivalence and are not being responded to in a similar way. This factor consists of two items that were included in the measure as positive behaviours, in contrast to the remaining risk-taking activities measured by this section of the SES. However, the items pertain to maintaining a healthy diet and practicing safe sex – although they are common in their positive nature, they essentially remain highly unrelated activities and therefore are unlikely to generate consistent responses from participants. For this reason, the
internal consistency of this factor is not considered to be highly problematic. Nonetheless, caution is recommended in any circumstances where this factor maintains a correlational or predictive relationship with drink spiking within the remainder of the current study.

Validity Analyses

Face Validity

Items within each of the measures incorporated in the SES appear to measure their relevant concepts; for example, the section of the SES measuring participants’ engagement in risk-taking activities appears to measure the frequency with which participants undertake such behaviours. This substantiates the face validity of these measures.

Content Validity

As previously discussed, the measure utilised in the current study was established specifically for the purposes of this study, and was largely developed by the researchers due to the lack of relevant, previously-established measures. However, as outlined in Chapters 2 and 3, a significant literature review investigating all aspects of the current study was conducted. The SES was based on the contentions made within this literature, and as discussed in Chapter 4, sections of the SES were largely based on other well-established measures, thereby ensuring the inclusion of relevant content and sufficient coverage of such content. This substantiates the content validity of the SES.

Criterion-Related Validity

Because the SES is a new measure, it was not possible to correlate scores from the current study with similar measures. Correlating scores on the SES with measures used in future investigations of drink spiking will provide fruitful information in regards to the criterion validity of this measure.
Construct Validity

The factor analyses conducted provided evidence for the presence of construct validity. Clear associations between items within each factor were identified, indicating that these items measured analogous constructs. The identification of several factors across each domain (e.g., alcohol expectancies, participation in risk-taking activities) indicates that there are a range of independent factors within the measure. Nonetheless, intercorrelations suggest that these domains are clearly associated with each overall construct, providing further evidence for the construct validity of each segment of the SES.

Considerations of Prevalence

The current study originally aimed to obtain an indication of the prevalence of both perpetration and victimisation of drink spiking amongst 18-35 year old people in Australia. The study originally aimed to obtain a random, representative sample, thereby enabling the generalisation of findings to the wider community. However, this endeavour was altered via means of obtaining the sample – the advertisement of the study as one investigating drink spiking was likely to have attracted victims of spiking, and the use of universities for recruitment may have contributed to the over-representation of students within the sample. For these reasons, although the findings provide fruitful information regarding the nature of drink spiking, the findings cannot be generalised to the wider population of Australia.

In addition, the current study based its assessment of drink spiking victimisation on the reports of victims, and did not utilise secondary sources (e.g., police or toxicological reports) for verification of these accounts of victimisation. Thus, all reports of victimisation are actually reports of suspected victimisation, as it is not possible to determine with the utmost confidence that these instances were unquestionably experiences of spiking.
Nonetheless, it is important to note the degree to which the sample reported not only drink spiking perpetration and suspected victimisation, but also the various attitudes and behaviours that were assessed as potential predictors. It is only with this information that an informed opinion regarding the nature of drink spiking, and the relationships between predictors and spiking, can be made.

As a result of these issues, the current study presents information regarding the proportion of the sample that reported perpetration and suspected drink spiking victimisation. It is acknowledged that this information does not provide an indication of prevalence within the community. However, for succinctness and ease of interpretability, the study utilises the term “prevalence” to denote the proportion or percentage of the sample. Where drink spiking victimisation is discussed, “victimisation” refers to suspected victimisation incidents.

**Perpetration of Drink Spiking**

**Prevalence**

Figure 4 illustrates the prevalence of participants’ willingness to undertake each type of drink spiking activity. It is apparent that the majority of participants (70%-99%) indicated that the stated willingness to engage in each activity was “a little untrue”, “very untrue” or “totally untrue” of them. However, a small proportion of the sample reported a willingness to engage in drink spiking behaviours. For example, between 29% and 30% of participants reported their willingness to buy, or mix, cocktails for others without detailing the contents of the cocktail to the intended consumer and 19% of participants reported their willingness to add alcohol to punch. Seven percent and 3% of participants reported their willingness to add alcoholic shots to alcoholic and non-alcoholic beverages, respectively. One percent of participants reported their willingness to add a substance to any type of beverage.
Figure 4. Prevalence of Participants’ Willingness to Undertake Each Drink Spiking Activity (N = 797).

Figure 5 presents the prevalence of participants’ experience of engaging in each of the drink spiking activities. Evidently, a number of participants had engaged in each activity, with participants reporting a greater degree of perpetrating activities relating to cocktail (45%-49%) and punch consumption (26%). Between 6% and 16% of the sample reported at least one occurrence of adding alcoholic shots to another person’s drink without the receiver’s knowledge or consent, while 1% of participants had added a substance to a beverage under these circumstances.
The Relationship Between Gender and Previous Perpetration

An independent samples t-test identified gender differences on both perpetration factors. Men ($M = 2.03$, $SD = 1.18$) reported significantly greater frequency of purchasing or mixing cocktails for others, adding alcohol or substances to punch, or adding alcoholic shots to alcoholic beverages than women ($M = 1.65$, $SD = 0.80$), $t$ (353.27) $= 4.79$, $p < .001$, $d = 0.41$, 95% C.I. (0.25, 0.56). Men ($M = 1.12$, $SD = 0.61$) also reported more frequent engagement in adding alcohol to non-alcoholic beverages or adding substances to both alcoholic or non-alcoholic beverages than women ($M = 1.03$, $SD = 0.14$), $t$ (252.41) $= 2.23$, $p = .027$, $d = 0.25$, 95% C.I. (0.10, 0.41). Effect sizes were small to moderate.

The Relationship Between Age and Previous Perpetration

Bivariate correlations revealed that age was not correlated with either of the factors pertaining to experience of perpetrating drink spiking activities.

Figure 5. Prevalence of Participants Reporting at Least one Experience of Engaging in Each Drink Spiking Activity ($N = 798$).
The Relationship Between Sexual Orientation and Previous Perpetration

A one-way ANOVA determined that participants’ experience of engaging in drink spiking behaviours did not differ significantly according to participants’ sexual orientation.

Victimisation of Drink Spiking

Prevalence

Self-Report

A total of 207 participants reported that they had experienced what they believed to be an incident of drink spiking. Of these, 166 participants had experienced spiking on one occasion, six participants reported two incidents, two participants had experienced four instances of spiking, and two participants reported experiencing spiking on five separate occasions. Apart from one incident occurring in 1976, all incidents had occurred between 1990 and the time of data collection, with the majority occurring between 2000 and 2005.

Table 10 presents the prevalence of each characteristic of the most serious drink spiking incident reported by participants. It should be noted that participants were invited to select more than one option, where relevant, and percentages in each category therefore do not necessarily total to 100%.
### Table 10

*Characteristics of Most Serious Drink Spiking Incident Reported By Sample (N = 207)*

<table>
<thead>
<tr>
<th>Characteristic of Incident</th>
<th>Percentage of Victims who Reported Each Characteristic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basis of participants’ belief that spiking had occurred</td>
<td>Unexplained drunkenness 70%</td>
</tr>
<tr>
<td></td>
<td>Experience of physical symptoms 69%</td>
</tr>
<tr>
<td></td>
<td>Someone told me 13%</td>
</tr>
<tr>
<td>Location of spiking</td>
<td>Friend’s house with less than 10 people present 4%</td>
</tr>
<tr>
<td></td>
<td>House party with more than 10 people present 11%</td>
</tr>
<tr>
<td></td>
<td>Local hotel 8%</td>
</tr>
<tr>
<td></td>
<td>Bar 25%</td>
</tr>
<tr>
<td></td>
<td>Nightclub 46%</td>
</tr>
<tr>
<td>Behaviours contributing to spiking</td>
<td>Left drink unattended 23%</td>
</tr>
<tr>
<td></td>
<td>Accepted drink without watching it being prepared 37%</td>
</tr>
<tr>
<td></td>
<td>Didn’t supervise drink 25%</td>
</tr>
<tr>
<td></td>
<td>Bar staff 5%</td>
</tr>
<tr>
<td></td>
<td>Don’t know 27%</td>
</tr>
<tr>
<td>After events of spiking</td>
<td>Left venue alone 15%</td>
</tr>
<tr>
<td></td>
<td>Left venue with friend 61%</td>
</tr>
<tr>
<td></td>
<td>Left venue with stranger 12%</td>
</tr>
<tr>
<td></td>
<td>Attended hospital 4%</td>
</tr>
<tr>
<td>Victim’s relationship to the perpetrator</td>
<td>Friend 11%</td>
</tr>
<tr>
<td></td>
<td>Acquaintance 15%</td>
</tr>
<tr>
<td></td>
<td>Stranger 22%</td>
</tr>
<tr>
<td></td>
<td>Don’t know who perpetrated 52%</td>
</tr>
<tr>
<td>Gender of perpetrator</td>
<td>Male 49%</td>
</tr>
<tr>
<td></td>
<td>Female 5%</td>
</tr>
<tr>
<td></td>
<td>Don’t know 46%</td>
</tr>
<tr>
<td>Whether victim considers themselves a victim of crime</td>
<td>Yes 66%</td>
</tr>
<tr>
<td></td>
<td>No 33%</td>
</tr>
<tr>
<td>Whether victim reported incident to authorities</td>
<td>Yes 14%</td>
</tr>
<tr>
<td></td>
<td>No 85%</td>
</tr>
</tbody>
</table>
It is evident from inspection of Table 10 that the majority of participants believed they were spiked as a result of experiencing a degree of intoxication that was greater than what they would expect to experience on the basis of their alcohol consumption at the time of the spiking. Participants also experienced a number of physiological symptoms that contributed to their belief that they had experienced a drink spiking incident. Many participants provided qualitative data regarding these symptoms. Table 11 presents prevalence data for general symptoms experienced by participants on the most serious drink spiking incident. Difficulties with physical movement include such symptoms as loss of coordination, sensations of physical numbness, loss of control over bodily functions, and physical collapse. It should also be noted that participants often described their symptoms as “severe”. A number of participants also reported that their symptoms lasted beyond the day of the incident (6% of total victims).

Thus, Tables 10 and 11 indicate that most self-identified drink spiking victims established their victimisation on the basis on unexpected intoxication or a range of physical, psychological, and behavioural symptoms. The prevalence of symptoms experienced by spiking-related sexual assault victims were somewhat different to those experienced by spiking victims in general. Although reporting a similar frequency of unconsciousness (17% of sexual assault victims), sexual assault victims more frequently reported experiencing a lack of coordination (28%), dizziness (22%), and a loss of time (11%).
Table 11

*Prevalence of Symptoms Identified by Participants (N = 207)*

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Percentage of drink spiking victims</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loss of consciousness</td>
<td>22%</td>
</tr>
<tr>
<td>Vomiting</td>
<td>22%</td>
</tr>
<tr>
<td>Difficulties with physical movement</td>
<td>19%</td>
</tr>
<tr>
<td>Memory loss</td>
<td>12%</td>
</tr>
<tr>
<td>Dizziness</td>
<td>11%</td>
</tr>
<tr>
<td>Nausea</td>
<td>5%</td>
</tr>
<tr>
<td>Perspiration</td>
<td>5%</td>
</tr>
<tr>
<td>Disorientation</td>
<td>5%</td>
</tr>
<tr>
<td>Hallucinations</td>
<td>4%</td>
</tr>
<tr>
<td>Impaired vision</td>
<td>4%</td>
</tr>
<tr>
<td>Slurred speech</td>
<td>2%</td>
</tr>
<tr>
<td>Loss of inhibition</td>
<td>2%</td>
</tr>
<tr>
<td>Sleep difficulties</td>
<td>1%</td>
</tr>
<tr>
<td>Loss of time</td>
<td>1%</td>
</tr>
<tr>
<td>Increased aggressiveness</td>
<td>1%</td>
</tr>
<tr>
<td>Exhaustion</td>
<td>1%</td>
</tr>
</tbody>
</table>

Table 10 also indicates that although drink spiking appears to occur across a range of environments, almost half of all incidents occurred in a nightclub, with 79% occurring in a licensed venue. However, this proportion altered slightly when examining the data of sexual assault victims. Of all drink spiking victims, 9% reported that they experienced sexual assault victimisation as a result of the spiking. Of these, 50% were spiked in a licensed venue while 39% experienced spiking at a private party or function (the remainder did not specify a location). In the majority of cases (71%), those who were spiked at a
private function did not know most of the people attending the function.

Table 10 also indicates that most incidents of drink spiking victimisation occurred after participants engaged in behaviours that involved low levels of supervision of their drink, particularly accepting a beverage from another person. The prevalence of each supervisory activity altered somewhat amongst sexual assault victims: 20% reported that they left their drink unattended, 50% accepted a drink, 15% did not supervise their drink, 5% believed they were spiked by venue staff, and 10% were unaware of how their drink was spiked.

Although more than half of the participants did not know who perpetrated the spiking act, many indicated that the perpetrator was male. A minority also indicated that they believed that a member of venue staff had committed the act. This option was not provided in the survey, and required participants to provide a qualitative response to this effect; the above prevalence data may therefore be an underestimation of actual incidence of participants’ belief that staff had engaged in drink spiking. Of the sexual assault victims, 22% were unaware of the identity of their perpetrator, while 39% reported that the perpetrator was a stranger. Eleven percent and 17% reported that they were victimised by a friend and acquaintance, respectively. The majority of victims (78%) reported that the perpetrator was male, while 6% indicated that the perpetrator was female; 17% advised that they were unaware of the perpetrator’s gender. Of the 18 participants who reported being sexually assaulted as a result of drink spiking, one male participant reported a female-perpetrated sexual assault and one participant reported a male-perpetrated assault.

Most participants (61%) left the scene of the incident with friends, although some left with strangers or were transported to hospital for medical attention. Again, hospital attendance required participants to initiate a qualitative response, and it is therefore possible that a greater
number of drink spiking victims did indeed require medical assistance but did not note this in the SES. The prevalence of leaving the venue with a stranger increased notably amongst sexual assault victims, with 44% of such victims indicating that this was the case. A further 11% of sexual assault victims left the venue alone, while 22% left with friends.

Finally, although the majority of participants believed that they had been the victim of a crime, the vast majority did not report the incident to any authority.

Perceptions of crime and reporting trends were assessed in more detail with regard to participants’ most serious experience of drink spiking victimisation. Tables 12 and 13 illustrate the prevalence of participants’ descriptions of the crimes that they experienced as a result of the experience, and the authorities to whom the incident was reported. Several participants indicated that they did not report their experience because they were not sure of who they could contact, or whether they had definitely been spiked. Participants also reported that they did not report the act because they felt physically “ok” after the event, or they were “too scared”.
### Table 12

*Prevalence of Participants’ Perceptions of Their Victim of Crime Status*

<table>
<thead>
<tr>
<th>Description of crime</th>
<th>% of participants who reported that they were a victim of crime (N = 136)</th>
<th>% of all drink spiking victims (N = 207)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexual assault</td>
<td>13%</td>
<td>9%</td>
</tr>
<tr>
<td>Robbery</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Kidnapping</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Drink spiking</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Non-consensual substance use</td>
<td>8%</td>
<td>5%</td>
</tr>
<tr>
<td>Violation of rights</td>
<td>4%</td>
<td>2%</td>
</tr>
<tr>
<td>Could have been raped</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>Could have been killed</td>
<td>4%</td>
<td>2%</td>
</tr>
</tbody>
</table>

### Table 13

*Prevalence of Authorities to Which Participants Reported Their Most Serious Incident of Drink Spiking Victimisation*

<table>
<thead>
<tr>
<th>Authority</th>
<th>% of participants who reported that they reported the incident (N = 29)</th>
<th>% of all drink spiking victims (N = 207)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Police</td>
<td>55%</td>
<td>8%</td>
</tr>
<tr>
<td>Venue*</td>
<td>41%</td>
<td>6%</td>
</tr>
<tr>
<td>Hospital</td>
<td>21%</td>
<td>3%</td>
</tr>
<tr>
<td>Sexual health agency</td>
<td>7%</td>
<td>1%</td>
</tr>
<tr>
<td>GP</td>
<td>3%</td>
<td>0.5%</td>
</tr>
<tr>
<td>Telephone helpline</td>
<td>3%</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

*Note: “Venue” denotes the reporting of the incident to a staff member at the venue where the incident occurred.*
More than 10% of drink spiking victims reporting experiencing sexual assault, robbery, or kidnapping as a consequence of the spiking. A number of participants also felt that although they did not experience criminal victimisation, the act of spiking in itself warranted their status as a victim of crime, or that the spiking may have resulted in the commission of a more serious crime, had friends or environmental factors not intervened. Despite this, less than 10% reported the incident to the police. However, all sexual assault victims did report their experience to an authority. Of those who did report the incident to an authority (N = 29), four people stated that their reporting experience was negative, mostly as a result of not being believed.

In discussing their victim of crime status, many participants articulated emotional reactions. Terms used by participants to describe their feelings after the drink spiking incident included, “upset”, “scared”, “depressed”, “shaken”, “angry”, “afraid”, “vulnerable”, “stupid”, and “ashamed”. Many participants expressed relief that the incident had not resulted in more severe outcomes, but at no point did participants describe their experience in a positive manner.

Where participants had experienced more than one incident of drink spiking, they provided details on the characteristics of up to two additional incidents. While prevalence data for the most serious occasion are presented as percentages of all drink spiking victims (N = 207), such data for Occasions 2 and 3 were calculated as percentages of the number of people reporting each specific characteristic one each occasion. For example, participants were provided with three options to indicate the basis of their belief that they had been spiked. For Occasion 2 incidents, 53 participants reported experiencing at least one of these three options; the prevalence of each characteristic of Occasion 2 was therefore calculated as percentages of 53. Percentages are presented as proportions in Figures 6-13.
Figure 6. Basis of Participants’ Belief That Spiking had Occurred.

Figure 7. Location of Spiking.
Figure 8. Behaviours that Contributed to Spiking.

Figure 9. After Events of Spiking.
Figure 10. Victim’s Relationship With the Perpetrator.

Figure 11. Gender of Perpetrator.
Figure 12. Perception as Victim of Crime.

Figure 13. Reported Incident to Authorities.
Examination of these figures reveals similar trends across all three incidents, indicating that the above discussion about victimisation characteristics is also relevant to the experiences of participants who reported more than one victimisation. Nonetheless, some differences are evident. Participants reported greater experience of unexplained intoxication, as opposed to physical symptoms, during Occasion 3 compared with previous occasions. Participants also reported a greater prevalence of bars and local hotels as locations during Occasions 2 and 3, and greater presence of not supervising one’s drinks, rather than accepting drinks from others or leaving drinks unattended. Occasion 3 also featured a lower rate of victims leaving venues with friends, and greater prevalence of victims experiencing more potentially risky after events. Victims’ relationship to the perpetrator and gender of the perpetrator remained relatively similar across occasions, although an increase in incidents perpetrated by strangers is evident in Occasion 3. Despite victims perceiving themselves as victims of crime, reporting rates remain consistently low across occasions.

**Reports of the Experiences of Others**

Participants reported that a total of 96 men and 431 women they knew had experienced a drink spiking incident. Participants indicated that these incidents had occurred between 1990 and the present time, with most occurring between 2000 and 2005.

Of those who reported characteristics of incidents at which they were either present or not present, the prevalence of these characteristics were calculated; these are illustrated in Figures 14-21. Again, prevalence data was calculated as percentages of the number of people reporting each specific characteristic on each occasion. Prevalence trends remain similar to those reported by victims themselves. Most victims experienced spiking in a nightclub, after engaging in a low supervisory behaviour, and most became aware of
the spiking after experiencing unexplained intoxication. The majority of
victims did not know who perpetrated the incident, but many believed
the perpetrator was male. Most victims left the scene of the spiking with
friends. As with self-report incidents, the vast majority of participants
believed that they were a victim of crime, but did not report the
incident to any authority.

Incidents occurring when the reporting participant was both
present and not present were also compared, as depicted in Figures
22-29, thereby providing an indication of whether reported proportions
of each characteristic were comparable depending on whether the
participant witnessed the incident or not. Prevalence rates of each
characteristic were again similar across both types of spiking (present
and not present).
Figure 14. Prevalence of Indicators That Drink Spiking had Occurred, Both When Participant was Present and not Present.

Figure 15. Prevalence of Location of Drink Spiking Incident, Both When Participant was Present and not Present.
Figure 16. Prevalence of Behaviours Contributing to Drink Spiking, Both When Participant was Present and not Present.

Figure 17. Prevalence of After Events of Drink Spiking Incident, Both When Participant was Present and not Present.
Figure 18. Prevalence of Victim’s Relationship With the Perpetrator, Both When Participant was Present and not Present.

Figure 19. Prevalence of Gender of the Perpetrator, Both When Participant was Present and not Present.
Figure 20. Prevalence of Participants’ Perception of the Victim as a Victim of Crime, Both When Participant was Present and not Present.

Figure 21. Prevalence of Victims’ Reporting of the Drink Spiking Incident, Both When Participant was Present and not Present.
Figure 22. Basis of Victims’ Determination That Drink Spiking had Occurred.

Figure 23. Location of Spiking.

Figure 24. Behaviours that Contributed to Spiking.
Figure 25. After Events of Spiking.

Figure 26. Victim’s Relationship With the Perpetrator.

Figure 27. Gender of Perpetrator.
The Relationship Between Gender and Victimisation

Of the participants who reported that they had experienced drink spiking victimisation at least once, 72% were women. An independent samples t-test determined that women ($M = .37, SD = .68$) reported significantly greater experience of drink spiking victimisation than men ($M = .24, SD = .58$), $t(545.37) = -2.69$, $p = .007$, $d = .21$, 95% C.I. (.06, .36). However, the analysis revealed a small effect size, indicating that gender accounted for a small amount of the variance in drink spiking victimisation. Of the drink spiking victims who experienced sexual assault as a result of the spiking, 83% were women.
The Relationship Between Age and Victimisation

Bivariate correlations indicated that age was significantly correlated with participants’ experience of drink spiking victimisation, \( r (800) = .07, p = .048, r^2 = .01, 95\% \text{ C.I. (.00, .06)} \). Although the effect size was small, it is apparent that older participants reported more experience of drink spiking victimisation than younger participants.

The Relationship Between Sexual Orientation and Victimisation

A one-way ANOVA determined that there was not a significant difference in victimisation prevalence according to participants’ sexual orientation.

Factors Associated With Sexual Assault

Alcohol Expectancies and Alcohol Beliefs

Prevalence

Prevalence was based on the range of responses given by participants. Participants who responded “Strongly Disagree”, “Moderately Disagree”, or “Slightly Disagree” to a particular item were classified as disagreeing with the item, while participants who responded “Strongly Agree”, “Moderately Agree”, or “Slightly Agree” were classified as agreeing with the item.

Alcohol expectancies. The prevalence of the variables that loaded on the Alcohol Expectancy of Aggressive and Antisocial Tendencies factor is presented in Figure 30. It is evident that most participants (72%-84%) did not believe that alcohol consumption resulted in their engagement in increased aggressive or violent behaviours; the majority (82%) were also of the belief that alcohol did not adversely affect their capacity to interact in a positive manner with others.
The prevalence of each item on the Alcohol Expectancy Confidence and Sexuality factor is presented in Figure 31. As inspection of Figure 31 shows, participants responded to items related to both confidence and interest in sexual activity in a similar manner, indicating a possible association between the two. Thus, most participants (76%-85%) believed that alcohol consumption increased confidence and extraversion and decreased shyness (83%). Somewhat lower proportions (49%-54%) of the sample believed that alcohol intake increased variables that reflect their capacity to initiate and respond to potentially sexual social interactions.
Increased self-confidence
Decreased shyness
Increased extraversion and friendliness
Improved ability to attract partners
Increased sexual responsiveness

Figure 31. Prevalence of Variables Reflecting the Alcohol Expectancy of Confidence and Sexuality ($N = 805$).

Figure 32 depicts participants’ responses to items relating to the perceived attractiveness of people consuming alcohol and accepting alcoholic beverages from others, each of which loaded on the Alcohol Expectancy of Attractiveness factor. It should be noted that although an item pertaining to attractiveness ratings of alcohol-affected women was included in the SES, it was deleted in the factor analysis due to its relatively low extraction value. It is clear that the majority (62%) of participants did not believe that men’s consumption of alcohol indicated that they were attracted to participants. Most (73%-82%) were also of the belief that other people accepting alcohol from participants indicated that they were attracted to them.
Participants’ beliefs regarding the effects of alcohol consumption on sexual activity were also explored via four variables that loaded on the Alcohol Expectancy of Interest in Sexual Activity factor. The prevalence of these variables is illustrated in Figure 33. It is apparent that most participants (64%-90%) did not believe that alcohol intake decreased their interest in engaging in sexual activity. In fact, 70% of participants believed that alcohol consumption increased their interest in sexual activity.
Participants also reported on their perceptions of other people’s interest in engaging in casual sexual activity after drinking alcohol. The prevalence of participants’ perceptions of alcohol-affected men and women is presented in Figure 34. These rates indicate that most participants (65%-67%) believed that alcohol-affected men and women are more interested in engaging in casual sexual activity than men and women who have not consumed alcohol.
Figure 34. Prevalence of Variables Reflecting the Alcohol Expectancy of Engaging in Casual Sex Activity (N = 805).

Overall, participants subscribed to beliefs that increased the safety of themselves and others during occasions involving alcohol consumption. Most participants perceived it to be unacceptable to deliberately cause intoxication in other people, and most maintained personal responsibility in ensuring the safety of others. Participants were also of the belief that allowing intoxicated friends to leave venues alone was unacceptable. However, they were less adamant when intoxication was not involved; in these cases, participants believed it was acceptable for men to leave with unfamiliar persons, and for women to leave with unfamiliar women.

Participants’ expectancies after alcohol consumption indicated a general belief that alcohol did not increase aggressive or antisocial behaviour, nor did alcohol consumption reflect other people’s attraction towards participants. In contrast, participants did believe that alcohol intake increased their own confidence and interest in
sexual activity, and that consumption by others increased their interest in casual sexual activity.

**Alcohol beliefs.** Participants reported on two variables that loaded onto the Alcohol Belief of Deliberate Intoxication of Others factor, and the prevalence of these variables is illustrated in Figure 35. It can be seen that although a proportion of participants (10%-33%) perceived humorous and acceptable aspects to deliberately causing another person to become intoxicated, the majority of participants did not (67%-90%).

![Figure 35. Prevalence of Variables Reflecting the Alcohol Belief of Deliberate Intoxication of Others (N = 805).](image)

Although items relating to responsibility during occasions in which alcohol is consumed loaded onto two separate factors (Alcohol Belief of Responsibility to Self and Alcohol Belief of Responsibility to Others), the prevalence of each was considered together in order to obtain an indication of their potential relationship to each other. Figure 36 depicts
the prevalence of each individual variable. It is evident from inspection of this figure that most participants (70%-92%) believed that they held responsibility in ensuring the safety of both male and female friends when alcohol has been consumed.

![Graph showing alcohol belief and responsibility](image)

**Figure 36.** Prevalence of Variables Reflecting the Alcohol Belief of Responsibility to Self and the Alcohol Belief of Responsibility to Others (N = 805).

The prevalence of variables loading on the Alcohol Belief of Allowing Friends to Leave Venues factor was also obtained, and is illustrated in Figure 37. With regard to allowing alcohol-affected female friends to leave venues, the majority of participants (71%) believed that this was acceptable if the woman was leaving with another woman, despite her having just met the woman, but most (54%) believed that this was not acceptable if the woman was leaving with a man, or if the woman was intoxicated (73%). Contrastingly, most participants (61%-76%) believed it was acceptable for a male friend to leave a venue.
with either a man or a woman, unless the man was intoxicated, in which case a slightly greater number of participants (56%) did not believe it acceptable to allow the male friend to leave.

![Bar chart showing prevalence of variables reflecting alcohol beliefs](chart)

**Figure 37.** Prevalence of Variables Reflecting the Alcohol Belief of Allowing Friends to Leave Venues (N = 805).

**The Relationship Between Gender and Alcohol Expectancies and Alcohol Beliefs**

An independent samples t-test was conducted to determine the presence of a relationship between participants' gender and their responses on each of the above factors. It was determined that women ($M = 3.65$, $SD = 1.06$) reported significantly higher scores on the Alcohol Belief of Allowing Friends to Leave Venues factor than men ($M = 2.97$, $SD = 1.03$), $t(800) = -8.41$, $p < .001$, $d = -.65$, 95% C.I. (-.80, -.49), indicating that women agreed more strongly with the acceptability of allowing friends to leave venues alone or when intoxicated. Men ($M = 2.69$, $SD = 1.23$) reported significantly higher scores on the Alcohol Belief.
of Deliberate Intoxication of Others than women ($M = 2.10$, $SD = 1.05$), $t(406.36) = 6.52$, $p < .001$, $d = .50$, 95% C.I. (.38, .68); men were more likely than women to agree with the acceptability of causing intoxication in others, although participant means indicated that most either slightly or moderately disagreed with such behaviours. With regard to the Alcohol Belief of Responsibility to Self factor, women ($M = 3.36$, $SD = 0.52$) scored significantly higher than men ($M = 3.19$, $SD = 0.59$), $t(422.60) = -3.77$, $p < .001$, $d = .30$, 95% C.I. (.15, .45), demonstrating that women more strongly agreed with the belief that others are entirely responsible for their own safety. Finally, women ($M = 2.68$, $SD = 0.99$) reported significantly higher scores than men ($M = 2.30$, $SD = 0.94$) on the Alcohol Expectancy of Attractiveness factor, $t(492.38) = -5.26$, $p < .001$, $d = -0.39$, 95% C.I. (-.54, -.24). Women were more likely to believe that others were more attracted to them after they had consumed or accepted alcohol. As indicated by effect sizes and confidence intervals, the relationships between gender and the Alcohol Belief of Allowing Friends to Leave Venues factor, and between gender and the Alcohol Belief of Deliberate Intoxication of Others, were moderate in strength. Gender accounted for a small to medium amount of the variance in the Alcohol Belief of Responsibility to Self factor and the Alcohol Expectancy of Attractiveness factor.

**The Relationship Between Age and Alcohol Expectancies and Alcohol Beliefs**

Bivariate correlations were utilised to assess the relationship between participants’ age and alcohol beliefs and expectancies. It was determined that age was significantly correlated with the Alcohol Belief of Allowing Friends to Leave Venues, $r(803) = -.20$, $p < .001$, $r^2 = .04$, 95% C.I. (.02, .07), the Alcohol Belief of Responsibility to Self, $r(803) = .08$, $p = .021$, $r^2 = .01$, 95% C.I. (.00, .02), and the Alcohol Belief of Deliberate Intoxication of Others, $r(803) = -.19$, $p < .001$, $r^2 = .04$, 95% C.I. (.01, .07). Effects sizes and confidence intervals were each in the small
to moderate range. Thus, although a small amount of the variance was explained by age, it is evident that older participants reported a lower level of agreeability with allowing friends to leave venues alone and deliberately causing intoxication in others than younger participants. However, older participants also displayed a higher level of belief that others were responsible for their own safety.

The Relationship Between Sexual Orientation and Alcohol Expectancies and Alcohol Beliefs

Participants reported their sexual orientation as one of four possible categories: heterosexual, gay/lesbian, bisexual, and unsure.

A one-way Analysis of Variance (ANOVA) was conducted to explore the possible effect of participants’ sexual orientation on their beliefs and expectancies surrounding alcohol consumption. It was determined that a significant difference between groups occurred on the Alcohol Belief of Allowing Friends to Leave Venues, $F(4, 800) = 3.29, p = .011, \eta^2 = .02, 95\% \text{ C.I. (.00, .03)}$, the Alcohol Expectancy of Attractiveness, $F(4, 800) = 3.85, p = .004, \eta^2 = .02, 95\% \text{ C.I. (.00, .04)}$, and the Alcohol Expectancy of Interest in Casual Sexual Activity $F(4, 800) = 2.84, p = .023, \eta^2 = .01, 95\% \text{ C.I. (.00, .03)}$. Effect sizes and confidence intervals indicate that these effects were small, accounting for minimal amounts of variance.

Post hoc Bonferroni analyses determined the nature of specific differences amongst the sexual orientation groups with regard to each of the significant factors. Heterosexual participants ($n = 684, M = 3.49, SD = 1.08$) reported significantly higher agreement with the acceptability of allowing friends to leave venues alone or when intoxicated than gay and lesbian participants ($n = 44, M = 2.97, SD = 1.07), $p = .022$. Participants who were bisexual ($n = 52, M = 3.49, SD = 1.10$) or unsure of their sexual orientation ($n = 19, M = 3.04, SD = 1.14$) reported higher scores than gay and lesbian participants and lower
scores than heterosexual participants, but these differences were not significant.

Participants who were unsure of their sexual orientation (n = 19, M = 3.21, SD = 1.26) reported significantly higher agreement with the expectancy that others become more attracted after accepting or consuming alcohol than heterosexual participants (n = 684, M = 2.52, SD = 0.97), p = .023. Gay and lesbian (n = 44, M = 2.86, SD = 1.01) and bisexual (n = 52, M = 2.69, SD = 1.00) participants reported mean scores that were between those reported by heterosexual and unsure participants, but such scores were not significantly different from all other groups.

Expectancies regarding others’ interest in casual sexual activity when consuming alcohol were endorsed to a significantly stronger degree by heterosexual participants (n = 684, M = 3.86, SD = 1.25) than by bisexual participants (n = 52, M = 3.31, SD = 1.23), p = .021. Gay and lesbian (n = 44, M = 3.76, SD = 1.27) and unsure (n = 19, M = 3.79, SD = 1.29) participants reported average scores that were between those provided by heterosexual and bisexual participants, but there were not significantly different to all other groups.

**Participation in Risk-Taking Activities**

**Prevalence**

Figure 38 illustrates the prevalence of participation in each risk-taking activity. Two behaviours that are not considered to be of a high-risk nature (“I practise safe sex” and “I make sure I have a healthy diet”) were included in this section of the SES to monitor possible response bias. The prevalence of each positive behaviour is presented in Figure 38 first, followed by all other activities, in order of prevalence. Figure 39 presents the same data, but with activities ordered according to the factors on which they load. It is evident that participants frequently engage in positive behaviours, including maintaining a healthy diet and practising safe sex – at least rare engagement in
these behaviours was reported by 97% and 92% of participants, respectively. However, participants also reported high rates of potentially high-risk activities, including high levels of alcohol consumption (98% of sample) and associated behaviours, such as travelling in a motor vehicle with an alcohol-affected driver (50%). Over half of the sample reported engaging in casual sexual activity (58%). Use of stimulants and hallucinogens was also relatively common, while use of narcotics and sedatives was infrequent. Perhaps of particular note are the notably high frequencies of ecstasy and amphetamine use amongst the sample, with 13% and 10% reporting daily use, respectively.
Figure 38: Prevalence of Participation in Each Risk-Taking Activity Reported by Sample (N = 790-794).
<table>
<thead>
<tr>
<th>Activity</th>
<th>Percentage of participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get drunk</td>
<td>40%</td>
</tr>
<tr>
<td>Drink alcohol</td>
<td>80%</td>
</tr>
<tr>
<td>Share drink bottles</td>
<td>60%</td>
</tr>
<tr>
<td>Accept lifts from people don't know</td>
<td>40%</td>
</tr>
<tr>
<td>Accept lifts with driver above .05</td>
<td>60%</td>
</tr>
<tr>
<td>Take ecstasy</td>
<td>20%</td>
</tr>
<tr>
<td>Take speed</td>
<td>40%</td>
</tr>
<tr>
<td>Snort cocaine</td>
<td>20%</td>
</tr>
<tr>
<td>Smoke marijuana/hash</td>
<td>40%</td>
</tr>
<tr>
<td>Smoke cigarettes</td>
<td>60%</td>
</tr>
<tr>
<td>Sniff glue/solvents</td>
<td>20%</td>
</tr>
<tr>
<td>Take Rohypnol</td>
<td>40%</td>
</tr>
<tr>
<td>Inject heroin</td>
<td>20%</td>
</tr>
<tr>
<td>Take GHB</td>
<td>40%</td>
</tr>
<tr>
<td>Have sex with someone don't know</td>
<td>60%</td>
</tr>
<tr>
<td>Have sex with lot of different partners</td>
<td>40%</td>
</tr>
<tr>
<td>Travel with unlicenced driver</td>
<td>20%</td>
</tr>
<tr>
<td>Drive without licence</td>
<td>40%</td>
</tr>
<tr>
<td>Maintain healthy diet</td>
<td>60%</td>
</tr>
<tr>
<td>Practise safe sex</td>
<td>80%</td>
</tr>
</tbody>
</table>

Figure 39. Prevalence of Participation in Each Risk-Taking Activity Reported by Sample, According to Factors (N = 790-794).
For the purposes of further analyses, the positive behaviours on the risk-taking section of the SES (“I make sure I have a healthy diet” and “I practise safe sex”) were reverse-scored. Because items were scored on a 7-point Likert scale, participants who provided a response of 1 (“Never”) were recoded to a response of 7 (“Daily”), while participants who provided a response of 2 (“Rarely”) were recoded to a response of 6 (“More than weekly”), and so on. As a consequence, higher scores across each of the factors indicated lower adherence to positive behaviours, and thus greater risk-taking tendencies.

The Relationship Between Gender and Participation in Risk-Taking Activities

An independent samples t-test indicated that there were significant gender differences in levels of participation on all risk-taking factors. Results of the analysis are presented in Table 14. On all factors, men reported significantly higher rates of risk-taking than women, including the Engagement in Positive Behaviours factor, on which men reported significantly lower rates of maintaining a healthy diet and practising safe sex.
<table>
<thead>
<tr>
<th>Factor</th>
<th>Men M</th>
<th>SD</th>
<th>Women M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
<th>d</th>
<th>95% C.I. lower</th>
<th>95% C.I. upper</th>
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</thead>
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<tr>
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<td>2.31</td>
<td>1.36</td>
<td>3.48</td>
<td>409.81</td>
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<td>.44</td>
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<td>1.48</td>
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<td>.24</td>
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<td>Engagement in Casual Sexual Activity</td>
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<td>1.78</td>
<td>2.19</td>
<td>1.58</td>
<td>3.63</td>
<td>413.44</td>
<td>.000</td>
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<td>.44</td>
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<td>4.29</td>
<td>1.37</td>
<td>3.94</td>
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<td>3.44</td>
<td>786</td>
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<td>.27</td>
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<td>Use of Stimulants and Hallucinogens</td>
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<td>1.86</td>
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<td>1.53</td>
<td>4.68</td>
<td>389.08</td>
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<td>.54</td>
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<tr>
<td>Use of Narcotics and Sedatives</td>
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<td>0.82</td>
<td>1.08</td>
<td>0.34</td>
<td>2.63</td>
<td>277.12</td>
<td>.009</td>
<td>.26</td>
<td>.11</td>
<td>.41</td>
</tr>
</tbody>
</table>
The Relationship Between Age and Participation in Risk-Taking Activities

Bivariate correlations determined that of the risk-taking factors, age was significantly correlated with Engagement in Positive Behaviours, $r(788) = -.13, p < .001, r^2 = .02, 95\% \text{C.I.} (.00, .04)$, Engagement in Casual Sexual Activity, $r(788) = .22, p < .001, r^2 = .05, 95\% \text{C.I.} (.02, .08)$, and Use of Stimulants and Hallucinogens, $r(788) = .18, p < .001, r^2 = .03, 95\% \text{C.I.} (.01, .06)$. Effect sizes and confidence intervals indicated that a small to moderate amount of the variance was accounted for by each factor. Overall, the findings indicate that older participants reported greater engagement in both casual sexual activity and use of stimulant and hallucinogenic substances. Since the items comprising the Engagement in Positive Behaviours factor were reverse-scored, with higher scores demonstrating less engagement in positive behaviours, the negative correlation indicates that older participants reported greater engagement in safe sexual activity and maintenance of a healthy diet than younger participants.

The Relationship Between Sexual Orientation and Participation in Risk-Taking Activities

A one-way ANOVA was used to explore differences between participants’ risk-taking on the basis of their sexual orientation. Overall differences were obtained on participants’ reports of Engagement in Casual Sexual Activity, $F(4, 785) = 10.21, p < .001, \eta^2 = .05, 95\% \text{C.I.} (.02, .08)$, Use of Stimulants and Hallucinogens, $F(4, 785) = 4.79, p = .001, \eta^2 = .02, 95\% \text{C.I.} (.00, .04)$, and Use of Narcotics and Sedatives, $F(4, 785) = 4.21, p = .002, \eta^2 = .02, 95\% \text{C.I.} (.00, .04)$. Small to medium effects were obtained in the first factor, with small effects noted on the latter two.

Post hoc Bonferroni analyses illustrated the specific nature of these differences. Participation in casual sexual activity was reported to a significantly higher degree by both gay and lesbian participants ($n = 43, M = 3.52, SD = 2.06$) and bisexual participants ($n = 51, M = 3.01, SD = 1.82$), $p < .001$, than by heterosexual participants ($n = 672, M = 2.20, SD$...
Gay and lesbian participants also reported significantly greater engagement in casual sexual activity than participants who were unsure of their sexual orientation (n = 19, M = 2.24, SD = 1.29), p = .040.

With regard to substance use, heterosexual participants (n = 672, M = 2.52, SD = 1.63) reported significantly less frequent use of stimulants and hallucinogens than both gay and lesbian participants (n = 43, M = 3.31, SD = 1.84), p = .023, and bisexual participants (n = 51, M = 3.26, SD = 1.53), p = .019. Gay and lesbian participants (n = 43, M = 1.35, SD = 1.06) also reported significantly more use of narcotics and sedatives than heterosexual participants (n = 672, M = 1.10, SD = 0.50), p = .030.

**Sexual Assault Victimisation**

**Prevalence**

*Single victimisations.* Figures 40-45 depict the prevalence of attempted and completed oral, anal, and vaginal sexual assault experienced by participants since the age of 14 years. Figures 46-51 then illustrate the occurrence of each of these types of assault during the 12 months prior to data collection. Participants reported whether each type of assault occurred under certain circumstances involving alcohol and/or substance use. These circumstances are also illustrated in each figure. It should be noted that percentages reflect the proportion of participants who reported at least one experience of each type of assault and is therefore a reflection of the prevalence of single victimisations. Consideration of multiple victimisations is undertaken in the following section.
Figure 40. Prevalence of Attempted Oral Sexual Assault Since the age of 14 Years \((N = 765-777)\).

Figure 41. Prevalence of Completed Oral Sexual Assault Since the age of 14 Years \((N = 785-788)\).
Figure 42. Prevalence of Attempted Anal Sexual Assault Since the age of 14 Years ($N = 767-769$).

Figure 43. Prevalence of Completed Anal Sexual Assault Since the age of 14 Years ($N = 776-780$).
Figure 44. Prevalence of Attempted Vaginal Sexual Assault Since the age of 14 Years (N = 533-538).

Figure 45. Prevalence of Completed Vaginal Sexual Assault Since the age of 14 Years (N = 535-539).
Figure 46. Prevalence of Attempted Oral Sexual Assault in the Past 12 Months (N = 756-778).

Figure 47. Prevalence of Completed Oral Sexual Assault in the Past 12 Months (N = 782-789).
Figure 48. Prevalence of Attempted Anal Sexual Assault in the Past 12 Months ($N = 768-769$).

Figure 49. Prevalence of Completed Anal Sexual Assault in the Past 12 Months ($N = 778-782$).
Figure 50. Prevalence of Attempted Vaginal Sexual Assault in the Past 12 Months (N = 536-538).

Figure 51. Prevalence of Completed Vaginal Sexual Assault in the Past 12 Months (N = 534-542).
As is evident from an examination of Figures 40-51, and consistent with expectation, the number of drug-facilitated sexual assaults experienced since the age of 14 years was greater than those experienced during the previous 12 months. With regard to assaults occurring since the age of 14 years, completed oral sexual assaults were most prevalent, followed by completed vaginal assaults. Although completed oral assaults were also most frequently reported in the previous 12 months, attempted oral sexual assaults were more frequent than completed vaginal assaults. In all cases, anal sexual assaults were least prevalent.

With the exception of these findings, there were very few differences in the victimisation patterns reported by participants across the two time periods. In both cases, completed assaults were more prevalent than attempted assaults. Across each type of assault (oral, anal, and vaginal), the consumption of alcohol on the part of the victim, whether this was voluntary or involuntary, was more common than substance consumption. More specifically, assaults that took place after the victim had voluntarily consumed alcohol occurred more frequently than assaults under all remaining circumstances. It was also apparent from inspection of Figures 40-51 that assaults occurring after victims were pressured to consume alcohol were more prevalent than those that occurred after victims were spiked.

**Revictimisation.** When reporting on their experience of each type of sexual assault (oral, anal, and vaginal) under each type of alcohol- or substance-related circumstance, victims indicated whether they had experienced each assault on one, two, or three or more occasions. The following figures therefore depict the prevalence of single and multiple victimisations according to each circumstance. Percentages were calculated as a proportion of the total number of victims who reported each type of assault under each circumstance. For example, 81 participants reported at least one oral sexual assault
after meeting the perpetrator when intoxicated and unable to consent since the age of 14 years. The percentages of this circumstance in Figure 52 are therefore calculated as a proportion of 81. Each circumstance in each figure therefore has a different $N$. It should be noted that some $N$s were quite small, making generalisation difficult.

Figures 52-57 present the prevalence of revictimisation since the age of 14 years, while Figures 58-63 illustrate this prevalence during the 12 months prior to data collection.

**Figure 52.** Prevalence of Single and Multiple Incidents of Attempted Oral Sexual Assault Since the age of 14 Years ($N = 33-101$).
Figure 53. Prevalence of Single and Multiple Incidents of Completed Oral Sexual Assault Since the age of 14 Years ($N = 38-205$).

Figure 54. Prevalence of Single and Multiple Incidents of Attempted Anal Sexual Assault Since the age of 14 Years ($N = 6-33$).
Figure 55. Prevalence of Single and Multiple Incidents of Completed Anal Sexual Assault Since the age of 14 Years (N = 12-58).

Figure 56. Prevalence of Single and Multiple Incidents of Attempted Vaginal Sexual Assault Since the age of 14 Years (N = 15-83).
Figure 57. Prevalence of Single and Multiple Incidents of Attempted Vaginal Sexual Assault Since the age of 14 Years (N = 22-138).

Figure 58. Prevalence of Single and Multiple Incidents of Attempted Oral Sexual Assault in the Past 12 Months (N = 24-57).
Figure 59. Prevalence of Single and Multiple Incidents of Completed Oral Sexual Assault in the Past 12 Months (N = 13-109).

Figure 60. Prevalence of Single and Multiple Incidents of Attempted Anal Sexual Assault in the Past 12 Months (N = 3-18).
Figure 61. Prevalence of Single and Multiple Incidents of Completed Anal Sexual Assault in the Past 12 Months (N = 6-30).

Figure 62. Prevalence of Single and Multiple Incidents of Attempted Vaginal Sexual Assault in the Past 12 Months (N = 12-44).
Figure 63. Prevalence of Single and Multiple Incidents of Completed Vaginal Sexual Assault in the Past 12 Months (N = 9-66).

It is evident from inspection of Figures 52-63 that although revictimisation of drug-facilitated sexual assault does occur, and for some victims on multiple occasions within a period of 12 months, a general victimisation pattern is not clearly discernible. Nevertheless, some themes can be identified. With regard to assaults occurring since the age of 14 years, revictimisation was more prevalent than single victimisations in the majority of types of assault under each circumstance. This was particularly the case for attempted vaginal sexual assaults, and for all types of assault occurring after the victim was pressured to use substances other than alcohol. In addition, revictimisation was more prevalent than single victimisations of sexual assaults facilitated by drink spiking; this was the case across all types of sexual assault, except attempted anal assaults, where the proportions of single and multiple victimisations were equal.

In contrast to the patterns evident in assaults occurring since the age of 14 years, single victimisations were generally more common than multiple victimisations in the past 12 months. However, multiple
victimisations were more common amongst substance-related assaults than alcohol-related assaults.

The Relationship Between Gender and Sexual Assault Victimisation

An independent samples t-test determined that there were no differences in the number of oral or anal sexual assaults experienced by men and women in the sample, both during the previous 12 months and since the age of 14 years.

As only female participants reported on their experience of vaginal sexual assault, a gender difference analysis was not conducted.

The Relationship Between Age and Sexual Assault Victimisation

Because the sexual assault victimisation measure in the SES was divided into categories of oral, anal, and vaginal sexual assault, and an overall victimisation variable was not utilised at any point in the current study, separate analyses for men and women were conducted, as men did not respond to the items pertaining to vaginal sexual assault. This separation of participants was undertaken for all analyses involving sexual assault victimisation.

**Female victimisation.** Bivariate correlations involving female participants only determined that age was significantly correlated with victimisation of completed oral sexual assault since the age of 14, \( r(543) = .13, p = .003, r^2 = .02, 95\% \text{ C.I. (.00, .04)} \), attempted vaginal sexual assault since the age of 14, \( r(512) = .10, p = .030, r^2 = .01, 95\% \text{ C.I. (.00, .03)} \), and completed vaginal sexual assault since the age of 14, \( r(517) = .12, p = .006, r^2 = .01, 95\% \text{ C.I. (.00, .04)} \). Despite the small effect sizes and confidence intervals, it is evident that older participants reported greater experience of these three types of sexual assault than younger participants.

**Male victimisation.** Bivariate correlations, conducted with male participants only, determined that age was significantly correlated with victimisation of attempted anal sexual assault since the age of 14, \( r
(226) = .15, p = .023, r^2 = .02, 95% C.I. (.00, .07), and attempted anal sexual assault in the previous 12 months, r (228) = .14, p = .034, r^2 = .02, 95% C.I. (.00, .07). Again, small to moderate effect sizes and confidence intervals were obtained. Nonetheless, it can generally be concluded that older participants reported greater experience of attempted anal sexual assault than younger participants.

The Relationship Between Sexual Orientation and Sexual Assault Victimization

A one-way ANOVA was conducted in order to establish differences in prevalence of oral and anal sexual assault depending on participants’ sexual orientation. Significant group differences were evident on completed oral sexual assault since the age of 14, F (4, 779) = 3.91, p = .004, \( \eta^2 = .02 \), 95% C.I. (.00, .04), completed oral sexual assault in the past 12 months, F (4, 773) = 2.59, p = .035, \( \eta^2 = .01 \), 95% C.I. (.00, .03), attempted anal sexual assault since the age of 14, F (4, 758) = 4.69, p = .001, \( \eta^2 = .04 \), 95% C.I. (.01, .06), completed anal sexual assault since the age of 14, F (4, 759) = 5.15, p < .001, \( \eta^2 = .03 \), 95% C.I. (.01, .05), and completed anal sexual assault in the past 12 months, F (4, 766) = 2.47, p = .044, \( \eta^2 = .01 \), 95% C.I. (.00, .03). Effect sizes were small to moderate in strength.

Post hoc Bonferroni analyses indicated specific group differences. Bisexual participants (n = 50, M = 3.28, SD = 4.86) reported experiencing significantly more oral sexual assaults since the age of 14 than heterosexual participants (n = 667, M = 1.57, SD = 3.37), p = .011. Gay and lesbian participants (n = 42, M = 2.83, SD = 4.43) and participants who were unsure of their sexual orientation (n = 19, M = 2.37, SD = 3.59) reported a degree of victimisation that was not significantly different from all other groups. Similarly, bisexual participants (n = 49, M = 1.63, SD = 3.59) reported higher levels of oral sexual assault during the 12 months prior to data collection than heterosexual participants (n = 663, M = 0.63, SD = 2.05), p = .022. Again,
gay and lesbian participants \( (n = 41, M = 0.90, SD = 2.98) \) and unsure participants \( (n = 19, M = 0.63, SD = 1.50) \) did not differ from other groups in terms of the number of recent oral sexual assaults experienced.

With regard to anal sexual assault, gay and lesbian participants \( (n = 42, M = 1.33, SD = 3.76) \) reported experiencing significantly more attempted anal sexual assaults since the age of 14 than heterosexual participants \( (n = 650, M = 0.21, SD = 1.47), p < .001 \). Gay and lesbian participants \( (n = 42, M = 1.74, SD = 3.79) \) also reported higher levels of completed anal assaults since the age of 14 than heterosexual participants \( (n = 650, M = 0.36, SD = 1.90), p < .001 \). In both cases, bisexual participants (attempted anal assault: \( n = 47, M = 0.57, SD = 2.01 \); completed anal assault: \( n = 48, M = 1.04, SD = 2.93 \)) and unsure participants (attempted anal assault: \( n = 19, M = 0.11, SD = 0.46 \); completed anal assault: \( n = 19, M = 0.58, SD = 1.43 \)) reported prevalence levels that were not significantly different from all other groups.

Although a significant group difference in prevalence of completed anal sexual assault in the 12 months prior to data collection was identified by the ANOVA, post hoc analyses did not indicate significant differences between heterosexual participants \( (n = 657, M = 0.20, SD = 1.52) \), gay and lesbian participants \( (n = 41, M = 0.77, SD = 2.97) \), bisexual participants \( (n = 49, M = 0.82, SD = 2.64) \), and unsure participants \( (n = 19, M = 0.11, SD = 0.32) \).

An additional one-way ANOVA was conducted to explore this relationship amongst women experiencing vaginal sexual assault. Male participants were excluded from the analysis. A significant, albeit weak, group difference was identified on prevalence of completed vaginal sexual assault since the age of 14, \( F(4, 514) = 3.87, p = .004, r^2 = .03, 95\% \text{ C.I.} (.00, .06) \). Post hoc Bonferroni analysis determined that bisexual participants \( (n = 39, M = 3.59, SD = 5.57) \) reported significantly more experiences of this type of assault than heterosexual participants.
(n = 454, M = 1.58, SD = 3.35), p = .010. Gay and lesbian participants (n = 13, M = 3.46, SD = 5.32) and unsure participants (n = 11, M = 2.64, SD = 4.01) reported levels of victimisation that were not significantly different from all other groups.

**Engagement in Protective Behaviours**

**Prevalence**

Figures 64-67 illustrate the prevalence of each variable that loaded on the Low Supervision factor.

![Figure 64](image.png)

*Figure 64. Prevalence of Participants Accepting Drinks From Strangers (N = 794).*
Figure 65. Prevalence of Participants Leaving Drinks Unattended \((N = 794)\).
Figures 64-67 indicate that although a proportion of participants never engage in low supervisory behaviours (21%-55%), in the cases of leaving drinks unattended and accepting drinks from acquaintances, the majority of participants do engage in these behaviours at least “rarely” (64%-79%). Accepting drinks from acquaintances was the most prevalent of the low supervisory behaviours, with 29% of participants reporting doing so at least “often”, compared with between 7% and 19% engaging in the remaining three behaviours at least “often”.

Figures 68-70 depict the prevalence of the variables that loaded on the Moderate Supervision factor.
Figure 68. Prevalence of Participants Leaving Drinks With a Trusted Person When Using the Toilet (N = 794).

Figure 69. Prevalence of Participants Leaving Drinks With a Trusted Person When Dancing (N = 794).
Examination of Figures 68-70, in comparison with Figures 64-67, indicates that participants more frequently engaged in moderate supervisory behaviours than low supervisory behaviours. While between 7% and 29% of participants reported engaging in low supervisory behaviours at least “often”, the prevalence of engagement in the behaviours that comprised the Moderate Supervision factor was notably higher. More than three-quarters of the sample reported accepting drinks from friends either “often”, “most of the time”, or “always”, while between 53% and 65% frequently left drinks with trusted people.

Figures 71-73 present the prevalence of the variables loading on the High Supervision factor.
Figure 71. Prevalence of Participants Taking Drinks With Them When Dancing (N = 794).

Figure 72. Prevalence of Participants Taking Drinks With Them When Using the Toilet (N = 794).
Figures 71 and 72 should be interpreted with caution, as participants were not questioned as to whether they finished drinks before dancing or using the toilet; thus, the frequency with which participants “never” take drinks with them may not indicate that participants have frequently left drinks unattended before returning to consume them. Nonetheless, the prevalence of high supervision behaviours is similar to those of moderate supervision behaviours. Excluding Figure 72, the prevalence of engaging in high supervision behaviours “often”, “most of the time” or “always” ranged from 56% to 62%. However, closer examination indicates a lower degree of engagement in high supervision behaviours at all times. Between 10% and 16% of the sample reported such engagement, while between 19% and 43% reported engagement of moderate supervision behaviours at all times.
The Relationship Between Gender and Engagement in Protective Behaviours

An independent samples t-test was used to explore whether men and women reported engagement in protective behaviours to differing degrees. Men (M = 3.14, SD = 1.37) reported significantly more engagement in low supervision behaviours than women (M = 2.47, SD = 1.17), t (397.59) = 6.87, p < .001, d = 0.54, 95% C.I. (0.39, 0.70). Men (M = 4.01, SD = 1.61) also reported a significantly higher prevalence of high supervision behaviours than women (M = 3.70, SD = 1.56), t (789) = 2.59, p = .01, d = 0.20, 95% C.I. (0.04, 0.35).

The Relationship Between Age and Engagement in Protective Behaviours

Bivariate correlations revealed that age was significantly correlated with engaging in low supervision protective behaviours, r (792) = .26, p < .001, r² = .07, 95% C.I. (.04, .10), engaging in moderate supervision protective behaviours, r (792) = .14, p < .001, r² = .02, 95% C.I. (.00, .04), and engaging in high supervision protective behaviours, r (792) = .18, < .001, r² = .03, 95% C.I. (.01, .06). Positive correlations indicated that older participants reported greater engagement in each of the behaviours than younger participants. Effect sizes and confidence intervals were small to moderate.

The Relationship Between Sexual Orientation and Engagement in Protective Behaviours

A one-way ANOVA was conducted to determine if there were differences in prevalence of engaging in protective behaviours according to participants’ sexual orientation. No significant differences were identified.
Factors Associated With Sexual Assault: Their Relationship With Perpetration of Drink Spiking

Alcohol Expectancies

Bivariate correlations were conducted to examine the relationships between alcohol expectancies and participants’ previous experience of drink spiking perpetration. These correlations are illustrated in Table 15.

Table 15
Correlations Among Experience of Spiking (ES) and Alcohol Expectancy (AE) Factors (N = 798-805)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
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<th>4</th>
<th>5</th>
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<tbody>
<tr>
<td>1. AE Confidence and Sexuality</td>
<td></td>
<td>-.08*</td>
<td>.44***</td>
<td>.30***</td>
<td>.09*</td>
<td>.22***</td>
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<td>2. AE Interest in Sexual Activity</td>
<td>.14***</td>
<td>.03</td>
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<td>-.05</td>
<td>.16***</td>
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<td>4. AE Attractiveness</td>
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</table>

* p < .05
** p < .01
*** p < .001
Table 15 indicates that, apart from the Interest in Sexual Activity expectancy, the alcohol expectancy factors were generally correlated with each other, although the strength of the correlations is somewhat low. Participants’ high agreement with any expectancy generally correlated with high agreement with other expectancies, apart from the Alcohol Expectancy of Aggressive and Antisocial tendencies, which had an inverse relationship with all other expectancies.

Table 15 also reveals that most alcohol expectancies were also correlated with both types of drink spiking perpetration, indicating that experience of perpetration was correlated with participants’ agreement with expectancies that alcohol increases confidence, sexual responsiveness, interest in sexual activity, and aggressive and antisocial tendencies, while also increasing the attraction and interest in sexual activity held by others. However, agreement that alcohol increases interest in sexual activity was not correlated with behaviours involving placing substances into another person’s drink or adding alcoholic shots to a non-alcoholic beverage. However, these correlations are not considered to be particularly strong, with effect sizes ranging from .01 to .12.

In order to determine whether the alcohol expectancies were predictors of drink spiking perpetration, a multivariate multiple regression was undertaken, with Experience of Spiking Low Frequency and Experience of Spiking High Frequency entered as dependent variables, and the five Alcohol Expectancy factors entered as predictors. The set of independent variables significantly predicted the perpetration variables, \( \Lambda = 0.88, F = 10.86, p < .001 \). This significance permitted the examination of predictors of each individual dependent variable. Perpetration of drink spiking with substances, or adding alcoholic shots to non-alcoholic beverages, was predicted by the Alcohol Expectancy of Aggressive and Antisocial Tendencies, \( t = -4.61, \).
\[ p < .001, \eta^2 = .03, 95\% \text{ C.I. (.01, .05)}, \text{the Alcohol Expectancy of Attractiveness, } t = 2.83, p = .005, \eta^2 = .01, 95\% \text{ C.I. (.00, .03)}, \text{and the Alcohol Expectancy of Engaging in Casual Sexual Activity, } t = 2.05, p = .040, \eta^2 = .01, 95\% \text{ C.I. (.00, .02)}. \]

Participants’ previous experience of purchasing or mixing cocktails, adding alcohol to punch, or adding alcoholic shots to alcoholic beverages was predicted by the Alcohol Expectancy of Confidence and Sexuality, \[ t = 2.87, p = .004, \eta^2 = .01, 95\% \text{ C.I. (.00, .03)}, \] the Alcohol Expectancy of Aggressive and Antisocial Tendencies, \[ t = -3.38, p = .001, \eta^2 = .01, 95\% \text{ C.I. (.00, .03)}, \] the Alcohol Expectancy of Attractiveness, \[ t = 2.23, p = .026, \eta^2 = .01, 95\% \text{ C.I. (.00, .02)}, \] and the Alcohol Expectancy of Interest in Sexual Activity, \[ t = 3.51, p < .001, \eta^2 = .02, 95\% \text{ C.I. (.00, .04)}. \]

Based on effect sizes, it can be concluded that frequency of spiking with substances, or adding alcoholic shots to non-alcoholic beverages, was most strongly predicted by the expectation that alcohol consumption increases others’ interest in engaging in casual sexual activity. Such behaviours were also predicted, albeit to a weaker degree, by participants’ expectation that alcohol does not increase aggressive or antisocial tendencies, and that the consumption or acceptance of alcohol by other people demonstrates their sexual attraction to others. Higher agreement with each of these expectations predicted higher frequency of engaging in these spiking behaviours.

Effect sizes for predictors of participants’ experience of purchasing or mixing cocktails, adding alcohol to punch, or adding alcoholic shots to alcoholic beverages were generally small, indicating that a notable portion of the variance in participants’ frequency of engaging in these behaviours was accounted for by extraneous variables. Nonetheless, in terms of such expectancies, these behaviours were most strongly predicted by participants’ expectation that the
consumption or acceptance of alcohol by other people demonstrates their sexual attraction to others, and, to a lesser degree, participants’ expectations that alcohol results in others being interested in engaging in casual sexual activity. In both cases, stronger agreement with such expectancies predicted higher levels of engagement in these behaviours. Higher frequency was also predicted by participants’ agreement that alcohol increases confidence and sexual responsiveness, and by their disagreement that alcohol increases aggressive and antisocial behaviours.

**Alcohol Beliefs**

Bivariate correlations revealed a number of correlations amongst the Alcohol Belief factors and the Experience of Spiking factors, as illustrated in Table 16.

<table>
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<td>-.08*</td>
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<td>6. ES High Frequency</td>
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</table>

* *p < .05
*** *p < .001
As indicated in Table 16, although the Alcohol Belief factors of Responsibility to Others and Responsibility to Self were not correlated with the Experience of Spiking factors, the Responsibility to Others factor was correlated with the Alcohol Belief factor of Allowing Friends to Leave Venues, and was therefore included in the following multivariate analysis, while the Responsibility to Self factor was not correlated with other factors and was therefore not included in the analysis. A multivariate multiple regression, with the Alcohol Belief factors entered as predictors and the Experience of Spiking factors entered as dependent variables, indicated that the set of Alcohol Beliefs accounted for a significant amount of the variance in the Experience of Spiking factors, $\Lambda = 0.84$, $F = 24.14$, $p < .001$.

Examination of the individual predictors revealed that participants’ frequency of adding substances to beverages, or adding alcoholic shots to non-alcohol beverages, was predicted by the Alcohol Belief of Deliberate Intoxication of Others factor, $t = 5.95$, $p < .001$, $\eta^2 = .04$, 95% C.I. (.02, .07).

All three alcohol-related beliefs predicted participants’ experience of mixing or purchasing cocktails, adding alcohol to punch, or adding alcoholic shots to alcoholic beverages, although again, the relationships amongst these variables were not strong, as indicated by effect sizes. Such behaviours were predicted by the Alcohol Belief of Responsibility to Others, $t = 2.22$, $p = .027$, $\eta^2 = .01$, 95% C.I. (.00, .02), the Alcohol Belief of Deliberate Intoxication of Others, $t = 9.01$, $p < .001$, $\eta^2 = .09$, 95% C.I. (.06, .13), and the Alcohol Belief of Allowing Friends to Leave Venues, $t = -6.08$, $p < .001$, $\eta^2 = .05$, 95% C.I. (.02, .08).

Thus, participants who strongly agreed with the acceptability of deliberately causing intoxication in others were also likely to display high levels of substance-related drink spiking or adding alcoholic shots to non-alcoholic beverages belonging to others. This factor accounted for a moderate amount of the variance in the dependent variable. This
expectancy also predicted participants’ frequency of purchasing or mixing cocktails, adding alcohol to punch, or adding alcoholic shots to alcoholic beverages, with participants who endorsed this belief also displaying higher frequency of such behaviours. These behaviours were displayed by participants who did not endorse beliefs that they held responsibility in ensuring the safety of others and that it is acceptable for intoxicated friends to leave venues alone or with unfamiliar people. Thus, participants who believed that they held some responsibility in ensuring the safety of others were unlikely to engage in these drink spiking behaviours.

**Participation in Risk-Taking Activities**

Bivariate correlations highlighted a number of significant correlations amongst the risk-taking factors, and between risk-taking and the Experience of Spiking factors. These correlations are outlined in Table 17.

Although the Engagement in Positive Behaviours factor was not correlated with either of the Experience of Spiking factors, it was included in the following analyses as a result of its correlation with other risk-taking factors, as evident in Table 17. A multivariate multiple regression was conducted, with each risk-taking factor entered as predictors, and the Experience of Spiking factors entered as dependent variables. It was established that the set of predictors accounted for a significant amount of the variance in the drink spiking dependent variables, $\Lambda = 0.61, F = 36.18, p < .001$. 

\[\text{207}\]
Table 17

Correlations Among Risk-taking Factors and Experience of Spiking (ES) Factors (N = 790-798)

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<td>2. Use of Alcohol and Related Behaviours</td>
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<tr>
<td>3. Use of Narcotics and Sedatives</td>
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<td>.22***</td>
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<td>4. Engagement in Casual Sexual Activity</td>
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<td>.24***</td>
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<td>6. Engagement in Positive Behaviours</td>
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<td>8. ES High Frequency</td>
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* p < .05
** p < .01
*** p < .001

Examination of individual predictors determined that participants’ engagement in behaviours involving adding substances to drinks, or adding alcoholic shots to non-alcoholic drinks, was significantly predicted by their own Use of Narcotics and Sedatives, t = 16.71, p < .001, η² = .26, 95% C.I. (.21, .31). In contrast, participants’ engagement in purchasing or mixing cocktails, adding alcohol to punch, or adding alcoholic shots to alcoholic drinks, was predicted by
a number of risk-taking factors, including Use of Alcohol and Related Behaviours, \( t = 5.42, p < .001, \eta^2 = .04, 95\% \text{ C.I.} (.01, .06) \), Use of Narcotics and Sedatives, \( t = 3.54, p < .001, \eta^2 = .02, 95\% \text{ C.I.} (.00, .04) \), and Engagement in Casual Sexual Activity, \( t = 2.19, p = .03, \eta^2 = .01, 95\% \text{ C.I.} (.00, .02) \). As demonstrated by these correlations, higher levels of engagement in each of the risk-taking behaviours predicted higher perpetration of drink spiking behaviours, although effect sizes were generally small.

**Sexual Assault Victimisation**

**Female Victimisation**

Bivariate correlations were undertaken, establishing that a number of victimisation variables were correlated with each other; in addition, several of these variables were correlated with the Experience of Spiking factors. These correlations are presented in Table 18.

The bivariate correlations indicated that sexual assault victimisation was not significantly related to perpetration of drink spiking activities involving the adding of substances to beverages or the adding of alcoholic shots to non-alcoholic beverages (Experience of Spiking Low Frequency). This aspect of perpetration was therefore not included in further analyses. However, several of the sexual assault victimisation variables were correlated with other victimisation variables, and therefore were included in multivariate analysis.

A multiple regression was conducted, with the Experience of Spiking High Frequency factor entered as a dependent variable, and the sexual assault victimisation factors entered as predictors. The regression was not significant, indicating that sexual assault victimisation did not predict participants’ frequency of purchasing or mixing cocktails for others, adding alcohol to punch, or adding alcoholic shots to alcoholic beverages belonging to other people.
**Male Victimisation**

Bivariate correlations determined a number of associations amongst types of sexual assault victimisation amongst male participants, and amongst victimisation and perpetration of drink spiking. The correlation matrix is presented Table 19.

Although participants’ experience of attempted anal sexual assault since the age of 14 was not correlated with perpetration of drink spiking activities, it was included in multivariate analysis due to its correlation with other sexual assault victimisation variables. Due to the presence of two correlated dependent variables, a multivariate multiple regression was conducted, with the Experience of Spiking Low Frequency and Experience of Spiking High Frequency factors entered as dependent variables, and each sexual assault victimisation variable entered as predictors. The regression was not significant, indicating that the set of predictors did not account for a significant amount of variance in the dependent variables. Thus, although men’s experience of sexual assault and drink spiking perpetration were correlated, perpetration was not predicted by assault victimisation.
Table 18
Correlations Among Sexual Assault Victimisation (SA) Variables for Women and Experience of Spiking (ES) Factors
\((N = 509-553)\)

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* \(p < .05\)
** \(p < .01\)
*** \(p < .001\)
Table 19
Correlations Among Sexual Assault Victimisation (SA) Variables for Men and Experience of Spiking (ES) Factors
(N = 222-245)

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* p < .05
** p < .01
*** p < .001
Engagement in Protective Behaviours

Bivariate correlations were conducted in order to examine the relationships between the factors relating to engaging in behaviours that protect against drink spiking victimisation, and those relating to perpetration of drink spiking. Engaging in low supervision behaviours was significantly related to both Experience of Spiking Low Frequency, $r(792) = .20, p < .001, r^2 = .004, 95\% \text{C.I. (.02, .07)}$, and Experience of Spiking High Frequency, $r(792) = .32, p < .001, r^2 = .10, 95\% \text{C.I. (.07, .14)}$. Moderate supervisory behaviours were not correlated with Experience of Spiking High Frequency, but were correlated with Experience of Spiking Low Frequency, $r(792) = .07, p = .045, r^2 = .01, 95\% \text{C.I. (.00, .02)}$. Engaging in high supervision of one’s drinks was correlated with both Experience of Spiking Low Frequency, $r(792) = -.09, p = .015, r^2 = .01, 95\% \text{C.I. (.00, .03)}$, and Experience of Spiking High Frequency, $r(792) = .08, p = .024, r^2 = .01, 95\% \text{C.I. (.00, .02)}$. With the exception of the correlation between engaging in low supervision behaviours and Experience of Spiking High Frequency, which was moderate in strength, all effect sizes were small.

The presence of two correlated dependent variables warranted a multivariate multiple regression, with the Experience of Spiking factors entered as dependent variables and the factors relating to protective behaviours entered as predictors. The analysis determined that the set of protective behaviours accounted for a significant amount of the variance in drink spiking perpetration, $\Lambda = 0.86, F = 20.20, p < .001$.

Engaging in drink spiking activities involving adding substances to drinks or adding alcoholic shots to non-alcoholic beverages was predicted by both low supervision of one’s own drinks, $t = 6.31, p < .001, \eta^2 = .05, 95\% \text{C.I. (.02, .08)}$, and high supervision of one’s drinks, $t = -4.48, p < .001, \eta^2 = .03, 95\% \text{C.I. (.01, .03)}$. Low supervision also predicted participants’ engagement in purchasing or mixing cocktails, adding alcohol to punch, or adding alcoholic shots to alcoholic beverages, $t =$
Thus, participants who displayed low supervision levels of their own drinks also reported relatively high perpetration of both categories of drink spiking. In contrast, those who displayed high levels of supervision demonstrated relatively low frequency of the spiking behaviours involving adding substances to drinks or adding alcoholic shots to non-alcoholic beverages. The effect size for the relationship between low supervisory behaviours and high frequency drink spiking behaviours was medium in strength, while the remaining relationships involved small effect sizes.

**Interrelationship of Factors Associated With Sexual Assault**

As discussed, the examination of the relationships between sexual assault factors and perpetration of drink spiking yielded a number of positive relationships. However, given each relationship was examined categorically (e.g., all alcohol expectancies were examined together, without reference to remaining sexual assault factors), it is unclear firstly as to whether individual factors maintain a stronger influence on perpetration than individual factors in other categories (e.g., whether the Alcohol Expectancy of Confidence and Sexuality maintains a stronger relationship with perpetration than the Use of Narcotics and Sedatives). Secondly, it is unclear whether a combination of factors is optimal for predicting perpetration. For this reason, forward regression analyses were utilised to examine the potential interrelationships of each of the factors associated with sexual assault, thereby identifying the strongest set of predictors of drink spiking perpetration. Forward regression analyses were considered more appropriate methods of investigation than hierarchical regression analyses. The latter requires the selection of factors on the basis of theory, and, as aforementioned, the lack of research investigating drink spiking perpetration has determined that theory-driven decisions are not possible at this stage. Forward regression analysis is a statistically-based approach that identifies the
strongest predictor, followed by the second strongest predictor, and so on, until an optimal set of predictors is obtained.

Two independent forward regression analyses were conducted – in the first analysis, Experience of Spiking Low Frequency was entered as the dependent variable, whereas in the second analysis, Experience of Spiking High Frequency was the dependent variable. In each analysis, all factors, apart from those relating to sexual assault victimisation, were entered as predictors. The exclusion of the sexual assault victimisation predictors was undertaken because the regression analysis (described on pp. 206-209) exploring the relationship between these factors and drink spiking perpetration was not significant. In contrast, the regression analyses investigating alcohol expectancies, alcohol beliefs, participation in risk-taking activities, and engagement in protective behaviours were significant. For this reason, each factor in each of these categories was entered as a predictor. In both analyses, the criterion underlying inclusion of factors was $p < .05$. The sample size for each analysis was also adequate according to the criterion posited by Howell (2002), which states that:

$$ N = P + 50, $$

where $P$ is the number of predictors.

Table 20 presents the forward regression undertaken for adding alcoholic shots to non-alcoholic drinks or adding substances to drinks.
Table 20

Summary of Forward Regression Analysis for Variables Predicting Experience of Spiking Low Frequency (N = 786)

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<th>β</th>
<th>sr</th>
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<td>Use of Narcotics and Sedatives</td>
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<td>.02</td>
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<td>.01</td>
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<td>.12</td>
</tr>
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<td>-.03</td>
<td>.01</td>
<td>-.13***</td>
<td>-.12</td>
</tr>
<tr>
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<td>.04</td>
<td>.01</td>
<td>.15***</td>
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</tr>
<tr>
<td></td>
<td>Use of Alcohol and Related Behaviours</td>
<td>-.03</td>
<td>.01</td>
<td>-.10**</td>
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</tr>
</tbody>
</table>
Table 20 (continued)

<table>
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<th>Model</th>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>sr</th>
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<td>6</td>
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<td>.34</td>
<td>.02</td>
<td>.51***</td>
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<td>.04</td>
<td>.01</td>
<td>.15***</td>
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<td>-.11**</td>
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<td>.02</td>
<td>.52***</td>
<td>.48</td>
</tr>
<tr>
<td></td>
<td>Alcohol Belief Deliberate Intoxication of Others</td>
<td>.04</td>
<td>.01</td>
<td>.12***</td>
<td>.11</td>
</tr>
<tr>
<td></td>
<td>Protective Behaviours High Supervision</td>
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<td>.01</td>
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<td>-.13</td>
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<td>.16***</td>
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</tr>
<tr>
<td></td>
<td>Use of Alcohol and Related Behaviours</td>
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<td>.01</td>
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<td>.01</td>
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<td>Use of Stimulants and Hallucinogens</td>
<td>-.02</td>
<td>.01</td>
<td>-.07</td>
<td>-.06</td>
</tr>
</tbody>
</table>

* p < .05  
** p < .01  
*** p < .001  

Note: R² = .360 for Step 7.
Examination of $R^2$ values for each step in the model determined that 36.0% of the variance was accounted for in the final step. Models 1 and 2 accounted for 31.0% and 32.4% of the variance, respectively, indicating that these models could be utilised for the sake of parsimony, as the amount of variance explained by the latter models is not notably larger than that explained by Models 1 and 2. However, inspection of individual predictors highlights the contribution made by each of the variables involved in Model 7, demonstrating that the final model is indeed the most optimal. Clearly, participants’ own use of narcotics and sedatives is critical in the prediction of perpetration of drink spiking using substances – the squared semi-partial correlation, which denotes unique variance, indicated that this variable alone accounted for 23.4% of the variance. The following three predictors made a moderate contribution to the model. The two factors regarding participants’ own supervision of drinks demonstrated similar amounts of unique variance (1.5% and 1.7%) – higher levels of perpetration were predicted by lower levels of high supervision and higher levels of low supervision of one’s own drinks. The Alcohol Belief of Deliberate Intoxication of Others was also of similar importance to these two factors in predicting perpetration. Finally, three factors demonstrated a minor contribution to the perpetration model – the Alcohol Expectancy of Aggressive and Antisocial Tendencies, Use of Alcohol and Related Behaviours, and Use of Stimulants and Hallucinogens. The predictive nature of alcohol use was negative, indicating that perpetration was predicted by lower levels of alcohol use.

A second analysis was conducted, assessing the contribution of the same predictors to perpetration of high frequency drink spiking behaviours, including purchasing or mixing cocktails, adding alcohol to punch, and adding alcoholic shots to alcoholic drinks. Table 21 presents the findings from this forward regression analysis.
The $R^2$ values for this analysis determined that 20.3% of the variance was accounted for by Model 3, whereas Model 6 accounted for 22.1%, indicating a minor difference between Models 3 and 6 and determining that the predictors involved in Model 3 were of significant importance. Examination of the individual predictors illustrated that high frequency perpetration was predominantly predicted by the Alcohol Belief of Deliberate Intoxication of Others, which accounted for 4.9% of the variance, and, to a slightly lesser degree, low supervisory protective behaviours, which accounted for 2.9% of the variance. The remaining four factors accounted for similar amounts of variability, indicating a comparable contribution of perpetrators’ substance use, engagement in casual sexual activity, and expectations that alcohol increased confidence and sexual responsiveness.

Overall, perpetration of spiking using substances or adding alcoholic shots to non-alcoholic drinks was predominantly predicted by participants’ use of narcotics and sedatives, followed by a combination of perpetrators’ use of alcohol, stimulants and hallucinogens, low supervisory behaviours, and beliefs regarding the acceptability of causing intoxication in others and the effects of alcohol on aggressive and antisocial tendencies. In contrast, perpetration of spiking involving cocktails, punch, and adding alcohol to alcoholic drinks was similarly predicted by a range of factors, including substance use and beliefs and behaviours regarding sexual activity.
Table 21

Summary of Forward Regression Analysis for Variables Predicting Experience of Spiking High Frequency (N = 786)

<table>
<thead>
<tr>
<th>Model</th>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>sr</th>
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<td>2</td>
<td>Protective Behaviours Low Supervision</td>
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<td>.02</td>
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<td>.27</td>
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<tr>
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<td>Alcohol Belief Deliberate Intoxication of Others</td>
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<td>3</td>
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<tr>
<td></td>
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<td>.22</td>
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<td>.27***</td>
<td>.26</td>
</tr>
<tr>
<td></td>
<td>Use of Stimulants and Hallucinogens</td>
<td>.09</td>
<td>.02</td>
<td>.16***</td>
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<tr>
<td>4</td>
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<td></td>
<td>Alcohol Belief Deliberate Intoxication of Others</td>
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<tr>
<td></td>
<td>Use of Stimulants and Hallucinogens</td>
<td>.07</td>
<td>.02</td>
<td>.12**</td>
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<td></td>
<td>Engagement in Casual Sexual Activity</td>
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<td>.02</td>
<td>.09*</td>
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<td>.02</td>
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<td>.08</td>
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<tr>
<td></td>
<td>Use of Narcotics and Sedatives</td>
<td>.14</td>
<td>.06</td>
<td>.08*</td>
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</table>
Table 21 (continued)

<table>
<thead>
<tr>
<th>Model</th>
<th>Variable</th>
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<th>$\beta$</th>
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<td>.03</td>
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<td></td>
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<td>.03</td>
<td>.24***</td>
<td>.22</td>
</tr>
<tr>
<td></td>
<td>Use of Stimulants and Hallucinogens</td>
<td>.06</td>
<td>.02</td>
<td>.10**</td>
<td>.08</td>
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<tr>
<td></td>
<td>Engagement in Casual Sexual Activity</td>
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<td>.02</td>
<td>.08*</td>
<td>.07</td>
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<td></td>
<td>Use of Narcotics and Sedatives</td>
<td>.15</td>
<td>.06</td>
<td>.08*</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>Alcohol Expectancy Confidence and Sexuality</td>
<td>.07</td>
<td>.03</td>
<td>.08*</td>
<td>.07</td>
</tr>
</tbody>
</table>

* $p < .05$
** $p < .01$
*** $p < .001$

Note: $R^2 = .221$ for Step 6.
Motivations for Perpetration of Drink Spiking

Participants who reported at least one engagement in a drink spiking behaviour reported the motivations that prompted the behaviour. Table 22 and Figures 74-76 depict the prevalence of motivations held for purchasing or mixing cocktails or adding alcohol to punch, adding alcoholic shots to another person’s drink, and adding substances to another person’s drink. Rates reflect the percentage of participants who reported engaging in each category of activities.

Motivations for purchasing or mixing cocktails or adding alcohol to punch are presented as percentages of the number of participants who reported engaging in this behaviour at least once ($N = 953$). Similarly, motivations for adding alcoholic shots are presented as percentages of the number of participants who had undertaken this activity ($N = 179$), while motivations for adding substances are presented as percentages of the number of people who reported perpetrating this behaviour ($N = 14$).
<table>
<thead>
<tr>
<th>Motivation</th>
<th>Buying/mixing cocktails or adding alcohol to punch</th>
<th>Adding alcoholic shots</th>
<th>Adding substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Just for fun</td>
<td>21%</td>
<td>43%</td>
<td>43%</td>
</tr>
<tr>
<td>I thought it would make it easier to gain control over a person</td>
<td>1%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>I didn’t think it would do any harm</td>
<td>1%</td>
<td>3%</td>
<td>7%</td>
</tr>
<tr>
<td>I thought it would give me a better chance of having sex</td>
<td>15%</td>
<td>10%</td>
<td>14%</td>
</tr>
<tr>
<td>To get someone to like me</td>
<td>13%</td>
<td>16%</td>
<td>14%</td>
</tr>
<tr>
<td>To make me cool within my group of friends</td>
<td>4%</td>
<td>18%</td>
<td>0%</td>
</tr>
<tr>
<td>To put people in a better mood</td>
<td>1%</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>To get everyone drunk</td>
<td>1%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Because I knew the effects would only be temporary</td>
<td>0%</td>
<td>2%</td>
<td>0%</td>
</tr>
<tr>
<td>Because the person asked for it</td>
<td>3%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>Because the person was too straight</td>
<td>2%</td>
<td>3%</td>
<td>0%</td>
</tr>
<tr>
<td>To show them a good time</td>
<td>2%</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>Because I knew they didn’t have the money to buy alcohol or drugs</td>
<td>7%</td>
<td>8%</td>
<td>14%</td>
</tr>
<tr>
<td>Because the person was rude to me</td>
<td>9%</td>
<td>12%</td>
<td>7%</td>
</tr>
<tr>
<td>Because the person needed to loosen up</td>
<td>6%</td>
<td>7%</td>
<td>0%</td>
</tr>
<tr>
<td>I was doing the person a favour</td>
<td>1%</td>
<td>3%</td>
<td>0%</td>
</tr>
</tbody>
</table>
Table 22 (continued)

<table>
<thead>
<tr>
<th>Motivation</th>
<th>Buying/mixing cocktails or adding alcohol to punch</th>
<th>Adding alcoholic shots</th>
<th>Adding substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Because the person was dressed in a way that indicated that they wouldn't have cared</td>
<td>3%</td>
<td>7%</td>
<td>0%</td>
</tr>
<tr>
<td>To impress my friends</td>
<td>0%</td>
<td>1%</td>
<td>7%</td>
</tr>
<tr>
<td>I thought I was being a generous host</td>
<td>10%</td>
<td>4%</td>
<td>0%</td>
</tr>
<tr>
<td>To get someone drunk</td>
<td>4%</td>
<td>7%</td>
<td>21%</td>
</tr>
<tr>
<td>To make me more confident to approach others</td>
<td>1%</td>
<td>3%</td>
<td>7%</td>
</tr>
<tr>
<td>To break the ice with someone</td>
<td>1%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Because the person was drunk anyway</td>
<td>5%</td>
<td>9%</td>
<td>14%</td>
</tr>
<tr>
<td>To liven up a party</td>
<td>1%</td>
<td>2%</td>
<td>7%</td>
</tr>
<tr>
<td>To put people in the mood for sex</td>
<td>7%</td>
<td>6%</td>
<td>29%</td>
</tr>
<tr>
<td>Because the person looked like a drug user anyway</td>
<td>0%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>To share the buzz I was having</td>
<td>1%</td>
<td>1%</td>
<td>7%</td>
</tr>
<tr>
<td>Because I’m more successful at picking up when others are drunk or drug-affected</td>
<td>0%</td>
<td>1%</td>
<td>0%</td>
</tr>
<tr>
<td>Because the person deserved it</td>
<td>2%</td>
<td>6%</td>
<td>7%</td>
</tr>
<tr>
<td>Because it’s easier for me to approach people for sex if they’re drunk or drug-affected</td>
<td>8%</td>
<td>10%</td>
<td>21%</td>
</tr>
<tr>
<td>Because the person had knocked me back earlier</td>
<td>3%</td>
<td>6%</td>
<td>7%</td>
</tr>
<tr>
<td>Because I knew it wouldn’t do any harm</td>
<td>4%</td>
<td>8%</td>
<td>7%</td>
</tr>
<tr>
<td>Because I knew it would be funny</td>
<td>1%</td>
<td>4%</td>
<td>7%</td>
</tr>
</tbody>
</table>
Figure 74. Prevalence of Participants’ Motivations for Buying or Mixing Cocktails or Adding Alcohol to Punch.
Figure 75. Prevalence of Participants’ Motivations for Adding Alcoholic Shots to Another Person’s Drink.
Figure 75. Prevalence of Participants’ Motivations for Adding Substances to Another Person’s Drink.
Table 22 and Figures 74-76 indicated that most participants engaged in the range of spiking behaviours for fun, although rates of this motivation were higher for behaviours involving the adding of alcoholic shots or substances to beverages (43%), as opposed to purchasing or mixing cocktails and adding alcohol to punch (21%).

Although participants did not report a desire to gain control of the consumer of the spiked drink, with between 0% and 3% of participants reporting that “I thought it would make it easier to gain control over a person”, participants were motivated by the potential for increased likelihood of engaging in sexual activity as a result of their spiking behaviour. Between 10% and 15% of participants indicated that “I thought it would give me a better chance of having sex”, while between 6% and 29% reported that their motivation for spiking was “To put people in the mood for sex”. In addition, between 8% and 21% stated that they perpetrated a drink spiking act “Because it’s easier for me to approach people for sex if they’re drunk or drug-affected”. These motivations were particularly apparent amongst participants who had added substances to beverages belonging to others – the prevalence for the three motivations ranged from 14% to 29%.

Motivations pertaining to the sharing of a positive experience were also prevalent amongst participants who had added substances to another person’s drink. Seven percent of these participants reported that they wanted “To show them (the consumer of the spiked drink) a good time” and “To share the buzz I (the perpetrator) was having”. A relatively large proportion (21%) of participants who had spiked with substances were also motivated by a desire to cause deliberate intoxication in another person. This motivation was also reported by 7% of participants who had added alcoholic shots to a beverage belonging to someone else.

Nonparametric tests were used to determine the most prevalent motivations on each category of drink spiking behaviour. Cochran’s Q tests enabled the comparison of the five most frequently reported motivations,
thereby identifying the presence of significant differences. The five most prevalent motivations for each type of behaviour are presented in Table 20.

With regard to purchasing or mixing cocktails and adding alcohol to punch, participants more frequently reported that they were motivated by fun than they were motivated by either an increased likelihood of engaging in sexual activity, \( p < .001 \) (\( Q = 15.07 \) on degrees of freedom of 1), or a desire to increase their target’s liking of the perpetrator, \( p < .001 \) (\( Q = 38.82 \) on degrees of freedom of 1). The latter two motivations were not reported to a significantly greater degree than each other. However, the motivation of increased likelihood of sexual activity occurring was reported more frequently than the motivation of being a generous host, \( p < .001 \) (\( Q = 12.92 \) on degrees of freedom of 1), while the motivation of a desire to increase the target’s liking was not. This latter motivation was reported more frequently than acting in response to the target’s rudeness, \( p = .002 \) (\( Q = 9.97 \) on degrees of freedom of 1). Being a generous host was not reported significantly more frequently than the motivation of responding to the target’s rudeness.
Table 23  
*The Five Most Frequently Reported Motivations for Each Category of Drink Spiking Behaviours*

<table>
<thead>
<tr>
<th>Buying/mixing cocktails or adding alcohol to punch</th>
<th>Adding alcoholic shots</th>
<th>Adding substances</th>
</tr>
</thead>
<tbody>
<tr>
<td>Just for fun</td>
<td>Just for fun</td>
<td>Just for fun</td>
</tr>
<tr>
<td>I thought it would give me a better chance of having sex</td>
<td>To make me cool within my group of friends</td>
<td>To put people in the mood for sex</td>
</tr>
<tr>
<td>To get someone to like me</td>
<td>To get someone to like me</td>
<td>To get someone drunk / Because it's easier for me to approach people for sex if they're drunk or drug-affected</td>
</tr>
<tr>
<td>I thought I was being a generous host</td>
<td>Because the person was rude to me</td>
<td>I thought it would give me a better chance of having sex / To get someone to like me / Because I knew they didn't have the money to buy alcohol or drugs / Because the person was drunk anyway</td>
</tr>
<tr>
<td>Because the person was rude to me</td>
<td>Because it's easier for me to approach people for sex if they're drunk or drug-affected / I thought it would give me a better chance of having sex</td>
<td></td>
</tr>
</tbody>
</table>
Again, the motivation of fun was reported more frequently by participants who had added alcoholic shots to another person’s beverage. This motivation was significantly more prevalent than the desire to look cool, \( p < .001 \) (\( Q = 34.89 \) on degrees of freedom of 1) and the desire to increase the target’s liking of the perpetrator, \( p < .001 \) (\( Q = 41.68 \) on degrees of freedom of 1). The desire to look cool was in turn significantly more frequently reported than acting in response to rudeness, \( p = .034 \) (\( Q = 4.48 \) on degrees of freedom of 1), increasing the ease with which the participant can approach others, \( p = .007 \) (\( Q = 7.26 \) on degrees of freedom of 1), and increasing one’s chances of engaging in sexual activity, \( p = .019 \) (\( Q = 5.49 \) on degrees of freedom of 1); however, it was not significantly more prevalent than the desire to increase the target’s liking of the perpetrator. This desire was not more frequently reported than any of the remaining five most prevalent motivations, nor was the acting in response to rudeness motivation.

The frequency with which participants reported each of the five most prevalent motivations for adding substances to another person’s beverage did not generally differ significantly. However, participants were more frequently motivated by fun than by the target’s lack of money, \( p = .046 \) (\( Q = 4.00 \) on degrees of freedom of 1) and by the assumption that the target was drunk anyway, \( p = .046 \) (\( Q = 4.00 \) on degrees of freedom of 1).

**Willingness to Perpetrate Drink Spiking**

Bivariate correlations were conducted to assess the presence of significant relationships between variables pertaining to willingness to engage in, and previous experience of, perpetration of drink spiking activities. The correlation between Willingness to Spike Low Frequency and Willingness to Spike High Frequency was significant, \( r (795) = .41, p < .001, r^2 = .17, 95\% \text{ C.I. (.12, .22).} \) The correlation between Experience of Spiking Low Frequency and Experience of Spiking High Frequency was also significant, \( r (796) = .34, p < .001, r^2 = .12, 95\% \text{ C.I. (.08, .16).} \) Effect sizes were medium to large in strength.

The Willingness to Spike Low Frequency factor was also significantly correlated with both Experience of Spiking Low Frequency, \( r (794) = .67, p <
Moreover, Willingness to Spike High Frequency was significantly correlated with Experience of Spiking Low Frequency, \( r (794) = .27, p < .001, r^2 = .07, 95\% C.I. (.04, .11) \), and Experience of Spiking High Frequency, \( r (794) = .73, p < .001, r^2 = .53, 95\% C.I. (.49, .58) \). Of note are the strong correlations, and particularly large effect sizes, between willingness to engage in lower frequency behaviours and actual experience of these behaviours, and between willingness to engage in higher frequency behaviours and experience of these behaviours.

Due to the presence of multiple dependent variables and the correlation between the dependent variables, a multivariate multiple regression was conducted to determine whether engagement in drink spiking behaviours predicted participants’ willingness to partake in such behaviours in the future. Willingness to Spike Low Frequency and Willingness to Spike High Frequency were entered as dependent variables, while Experience of Spiking Low Frequency and Experience of Spiking High Frequency were entered as predictors.

The analysis revealed that the set of Experience of Spiking factors did predict a significant amount of the variance in the Willingness to Spike factors, \( \Lambda = .27, F (4, 1584) = 370.87, p < .001 \). Because this was significant, further examination of the relationships between the predictors and the Willingness to Spike factors was possible. The Willingness to Spike Low Frequency factor was significantly predicted by both Experience of Spiking Low Frequency, \( t = 23.06, p < .001, \eta^2 = .40, 95\% C.I. (.35, .45) \), and Experience of Spiking High Frequency, \( t = 3.42, p = .001, \eta^2 = .02, 95\% C.I. (.00, .04) \). The Experience of Spiking High Frequency also predicted Willingness to Spike High Frequency, \( t = 28.21, p < .001, \eta^2 = .50, 95\% C.I. (.46, .54) \), although the Experience of Spiking Low Frequency factor did not.

The abovementioned correlations determined that higher levels of willingness to engage in drink spiking behaviours are correlated with high levels of previous perpetration of such activities. Thus, it can be concluded
that a high willingness to engage behaviours involving adding alcohol to non-alcoholic drinks, or substances to another person’s drink, was likely amongst participants who have engaged in high levels of all spiking behaviours, although such willingness is more strongly predicted by previous experience of these specific behaviours. Additionally, a high willingness to mix or purchase cocktails, add alcohol to punch, or add alcoholic shots to alcoholic beverages was predicted by high levels of experience of engaging in these behaviours. In contrast, this willingness was not predicted by experience of engaging in substance-involved drink spiking.

Factors Associated With Sexual Assault: Their Relationship With Victimisation of Drink Spiking

The following analyses were conducted with data relating to self-report experiences of drink spiking victimisation. Although prevalence trends indicate similarities between reports of participants’ own experiences and the experiences of people known to participants, exploration of the significance of these similarities is beyond the scope of the current study. It was therefore assumed that self-reports are at least slightly more reliable accounts of drink spiking occurrences. For this reason, further analyses investigated only self-report experiences.

Alcohol Expectancies

Bivariate correlations were calculated to assess the relationships between alcohol expectancies and participants’ experience of drink spiking victimisation, as presented in Table 24. Although drink spiking victimisation was not correlated with all Alcohol Expectancy factors, the correlation of Alcohol Expectancy factors warranted their use in a multivariate analysis investigating their potential prediction of spiking victimisation. A multiple regression was conducted, with the number of occasions of victimisation entered as a dependent variable, and the Alcohol Expectancy factors entered as predictors. The overall regression was significant, $F(5, 796) = 2.50, p = .029, \eta^2 = .02, 95\% C.I. (.00, .03)$, indicating that the set of predictors accounted for a significant amount of the variance in the dependent
variable. Examination of individual predictors revealed that only the Alcohol Expectancy of Confidence and Sexuality predicted drink spiking victimisation, $t = 2.55, p = .011, \eta^2 = .01, 95\% \text{ C.I.} (0.00, 0.03)$. Thus, although a small effect size was evident, participants who reported higher levels of belief that alcohol consumption increases confidence and sexual responsiveness also reported higher levels of drink spiking victimisation.

Table 24

*Correlations Among Alcohol Expectancy (AE) Factors and Number of Occasions in Which Participant had Experienced Drink Spiking (DS) (N = 802)*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. AE Confidence and Sexuality</td>
<td>.30***</td>
<td>-0.08*</td>
<td>.46***</td>
<td>.30***</td>
<td>.10**</td>
<td></td>
</tr>
<tr>
<td>2. AE Interest in Sexual Activity</td>
<td>.14***</td>
<td>.03</td>
<td>.12**</td>
<td>-0.02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. AE Aggressive and Antisocial Tendencies</td>
<td>-0.11**</td>
<td>-0.14***</td>
<td>-0.04</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. AE Attractiveness</td>
<td>.26***</td>
<td>.07*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. AE Engaging in Casual Sexual Activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-0.01</td>
<td></td>
</tr>
<tr>
<td>6. DS Victimisation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* $p < .05$
** $p < .01$
*** $p < .001$
**Alcohol Beliefs**

Bivariate correlations were conducted to identify any correlations amongst the Alcohol Belief factors and drink spiking victimisation, as displayed in Table 25. As there was not any correlation between any Alcohol Beliefs and drink spiking victimisation, further analysis was not conducted.

Table 25

*Correlations Among Alcohol Beliefs (AB) Factors and Number of Occasions in Which Participant had Experienced Drink Spiking (DS) (N = 802)*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. AB Allowing Friends to Leave Venues</td>
<td>.18***</td>
<td>.06</td>
<td>-.14***</td>
<td>.03</td>
<td></td>
</tr>
<tr>
<td>2. AB Responsibility to Others</td>
<td></td>
<td>.08*</td>
<td>-.03</td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>3. AB Responsibility to Self</td>
<td></td>
<td></td>
<td>-.06</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>4. AB Deliberate Intoxication of Others</td>
<td></td>
<td></td>
<td></td>
<td>-.04</td>
<td></td>
</tr>
<tr>
<td>5. DS Victimisation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05  
** p < .01  
*** p < .001

**Participation in Risk-Taking Activities**

Bivariate correlations indicated that drink spiking victimisation was related to a number of risk-taking behaviours, as illustrated in Table 26. Again, due to the presence of a correlation between a number of risk-taking factors and drink spiking victimisation, a multiple regression was conducted, with the former entered as predictors and the latter as a dependent variable. The
regression was significant, $F(6, 780) = 2.52, p = .020, \eta^2 = .02, 95\% \text{ C.I.} (.00, .03)$, and one predictor, Use of Stimulants and Hallucinogens, was also significant, $t = 2.37, p = .018, \eta^2 = .01, 95\% \text{ C.I.} (.00, .02)$, although a small effect size was present. Thus, higher engagement in these substance use behaviours was predictive of higher levels of drink spiking victimisation.

Table 26

*Correlations Among Risk-taking Factors and Number of Occasions in Which Participant had Experienced Drink Spiking (DS) (N = 790)*

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Use of Stimulants and Hallucinogens</td>
<td>.57***</td>
<td>.34***</td>
<td>.46***</td>
<td>.32***</td>
<td>- .09**</td>
<td>.12**</td>
</tr>
<tr>
<td>2. Use of Alcohol and Related Behaviours</td>
<td>.23***</td>
<td>.44***</td>
<td>.25***</td>
<td>- .17***</td>
<td>.05</td>
<td></td>
</tr>
<tr>
<td>3. Use of Narcotics and Sedatives</td>
<td>.21***</td>
<td>.37***</td>
<td>.09*</td>
<td>.08*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Engagement in Casual Sexual Activity</td>
<td>.14***</td>
<td>-.11**</td>
<td>.06</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Driving without a Licence</td>
<td>.08*</td>
<td>.09*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Engagement in Positive Behaviours</td>
<td>.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 7. DS Victimisation | * $p < .05$  
** $p < .01$  
*** $p < .001$ |
Sexual Assault Victimisation

As with the above analyses relating to sexual assault victimisation, data analysing sexual assault and drink spiking victimisation was separated according to male and female participants, as male participants did not respond to items relating to vaginal assault, whereas female participants did.

Female Victimisation

Results of bivariate correlations conducted with sexual assault and drink spiking victimisation variables are presented in Table 27.

Again, a multiple regression was conducted, with drink spiking victimisation functioning as the dependent variable and each sexual assault variable functioning as predictors. The overall regression was significant, \( F(12, 449) = 11.79, p < .001, \eta^2 = .24, 95\% \text{ C.I.} (.16, .28). \) Frequency of drink spiking victimisation was significantly predicted by frequency of attempted oral sexual assault since the age of 14, \( t = -2.78, p = .006, \eta^2 = .02, 95\% \text{ C.I.} (.00, .05) \), frequency of attempted oral sexual assault in the previous 12 months, \( t = 1.99, p = .047, \eta^2 = .01, 95\% \text{ C.I.} (.00, .03) \), and frequency of completed oral sexual assault since the age of 14, \( t = 4.82, p < .001, \eta^2 = .05, 95\% \text{ C.I.} (.02, .09) \). As these correlations were positive, it can be concluded that higher frequency of these types of sexual assault were predictive of drink spiking victimisation, although small to moderate effect sizes were noted.
Table 27

Correlations Among Sexual Assault Victimization (SA) Variables for Women and Number of Occasions on Which Women had Experienced Drink Spiking (DS) Victimization (N = 509-554)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Attempted oral SA since 14</td>
<td>.68***</td>
<td>.48***</td>
<td>.26***</td>
<td>.52***</td>
<td>.42***</td>
<td>.29***</td>
<td>.19***</td>
<td>.75***</td>
<td>.48***</td>
<td>.48***</td>
<td>.26***</td>
<td>.16***</td>
<td></td>
</tr>
<tr>
<td>2. Attempted oral SA 12 months</td>
<td>.16***</td>
<td>.39***</td>
<td>.47***</td>
<td>.59***</td>
<td>.20***</td>
<td>.30***</td>
<td>.44***</td>
<td>.78***</td>
<td>.10*</td>
<td>.35***</td>
<td>.19***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Completed oral SA since 14</td>
<td>.48***</td>
<td>.24***</td>
<td>.11*</td>
<td>.46***</td>
<td>.25***</td>
<td>.28***</td>
<td>.53***</td>
<td>.32***</td>
<td>.79***</td>
<td>.34***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Completed oral SA 12 months</td>
<td>.30***</td>
<td>.27***</td>
<td>.44***</td>
<td>.56***</td>
<td>.28***</td>
<td>.53***</td>
<td>.32***</td>
<td>.77***</td>
<td>.26***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Attempted anal SA since 14</td>
<td>.59***</td>
<td>.42***</td>
<td>.36***</td>
<td>.59***</td>
<td>.54***</td>
<td>.28***</td>
<td>.34***</td>
<td>.09*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Attempted anal SA 12 months</td>
<td>.30***</td>
<td>.48***</td>
<td>.37***</td>
<td>.57***</td>
<td>.13**</td>
<td>.33***</td>
<td>.10*</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Completed anal SA since 14</td>
<td>.62***</td>
<td>.40***</td>
<td>.26***</td>
<td>.50***</td>
<td>.45***</td>
<td>.12**</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Completed anal SA 12 months</td>
<td>.26***</td>
<td>.44***</td>
<td>.25***</td>
<td>.59***</td>
<td>.10*</td>
<td></td>
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<tr>
<td>9. Attempted vaginal SA since 14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.55***</td>
<td>.63***</td>
<td>.34***</td>
<td>.18***</td>
<td></td>
</tr>
<tr>
<td>10. Attempted vaginal SA 12 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.22***</td>
<td>.58***</td>
<td>.23***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Completed vaginal SA since 14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.43***</td>
<td>.29***</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>12. Completed vaginal SA 12 months</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.24***</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05  ** p < .01  *** p < .001
Table 28
Correlations Among Sexual Assault Victimisation (SA) Variables for Men and Experience of Spiking (ES) Factors
(N = 222-245)

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Attempted oral SA since 14</td>
<td>.94***</td>
<td>.71***</td>
<td>.77***</td>
<td>.46***</td>
<td>.47***</td>
<td>.55***</td>
<td>.60***</td>
<td>.58***</td>
<td>.40***</td>
</tr>
<tr>
<td>2.</td>
<td>Attempted oral SA 12 months</td>
<td>.64***</td>
<td>.78***</td>
<td>.39***</td>
<td>.53***</td>
<td>.55***</td>
<td>.66***</td>
<td>.61***</td>
<td>.41***</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Completed oral SA since 14</td>
<td>.82***</td>
<td>.35***</td>
<td>.31***</td>
<td>.68***</td>
<td>.60***</td>
<td>.57***</td>
<td>.39***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Completed oral SA 12 months</td>
<td>.35***</td>
<td>.52***</td>
<td>.66***</td>
<td>.77***</td>
<td>.67***</td>
<td>.44***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Attempted anal SA since 14</td>
<td>.76***</td>
<td>.64***</td>
<td>.67***</td>
<td>.12</td>
<td>.12</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Attempted anal SA 12 months</td>
<td>.68***</td>
<td>.93***</td>
<td>.15*</td>
<td>.16*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Completed anal SA since 14</td>
<td>.88***</td>
<td>.67***</td>
<td>.35***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Completed anal SA 12 months</td>
<td></td>
<td>.77***</td>
<td>.37***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>ES Low Frequency</td>
<td></td>
<td></td>
<td>.46***</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>ES High Frequency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

* p < .05  
** p < .01  
*** p < .001
Male Victimisation

Results of bivariate correlations conducted with sexual assault and drink spiking victimisation variables are presented in Table 28 above.

A multiple regression, with drink spiking victimisation entered as the dependent variable and the sexual assault variables entered as predictors, determined that although the overall regression was significant, $F(8, 204) = 2.70, p = .008, \eta^2 = .10, 95\% C.I. (.01, .14)$, the sexual assault variables did not predict drink spiking victimisation on an individual basis.

Engagement in Protective Behaviours

Correlations amongst the Protective Behaviour factors and drink spiking victimisation are presented in Table 29.

Table 29
Correlations Amongst Protective Behaviour (PB) Factors and Number of Occasions in Which Participant had Experienced Drink Spiking (DS) (N = 791)

<table>
<thead>
<tr>
<th></th>
<th>PB Low Supervision</th>
<th>PB Moderate Supervision</th>
<th>PB High Supervision</th>
<th>DS Victimisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PB Low Supervision</td>
<td>.27***</td>
<td>.30***</td>
<td>.07</td>
<td></td>
</tr>
<tr>
<td>PB Moderate Supervision</td>
<td>.16***</td>
<td>.01</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PB High Supervision</td>
<td></td>
<td></td>
<td>.03</td>
<td></td>
</tr>
<tr>
<td>DS Victimisation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* $p < .05$
** $p < .01$
*** $p < .001$
As the Protective Behaviour factors were not correlated with drink spiking victimisation, it can be assumed that there is no relationship between these variables. For this reason, additional analyses were not undertaken.

**Interrelationship of Factors Associated With Sexual Assault**

As described with regard to perpetration of drink spiking, forward regression analyses were utilised to examine the potential interrelationships of the sexual assault predictors with victimisation of drink spiking. In contrast to the perpetration analyses, the variables regarding previous sexual assault victimisation were included as possible predictors, as the previously-discussed multiple regression analyses did indicate a significant predictive relationship between sexual assault victimisation and drink spiking victimisation. However, the factors pertaining to engagement in protective behaviours were not included in the forward regression analyses, as these factors were neither correlated with, nor predictive of, drink spiking victimisation. Criteria for sample size and inclusion of predictors remained the same as that utilised in the forward regression analyses relating to perpetration. However, because male and female participants were required to complete different items with regard to sexual assault victimisation, separate regression analyses for male and female participants were conducted.

Table 30 presents the forward regression analysis for female participants.
Table 30
Summary of Forward Regression Analysis for Variables Predicting Drink Spiking Victimisation for Female Participants (N = 457)

<table>
<thead>
<tr>
<th>Model</th>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
<th>sr</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Completed Oral Sexual Assault Since age 14</td>
<td>.09</td>
<td>.01</td>
<td>.43***</td>
<td>.43</td>
</tr>
<tr>
<td>2</td>
<td>Completed Oral Sexual Assault Since age 14</td>
<td>.08</td>
<td>.01</td>
<td>.39***</td>
<td>.38</td>
</tr>
<tr>
<td></td>
<td>Attempted Vaginal Sexual Assault in Past 12 Months</td>
<td>.04</td>
<td>.01</td>
<td>.16***</td>
<td>.15</td>
</tr>
<tr>
<td>3</td>
<td>Completed Oral Sexual Assault Since age 14</td>
<td>.09</td>
<td>.01</td>
<td>.46***</td>
<td>.40</td>
</tr>
<tr>
<td></td>
<td>Attempted Vaginal Sexual Assault in Past 12 Months</td>
<td>.06</td>
<td>.01</td>
<td>.23***</td>
<td>.20</td>
</tr>
<tr>
<td></td>
<td>Attempted Oral Sexual Assault Since age 14</td>
<td>-.03</td>
<td>.01</td>
<td>-.18**</td>
<td>-.13</td>
</tr>
<tr>
<td>4</td>
<td>Completed Oral Sexual Assault Since age 14</td>
<td>.09</td>
<td>.01</td>
<td>.44***</td>
<td>.37</td>
</tr>
<tr>
<td></td>
<td>Attempted Vaginal Sexual Assault in Past 12 Months</td>
<td>.06</td>
<td>.01</td>
<td>.21***</td>
<td>.18</td>
</tr>
<tr>
<td></td>
<td>Attempted Oral Sexual Assault Since age 14</td>
<td>-.04</td>
<td>.01</td>
<td>-.18**</td>
<td>-.14</td>
</tr>
<tr>
<td></td>
<td>Driving Without a Licence</td>
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<td>.04</td>
<td>.13**</td>
<td>.13</td>
</tr>
<tr>
<td>5</td>
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<td>.09</td>
<td>.01</td>
<td>.47***</td>
<td>.38</td>
</tr>
<tr>
<td></td>
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<td>.02</td>
<td>.02</td>
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</tr>
<tr>
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<td>.01</td>
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<tr>
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<td>.04</td>
<td>.14**</td>
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<tr>
<td></td>
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<td>.02</td>
<td>.20*</td>
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Table 30 (continued)

<table>
<thead>
<tr>
<th>Model</th>
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<th>$B$</th>
<th>SE $B$</th>
<th>$\beta$</th>
<th>sr</th>
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<td>.01</td>
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<tr>
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<td>.15**</td>
<td>.14</td>
</tr>
<tr>
<td></td>
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<td>.02</td>
<td>.21*</td>
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<tr>
<td></td>
<td>Attempted Anal Sexual Assault in Past 12 Months</td>
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<td>.02</td>
<td>-.11*</td>
<td>-.09</td>
</tr>
</tbody>
</table>

* $p < .05$
** $p < .01$
*** $p < .001$

Note: $R^2 = .258$ for Step 6.
The final model accounted for 25.8% of the variance. Examination of individual predictors indicated that experience of completed sexual assault victimisation since the age of 14 years, which accounted for 14.4% of the variance, was of critical predictive significance, with the remaining factors being of secondary importance. The third and fourth factors in Model 6, experience of attempted oral sexual assault since the age of 14 years and driving without a licence, also maintained notable predictive influence, accounting for 2.7% and 2.0% of the variance, respectively. Finally, experience of attempted oral, vaginal and anal sexual assault in the past 12 months retained a minor effect on drink spiking victimisation. Generally, higher levels of previous sexual assault victimisation were predictive of higher levels of drink spiking victimisation. However, this was not the case with regard to experience of both attempted oral sexual assault since the age of 14 years and attempted anal sexual assault in the past 12 months; in these cases, lower levels of sexual assault victimisation predicted higher levels of drink spiking victimisation.

Table 31 depicts the forward regression analyses for male participants. Examination of the \( R^2 \) values determined that the final model was indeed the most optimal for predicting drink spiking victimisation amongst men – Model 4 accounted for 12.8% of the variance, which was notably more than that accounted for by Models 1, 2 and 3, which accounted for between 5.4% and 10.9% of the variance. Semi-partial correlations indicated that the first variable, experience of completed oral sexual assault since the age of 14 years, had greater utility in predicting victimisation when compared with the remaining three variables, relating to alcohol expectancies and beliefs regarding the influence of alcohol on attraction to others, responsibility in ensuring the safety of others, and interest in sexual activity.
Table 31

Summary of Forward Regression Analysis for Variables Predicting Drink Spiking Victimisation for Male Participants (N = 211)

<table>
<thead>
<tr>
<th>Model</th>
<th>Variable</th>
<th>$B$</th>
<th>SE $B$</th>
<th>$\beta$</th>
<th>sr</th>
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<td>.01</td>
<td>.20**</td>
<td>.20</td>
</tr>
<tr>
<td></td>
<td>Alcohol Expectancy Attractiveness</td>
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<td>.18**</td>
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<td>.01</td>
<td>.22**</td>
<td>.22</td>
</tr>
<tr>
<td></td>
<td>Alcohol Expectancy Attractiveness</td>
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<td>.04</td>
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</tr>
<tr>
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<td>.01</td>
<td>.25***</td>
<td>.24</td>
</tr>
<tr>
<td></td>
<td>Alcohol Expectancy Attractiveness</td>
<td>.11</td>
<td>.04</td>
<td>.16*</td>
<td>.15</td>
</tr>
<tr>
<td></td>
<td>Alcohol Belief Responsibility to Others</td>
<td>.12</td>
<td>.04</td>
<td>.19**</td>
<td>.18</td>
</tr>
<tr>
<td></td>
<td>Alcohol Expectancy Interest in Sexual Activity</td>
<td>-.09</td>
<td>.04</td>
<td>-.14*</td>
<td>-.14</td>
</tr>
</tbody>
</table>

* $p < .05$
** $p < .01$
*** $p < .001$

Note: $R^2 = .128$ for Step 4.
Community perceptions, often fuelled by media coverage and anecdotal evidence, maintain that drink spiking is a mode of facilitating sexual assault against women (Neame, 2004); the concept of recreational drink spiking rarely enters the public consciousness, despite various theorists and researchers contending that this is more frequent than incidents motivated by a wish to commit sexual assault (e.g., Dillon, 2003; Taylor et al., 2004). The following provides empirical clarification of this discrepancy.

Consideration is initially given to the prevalence of both perpetration and victimisation of drink spiking, with the latter also detailing characteristics associated with both typical incidents of drink spiking victimisation and incidents involving sexual assault. It should be noted that several of the findings pertaining to prevalence differ markedly from findings of previous research. In each of these instances, it is likely that such differences are a result of the difficulties associated with determining the prevalence of drink spiking victimisation, and the differing methods of obtaining indications of prevalence utilised in each research study. As mentioned throughout the current study, prevalence is considered as a necessary precursor to the examination of the predictors of spiking perpetration and victimisation; however, findings regarding prevalence should be interpreted with caution, and should not be generalised beyond the study’s specific sample.

Given the association between sexual assault and drink spiking, examination of variables that are often associated with the perpetration and victimisation of sexual assault is then undertaken. These variables include alcohol expectancies, alcohol-related beliefs, engagement in risk-taking behaviours, and previous sexual assault victimisation. In addition, protective behaviours, which are generally
promoted as being effective in avoiding drink spiking victimisation, are assessed. Each of these variables is first considered in terms of prevalence within the sample. The predictive nature of each with regard to perpetration and victimisation of drink spiking is then explored. Finally, implications and limitations are considered, and recommendations for intervention and prevention are made.

Part 1. Prevalence of Perpetration and Victimisation of Drink Spiking

Perpetration of Drink Spiking

Drink spiking involves the adding of a licit or illicit substance to a beverage without the consumer’s knowledge or consent (Moreton, 2003; Neame, 2003; Taylor et al., 2004). Traditionally, drink spiking has been conceptualised as the adding of illegal substances to alcoholic beverages, generally in an attempt to induce sedation in order to commit crime (Beynon et al., 2006; Li, 1999). However, theorists have more recently determined that alcohol may be used as a spiking agent more frequently than prescription or illicit substances are used. For this reason, drink spiking tends to be defined as the adding of additional alcohol or prescription or illegal substances to another beverage without obtaining consent for this act (Taylor et al., 2004). The current study placed such behaviours on a continuum, starting with purchasing and mixing cocktails for another person. Although these behaviours are generally considered to be socially acceptable, each meets the definition of drink spiking, unless the person supplying the beverage outlines and obtains consent for the exact alcoholic content of the drink from the consumer prior to their ingestion. The continuum ended with behaviours that meet the aforementioned traditional definition of drink spiking – adding a substance to an alcoholic or non-alcoholic beverage belonging to another person. The advantage of conceptualising a range of drink spiking behaviours, regardless of their acceptability, is the capacity to explore factors that may be associated with drink spiking perpetration without remaining subject to
cultural norms and expectations of appropriate behaviour. This capacity is critical to the understanding of drink spiking behaviour, since the acceptability of certain behaviours is likely to change according to specific contexts and individual and cultural factors.

In order to address the first research question in the current study, pertaining to the prevalence of drink spiking perpetration in Australia, participants were asked to report on the frequency with which they had undertaken a range of drink spiking behaviours in the past. Just under half (49%) of the current sample had purchased a cocktail for another person on at least one occasion. Slightly less (45%) had mixed a cocktail, and over a quarter (26%) had added alcohol to a punch bowl. Each of these incidents was undertaken without advising the consumer of the alcoholic content of the beverage. Sixteen percent of participants reported at least one experience of adding alcoholic shots to an alcoholic beverage without the consumer’s knowledge, while 6% reported adding alcoholic shots to a non-alcoholic beverage. In contrast, any activity involving the adding of substances to drinks were relatively low in prevalence, with 1% of participants reporting previous experience of adding substances to punch, non-alcoholic beverages, and alcoholic beverages. The prevalence of most behaviours also displayed a downward trend in terms of frequency, with more participants reporting that they had engaged in each behaviour on only one occasion. The behaviours of purchasing and mixing cocktails were the exception to this finding; participants reported undertaking these activities on an average of 2-3 occasions. Clearly, drink spiking behaviours involving the addition of alcohol are more prevalent than those involving the addition of prescription or illicit substances.

An examination of the underlying dimensions relating to the perpetration of drink spiking revealed that there were two fundamental themes – one involving the addition of alcohol to beverages (the Experience of Spiking High Frequency factor) and one involving the
addition of substances to beverages (the Experience of Spiking Low Frequency factor). One exception to this pattern was the behaviour involving the adding of alcohol to non-alcoholic beverages, which loaded on the second, substance-related factor. These factors represent the prevalence with which participants had engaged in the behaviours that formed each underlying dimension. As indicated by the factor labels, activities involving purchasing or mixing cocktails, adding alcohol to punch, or adding alcoholic shots to alcoholic beverages were reported to a notably higher degree than the behaviours that loaded on the second factor. It is possible that these factors therefore reflect perceptions of acceptability and appropriateness of each behaviour – those involving the addition of alcohol appear to be much more accepted, and therefore much more prevalent, than those involving the addition of substances.

**Gender, Age, and Sexual Orientation**

The prevalence of drink spiking perpetration was also examined with regard to gender, age, and sexual orientation, thereby addressing the research question regarding the relationship between these demographic factors and perpetration. Men reported higher frequency of engaging in all types of drink spiking than women. A number of studies have indicated that men are more likely than women to deliberately cause intoxication in others in order to engage in sexual activity (e.g., Koss, 1988; Koss et al., 1987; Larimer et al., 1999). It is therefore viable that drink spiking is being utilised to facilitate engagement in sexual activity or to perpetrate drug-facilitated sexual assault. Such a contention cannot be based solely on gender differences and thus warrants further investigation. The issue is therefore explored further in this thesis when the motivations held by perpetrators of drink spiking are discussed.

Frequency of perpetration was not affected by age or sexual orientation. Again, such relationships are yet to be explored in past
literature, making generalisation difficult; however, in the current study at least, perpetration of drink spiking activities was equally prevalent across all ages within the 18-35 year age, and across sexual orientations.

**Victimisation of Drink Spiking**

The research question pertaining to the prevalence of drink spiking victimisation was explored via investigation of participants’ own experience of drink spiking victimisation, in addition to their accounts of victimisation experienced by people known to participants. A total of 26% of the 805 young Australian adults reported an experience of drink spiking victimisation, with 20% of victims reporting more than one victimisation. This finding cannot be compared directly with the incidence rate obtained by Taylor and colleagues of between 3,000 and 4,000 incidents in Australia over a 12 month period (Taylor et al., 2004), given the current study did not specify a time period for victimisation experiences. However, a number of characteristics relating to victimisation can be evaluated against previous research. Given that similar trends were observed in terms of the characteristics of the incidents reported by drink spiking victims, regardless of whether they had experienced more than one incident, the following focuses on data pertaining to participants’ reports of their “most serious” victimisation.

**Gender, Age, and Sexual Orientation**

The influence of gender, age, and sexual orientation on drink spiking victimisation was assessed in order to address the research question pertaining to the association between these demographic factors and drink spiking victimisation. In the current sample, women, who comprised 72% of all victims, reported significantly higher frequency of victimisation than men. The proportion of female victims was slightly lower than those reported by Taylor and colleagues (2004) for respondents to a telephone hotline (82% of victims were female).
and the rates obtained from police reports (87%) and from clients attending sexual assault centres (96%).

Women also reported greater experience of spiking-related sexual assault in the present study, with 83% of these victims being female. However, implications from these findings should be interpreted with caution – the current study did not specifically ask participants to report their sexual assault experiences. The findings are therefore based on participants’ unprompted reports. It is therefore possible that the prevalence of spiking-related sexual assault obtained in this study is an underestimation of actual incidence. Nevertheless, the rate obtained in the current study is similar to that obtained by Taylor et al. (2004), who reported that 16% of the victims on the telephone hotline were sexually assaulted as a result of the spiking, as were 10% of victims who reported the spiking to police. The prevalence of spiking-related sexual assault victimisation in the current study may therefore be an accurate estimation of actual incidence.

The current study also explored the effects of age and sexual orientation and victimisation. While sexual orientation did not affect likelihood of experiencing drink spiking victimisation, it was determined that older participants reported higher frequency of victimisation, although the maximum age of participants in the current study was 35 years. Previous research has indicated that drink spiking victims are likely to be aged in their 20s or 30s (e.g., Sturman, 2000; Taylor et al., 2004).

The increasing frequency of drink spiking victimisation amongst older participants may suggest that older people are more likely to spike drinks than their younger counterparts; yet, this assertion is contradicted by the abovementioned fact that perpetration was not affected by age, indicating that participants of all ages were equally likely to report an experience of drink spiking perpetration. Thus, the higher frequency of victimisation amongst older participants may
simply be a result of the probability that older people have attended licensed venues more frequently than young people, thereby being exposed to a greater number of occasions during which a drink spiking incident may have occurred.

The lack of relationship between sexual orientation and drink spiking victimisation indicated that people of all orientations are at equal risk of experiencing spiking. This is particularly the case when considered in light of the fact that spiking perpetration was also unaffected by sexual orientation in the present study. Drink spiking clearly pervades many, if not all, sectors of the community.

**Location of Drink Spiking Incidents**

In order to address the research question relating to the characteristics of drink spiking victimisation, victims’ reports of a number of characteristics were examined and compared to findings of previous studies.

Of the drink spiking incidents reported by victims, 79% occurred in licensed venues, particularly nightclubs. This finding is consistent with past research; for example, Quigley (2004) and Sturman (2000) found that more than 50% of all incidents occur in venues, while Taylor and colleagues (2004) determined that between 67% and 75% of the victims in their study had been spiked while attending a licensed venue. However, previous studies have also shown that incidents that result in sexual assault victimisation tend to occur in private parties and houses (Quigley, 2004; Taylor et al., 2004). Findings in the current study add some weight to this observation. Of the participants who reported experiencing sexual assault victimisation as a result of drink spiking, half indicated that they were spiked in a licensed venue, while 39% were spiked while attending a private party or function, with the majority reporting that they did not know most of the people at the function. These rates are somewhat higher than those provided by sexual assault victims as part of the CASA data in Taylor et al.’s (2004) study, which
determined that only 20% of incidents occurred in licensed venues while 33% occurred in the victim’s home.

Thus, although drink spiking incidents were most likely to occur in licensed venues, the prevalence of spiking at private functions increased amongst sexual assault victims when compared to drink spiking victims in general. This was particularly the case when spiking victims were unfamiliar with most attendees at the function at which they were victimised. This finding is supported by sexual assault literature, which has indicated that sexual assaults, particularly those amongst acquaintances, tend to occur during social events such as parties, where perpetrators have access to a number of potential victims (Ullman et al., 1999).

**Gender of Perpetrator and Relationship With Victim**

While a small proportion of victims in the current study indicated that they were spiked by a woman, the vast majority were either unable to identify the gender of their perpetrator, or believed that the perpetrator was male. Just over half of the victims were not aware of who had perpetrated the drink spiking incident in question. A further 22% believed that they were spiked by an unfamiliar person, while 26% were spiked by a friend or acquaintance. This prevalence data is similar to that obtained via Taylor et al.’s (2004) telephone hotline. Yet, based on the data collected by CASA, Taylor et al. (2004) argued that spiking by a known perpetrator was more common amongst victims who experienced spiking-related sexual assault – 61% of the CASA victims reported that the perpetrator was an acquaintance. This finding was not replicated in the current study. Of the sexual assault victims, 39% reported that a stranger spiked their drink, while 22% could not identify the perpetrator. A total of 28% of sexual assault victims indicated that the perpetrator was a friend or acquaintance – a rate similar to the participants who were not sexually assaulted. With regard to gender, the vast majority of sexual assault victims were women who
were perpetrated against by men. However, two women and one man were not aware of the gender of the perpetrator. One man reported that he was assaulted by a woman, while another was assaulted by another man.

It was also found that spiking victims who experienced sexual assault were more likely to be able to identify their perpetrator than victims of spiking in general, and that they were equally likely to be victimised by an acquaintance or friend. This finding contrasts with that of Sturman (2000), who found that 65% of drug-facilitated sexual assault victims were victimised by an acquaintance, while an additional 27% of victims were victimised by a friend. Similarly, Taylor and colleagues (2004) determined that incidents of drink spiking involving sexual assault are more likely to involve perpetrators who are acquainted with their victims than incidents that do not involve sexual assault. Thus, previous findings that sexual assault victims are more likely to be acquainted with the perpetrator were not supported by the current study. This is somewhat explained by the fact that many sexual assault victims were targeted at a private function where they did not know most attendees – although it may appear that victims are acquainted with their perpetrator, given their association with similar social networks, most sexual assault victims did not in fact classify their relationship with the perpetrator as an acquaintanceship.

**Methods of Drink Spiking**

Although drink spiking victimisation cannot be blamed on the victim, a number of behaviours have been identified as potentially contributing to victimisation (Fyfe & Newell, 2002; Neame, 2004; Taylor et al., 2004). Such behaviours as accepting drinks prepared or purchased by others and leaving one’s drink unattended are thought to increase risk for victimisation by providing greater opportunities for perpetrators to engage in a drink spiking act. The current study assessed victims’ beliefs about how the spiking was perpetrated. Over
a quarter of drink spiking victims were unaware of how the act was undertaken. Almost 40% of victims had accepted a drink without watching it being prepared, while almost half of all victims either left their drink unattended or did not supervise their drink. A small minority (5%) believed that they were spiked by venue staff. This prevalence data altered amongst spiking-related sexual assault victims. A lower proportion (35%) had left their drink unattended or failed to supervise their drink, while 50% had accepted a drink without observing its preparation. Again, 5% of victims believed that a member of venue staff had spiked their drink. Only 10% of sexual assault victims were unaware of the method of spiking.

The fact that the majority of victims experienced drink spiking after accepting a drink from another person suggests the presence of premeditation on the part of perpetrators. It is feasible that in these cases, the perpetrator offered to prepare or purchase a beverage for his or her target, with the intention of spiking the drink.

It is also evident that, despite the existence of a number of campaigns encouraging people to engage in behaviours that guard against drink spiking victimisation (for example, the drink spiking fact sheets at http://www.reachout.com.au and http://www.thesource.gov.au/drinkspiking/default.htm), such behaviours were not displayed by victims in the present study. It is possible that these protective strategies are not employed by the community at large. Alternatively, it may be that most people are demonstrating such behaviours, but those who are not utilising protective behaviours are experiencing drink spiking victimisation.

Basis of Victimisation

Unlike previous studies, the present study investigated the symptoms or experiences that led to participants to believe that they had been the victim of drink spiking. Almost 70% of participants reported experiencing intoxication to a degree beyond what would be
expected on the basis of their voluntary alcohol consumption; a similar percentage was obtained for participants experiencing physical symptoms of alcohol or substance ingestion. The fact that these rates totalled more than 100% indicated that a number of participants experienced both intoxication and physiological symptoms. The most prevalent physiological symptoms experienced by drink spiking victims were unconsciousness (22% of drink spiking victims), and vomiting (22%), followed by difficulties with limb coordination (19%). Sexual assault victims reported similar levels of unconsciousness (17%) but higher levels of lack of coordination (28%), dizziness (22%) and a loss of time (11%), whereby victims experienced the passing of several hours without realising that any time had passed.

Most of the symptoms experienced by victims could viably be associated with either alcohol or substance consumption. Given that most toxicological evidence does not support the frequent use of substances in drink spiking (e.g., Chemistry Centre WA, 2004; ElSohly & Salamone, 1999; Hindmarch & Brinkmann, 1999; Hindmarch et al., 2001), it is possible that alcohol is used most frequently as a spiking agent, resulting in both unexpected intoxication and physiological symptoms in victims. However, a small proportion of drink spiking victims displayed symptoms that are more likely to be associated with substance ingestion, rather than alcohol use. Hallucinations, for example, have been associated with ketamine ingestion (Mozayani, 2002), and are unlikely to be present after alcohol ingestion. This suggests that substances are used in at least a minority of drink spiking incidents.

Comparison of drink spiking victims in general and victims who also experienced sexual assault does not highlight any notable differences in the symptoms experienced by each. Both types of victims were equally likely to experience unexpected intoxication and physical symptoms. Interestingly, sexual assault victims reported slightly
lower rates of unconsciousness than general spiking victims, but higher rates of memory loss, loss of time, dizziness, and incoordination. It is therefore possible that perpetrators who hold an intention to commit sexual assault provide victims with alcohol or substances until symptoms that facilitate easy manipulation and control are reached. Such symptoms may allow the perpetrator to remove their victim from the venue at which the spiking occurred, and to undertake an assault with a victim who is somewhat conscious, but unable to resist. In contrast, victims who reach a point of unconsciousness, particularly if such a state is attained at a public venue, are likely to attract attention from friends or venue staff, potentially making the perpetrator’s removal of the victim from the venue, and consequent assault, difficult.

The prevalence of unexpected intoxication amongst drink spiking victims raised a number of issues. It is possible that voluntary alcohol consumption induced unexpected levels of intoxication in participants, leading them to believe that they were spiked when symptoms were in fact a result of intentional consumption. Such unexpected symptoms may be experienced after consuming alcohol on an empty stomach (Goldberg, 2003), ingesting unfamiliar alcoholic beverages, or quickly consuming beverages of relatively high alcohol content. For example, ready-to-drink beverages, also known as alcopops, consist of a distilled spirit mixed with flavoured carbonated water; these beverages generally contain higher alcohol content than beer or wine (Drug Info Clearinghouse, 2006), but may be consumed quickly as a result of the pleasant taste. In addition, distilled spirits mixed with carbonated water are absorbed more quickly than other alcoholic beverages, resulting in higher levels of intoxication (Goldberg, 2003). The possibility of alleged victims actually experiencing self-imposed symptoms has been contended by researchers investigating toxicological evidence of samples provided by drink spiking victims (e.g., Chemistry Centre WA, 2004).
However, it is also possible that participants who reported drink spiking victimisation were indeed forced to ingest additional alcohol or substances without their consent. According to the 2004 National Drug Strategy Household Survey, 48% of Australian men and 35% of Australian women aged over 14 years consume alcohol on a weekly basis (Australian Institute of Health and Welfare, 2005). It can therefore be assumed that most Australian adults are familiar with the ways in which alcohol consumption typically affects them, and are thus capable of making reasonably accurate judgements regarding effects that do not coincide with expectations based on the amount of alcohol consumed. It is therefore probable that participants who reported drink spiking victimisation did actually experience non-consensual alcohol or substance consumption.

**Outcomes of Victimisation**

In examining the after events of drink spiking, the current study requested that victims indicate with whom they left the venue at which the incident occurred. A number of participants reported that they attended hospital (4% of victims) or were sexually assaulted (9% of victims) after the spiking. As mentioned previously, because these responses were not prompted, this prevalence may be underestimated. The majority of victims (61%) in the current study reported that they left the venue with friends, while a smaller proportion left alone (15%) or with a stranger (12%). Such circumstances altered notably amongst spiking-related sexual assault victims. A total of 44% of such victims reported leaving the venue with a stranger and 11% left alone, while 22% left with friends.

These findings coincided with those regarding the victim’s relationship with the perpetrator, as discussed above. In cases of drink spiking in general, participants were most likely to remain unaware of the perpetrator’s identity and to avoid any further victimisation. On the contrary, victims of spiking-related sexual assault were, in the majority
of cases, more likely to report that they could identify that the perpetrator was a stranger and that they left the venue at which the spiking occurred with a stranger. This provides strong support for the argument that drink spiking for the purposes of committing sexual assault is more often perpetrated by people who are unfamiliar to their victims than by friends or acquaintances. However, it is also possible that all instances of spiking are motivated by an intention to engage in sexual activity, whether this is consensual or not, and that the majority of participants avoided sexual victimisation because friends intervened and removed the victim from the scene of the spiking.

**Perceptions of Criminal Victimisation Status**

The current study assessed victims’ perceptions of whether they classified their victimisation as a crime. Two-thirds of victims did believe that they were a victim of crime. This perception was often fuelled by the actual experience of spiking-related sexual assault; however, 5% of victims believed that the forced consumption of substance ingestion was a criminal act. A further 8% of participants believed that the spiking was criminal as a result of the potential outcomes – these participants believed that the possibility of being “raped” or “killed” was sufficient to deem the act as a crime. These perceptions have not been explored in any previous research. However, it appears that participants were not aware of the legal issues relating to drink spiking. Although the majority of victims believed that they were a victim of crime, more than half of these did not specify the type of criminalisation that they had suffered. This may have been due to participant fatigue; however, it may also suggest that victims felt that a crime had been committed but were unaware of the legalities of drink spiking. This latter contention is supported by the fact that 5% of victims stated that drink spiking was a crime, whereas, in current Australian law, this is not the case (MCCOC, 2007).
**Reporting of Victimisation**

Finally, the prevalence of drink spiking victims’ reporting of their experience to authorities was explored. Despite most victims believing that their experience was a criminal incident, 85% of victims did not report the incident to any authority, although 100% of spiking-related sexual assault victims reported their experiences. Taylor and colleagues (2004) obtained a somewhat higher overall reporting rate of between 35% and 40%; however, they reported that only 15% of spiking-related sexual assaults were reported.

The lack of reporting amongst drink spiking victims may be affected by a number of factors. It is possible that victims did not recognise or acknowledge the drink spiking incident as an inappropriate and potentially dangerous act. Previous research has indicated that this lack of acknowledgement amongst sexual assault victims is common amongst those who do not report their victimisation (Kahn & Andreoli Mathie, 2000). Moreover, a lack of acknowledgement is more likely amongst sexual assault victims who were victimised while alcohol- or substance-affected (Kahn et al., 2003). The lack of surety amongst people who have voluntarily consumed alcohol or substances prior to being spiked may therefore lead to a lack of conviction in participants’ drink spiking victimisation. Although 85% of victims believed that they were a victim of crime, which appears to contradict this assertion, many may have felt that their account would not be convincing if it was reported to authorities.

It is also possible that since the majority of incidents did not result in additional victimisation, such as sexual assault, victims may also have felt that the incident did not warrant police attention. In addition, regardless of whether additional victimisation was experienced, participants may have felt that reporting was futile. As mentioned, more than half of all victims were unable to identify their perpetrator. Additionally, 12% suffered memory loss. Victims may have therefore
been of the belief that providing imprecise details of the incident was unlikely to result in a conviction, and therefore chose not to undertake the reporting process.

With regard to reporting the incident to authorities other than the police, victims may have been unaware of appropriate services to which spiking incidents can be reported, such as venues and support agencies. These options have been a particular focus of recent drink spiking awareness campaigns, many of which have included contact details for relevant services (e.g., Munro, 2003). This suggests that there was a lack of such knowledge in the Australian community, which may be reflected in participants’ lack of reporting in the current study.

In circumstances where drink spiking victims are aware of appropriate reporting agencies and wish to report the incident, they may still be dissuaded from reporting as a result of feelings of shame, stupidity and vulnerability after the incident. Although participants were not specifically questioned about their experience of such emotions, many voluntarily reported that they experienced these feelings. In addition, previous research has indicated that such feelings are not uncommon amongst drink spiking victims (e.g., Foote et al., 2004; Taylor et al., 2004), and that the experience of these feelings reduces the likelihood of reporting of such criminal victimisation as sexual assault (Foote et al., 2004; Karabatsos, 1997; King, 1992). In much the same way, victims of drink spiking who experience adverse emotional reactions may be unlikely to report their victimisation to relevant authorities.

It is also possible that victims fear being dismissed, blamed or negatively judged as a result of the drink spiking incident. Several studies have investigated such tendencies in sexual assault victims. For example, Norris and Cubbins (1992) indicated that people are less likely to define a hypothetical rape situation as sexual assault if both participants were alcohol-affected. If a drink spiking victim had
consumed alcohol or substances prior to the spiking occurring, they may fear that authorities will not recognise the severity of the incident, and victims may therefore opt to refrain from reporting their experience. In addition, a number of studies have determined that people are likely to alter their attributions of blame in situations involving sexual assault after involved parties have consumed alcohol. In such cases, people are likely to place less blame on perpetrators and more blame on victims than they would if the subjects were not alcohol-affected (Abbey et al., 1996; Cameron & Stritzke, 2003; Stormo et al., 1997; Ullman & Filipas, 2001). It is feasible that similar attitudes are held with regard to victims of drink spiking, given the likelihood of spiking occurring after the victim’s voluntary alcohol or substance consumption. Thus, in deciding whether to report, drink spiking victims may be concerned that authorities will attribute the victimisation to the victim’s own alcohol or substance consumption.

It is therefore possible that the lack of reporting amongst drink spiking victims in general is fuelled by a lack of acknowledgement or conviction in their account of events, or victims believing that the act did not warrant police attention or that such attention would not lead to a criminal conviction. Participants may also be unaware of how to access relevant services, or may fear experiencing blame and judgement after reporting. However, the data relating to sexual assault victims contrasts these assertions, in addition to the contentions of previous research. In the current study, all spiking-related sexual assault victims reported their experiences to authorities. This may indicate that the desire for a criminal conviction is stronger than fears of dismissal, judgement and blame when a sexual assault is experienced. This may also reflect the fact that sexual assault victims were able to identify the perpetrator of the spiking in the majority of cases, whereas spiking victims in general were not.
**Revictimisation**

A total of 5% of drink spiking victims, and 22% of spiking-related sexual assault victims, reported experiencing drink spiking victimisation more than once. In cases where victims had experienced multiple incidents of drink spiking victimisations, details for up to two additional occurrences were provided. Examination of the trends across the three occurrences indicated that general patterns of drink spiking were similar. However, some minor differences across occasions were evident. Victims did not report any physical symptoms on the third occasion, but indicated a predominance of unexpected intoxication, which may again support the contention that the use of alcohol as a spiking agent is more frequent than the use of substances. Participants also reported that they were victimised at a licensed venue, as opposed to a private function, more frequently on the second and third occasion than on the first occasion. Frequency of lack of supervision of beverages on the part of victims also increased notably on the third victimisation, compared with the previous two victimisations. A trend towards more high risk behaviours was also notable during the third occasion. For example, victims reported a lower frequency of leaving the venue with friends, and a greater prevalence of victims experiencing more potentially risky after events, including leaving with a stranger and leaving alone. Perpetration by a stranger was also more frequent during the third occasion, as opposed to the most serious and second occasions.

The conclusions regarding the characteristics of drink spiking victimisations generally apply to all victimisations, regardless of whether participants had experienced a single victimisation or multiple victimisations. This may suggest that victims were not able to predict, and therefore avoid, victimisation, even if they had already experienced victimisation. It may also suggest that victims did not alter their behaviours or reactions to spiking after experiencing it, thus
resulting in similar circumstances arising again. Whether participants were unaware of how to adjust their behaviour, or were simply unwilling to do so, remains unclear. Alternatively, particular factors, which are out of victims’ control, may place certain people at greater risk of experiencing drink spiking than others.

**Victimisation of Others**

Participants also reported on drink spiking victimisations reported by people known to them. Ninety-six men and 431 women, in addition to the 207 self-identified victims, had experienced a drink spiking episode. Participants were able to report on a drink spiking incident at which they were present and one at which they were not present. The prevalence of each characteristic of the incidents remained similar, regardless of whether the participant was present at the scene. Moreover, these characteristics were comparable to those provided by participants who had detailed their own victimisation. It therefore appears that, as abovementioned, general conclusions about typical characteristics of drink spiking victimisation can be made. Additionally, the similarity of findings across self-reports and reports made by others suggests that witnesses may be a reliable method of obtaining information about victimisation.

**Part 2. Prevalence of Factors Associated with Perpetration and Victimisation of Drink Spiking**

In order to accurately address the remaining research questions in the present study, it was first necessary to identify the prevalence of each of the variables that were potentially related to perpetration and victimisation of drink spiking. The following is a discussion of the findings in relation to these rates, while Part 3 of this chapter discusses the relationship between these variables and both perpetration and victimisation of drink spiking.
Alcohol Expectancies and Alcohol Beliefs

Analysis of the underlying thematic structure of items that comprised the alcohol expectancies section of the SES showed that two dimensions could be meaningfully identified. One theme comprised of expectations that met the definition of alcohol expectancies established in previous research. The second theme included beliefs about behaviours that may be engaged in by people who are alcohol-affected. As such, the dimensions were conceptualised as alcohol expectancies, which included five factors, and alcohol beliefs, which incorporated four factors. These factors were labelled the Alcohol Expectancy of Aggressive and Antisocial Tendencies, the Alcohol Expectancy of Confidence and Sexual orientation, the Alcohol Expectancy of Attractiveness, the Alcohol Expectancy of Interest in Sexual Activity, the Alcohol Expectancy of Engaging in Casual Sexual Activity, the Alcohol Belief of Deliberate Intoxication of Others, the Alcohol Belief of Responsibility to Self, the Alcohol Belief of Responsibility to Others, and the Alcohol Belief of Allowing Friends to Leave Venues.

A number of the Alcohol Expectancy variables were not dissimilar to those identified by previous researchers. Given this part of the SES was based somewhat of the Alcohol Expectancy Questionnaire (AEQ; Brown, 1980) and the Drinking Expectancy Questionnaire (DEQ; Lee, 2003), it is not surprising that some comparable factors were identified. The present study ascertained a factor relating to aggressive and antisocial tendencies, which was similar to the AEQ’s Factor 4 (Brown et al., 1980) and the DEQ’s Negative Consequences factor (Lee et al., 2003). However, while both Brown et al. (1980) and Lee and colleagues (2003) identified separate factors relating to increased confidence and sexual interest, the current study revealed one overarching factor encompassing both confidence and sexual responsiveness. Thus, participants in the present study responded to
items relating to sexual orientation and confidence in a similar way, indicating that these concepts were interrelated. It is possible that participants perceived confidence and capacity to effectively interact with potential sexual partners to be analogous.

**Alcohol Expectancies**

With regard to expectations of the impact of alcohol consumption on participants’ behaviour, a large proportion of participants (76%-85%) believed that alcohol increased their own confidence and extravert behaviours, while approximately half of the sample believed that alcohol consumption improved their abilities in initiating and responding to sexual interactions. In addition, most participants believed that alcohol increased their interest in partaking in sexual activity, and that alcohol-affected people are more interested in engaging in casual sexual activity than people who are not alcohol-affected. These findings were consistent with the findings of a number of previous studies. For example, despite the fact that alcohol decreases physiological sexual arousal and sexual functioning, both men and women generally report higher levels of arousal after alcohol consumption than when sober (George & Norris, 1991; Norris et al., 1994). Various studies have also indicated that people expect others to be more interested in engaging in sexual activity when alcohol-affected than when sober (e.g., Abbey & Hamish, 1995; Corcoran & Thomas, 1991; Rickert & Wiemann, 1998). The current study also indicated that expectations regarding interest in casual sexual activity were also affected by sexual orientation, with heterosexual participants reporting stronger such beliefs than bisexual participants. Gender and age did not affect these expectancies.

Despite participants indicating that they generally believed that alcohol consumption is suggestive of sexual interest in general, most participants did not believe that a person consuming alcohol or accepting a drink was indicative of sexual attraction toward the
participant. However, notable proportions of the sample did hold these beliefs. For example, 38% of participants believed that a man accepting a drink was indicative of his sexual attraction towards the participant, while 18% believed that this was the case with a woman accepting a drink. Further, 27% of participants reported that men are more attracted to them after alcohol consumption. In addition, women reported stronger beliefs than men that others are more attracted to them after accepting or consuming alcohol. Such beliefs were also stronger amongst participants who were unsure of their sexual orientation than heterosexual participants. Age did not significantly impact upon the strength of these expectancies.

Previous research has produced somewhat contradictory findings in terms of people’s expectations of the effects of alcohol consumption on aggressive and antisocial behaviours. While it was originally believed that alcohol causes these behaviours (Bushman & Cooper, 1990), recent findings have determined that higher alcohol consumption is indeed related to increased aggressive behaviours, but only when relatively low doses are consumed (Abbey et al., 2003). Although amount of alcohol was not explored in the current study, findings indicated that the impact of alcohol on aggressive and antisocial behaviours is somewhat variable. While the majority did not believe that alcohol ingestion resulted in increased aggressive or antisocial behaviours, a notable proportion of the sample did – 28% indicated that alcohol resulted in greater aggression, 16% reported increased violent behaviours after alcohol consumption, and 18% stated that alcohol hindered their ability to interact effectively with others. These expectancies were not affected by gender, age, or sexual orientation.

**Alcohol Beliefs**

Examination of the prevalence of participants’ alcohol-related beliefs indicated that most young adults held strong beliefs regarding
ensuring the safety of themselves and others while alcohol-affected and particularly when intoxicated. However, a proportion of participants did not hold these beliefs. For example, one-third of participants believed that deliberately forcing intoxication on others was humorous, although this decreased when participants reported on the acceptability of causing others to become more intoxicated than the other person thought, which 10% of the sample endorsed. These beliefs were also affected by both gender and age. Men reported stronger beliefs than women in the acceptability of causing intoxication in others, while younger participants reported greater such beliefs than older participants, although participants’ average responses ranged between moderate disagreement and slight agreement with the acceptability of this behaviour.

In addition, beliefs regarding ensuring the safety of others altered somewhat according to the gender of others. Between 84% and 92% of participants believed that they held responsibility in ensuring the safety of an intoxicated friend, but this decreased slightly when participants considered the degree of responsibility that others held for themselves – between 70% and 80% of participants maintained that others held sole responsibility for themselves, regardless of their behaviour. Participants believed more strongly in ensuring the safety of female friends than male friends. Moreover, the majority of participants believed that allowing a male friend to leave a licensed venue or function with an unfamiliar person was acceptable, unless the man was clearly intoxicated. In contrast, participants believed that allowing a female friend to leave with an unfamiliar woman was acceptable, unless the friend was intoxicated. Forty-six percent of the sample believed that allowing a female friend to leave a venue with an unfamiliar man was acceptable. These beliefs hold a number of implications for drink spiking victimisation. Although it is apparent that the majority of drink spiking incidents are perpetrated by men against
female victims, instances of male and female perpetration against both male and female victims have been reported, with at least two of these incidents resulting in the perpetration of sexual assault in the current study. It is therefore essential that young adults remain vigilant about friends leaving venues with any unfamiliar people, regardless of gender. Unless victims display overt signs of intoxication that are recognised by friends, it is possible that they may be removed from relatively safe environments without any intervention or assistance by friends.

Beliefs regarding ensuring the safety of others during occasions when alcohol is consumed were also affected by participants’ gender, age and sexual orientation. Compared to male participants, women reported higher agreement with the acceptability of allowing friends to leave venues with unfamiliar people or when intoxicated; women also reported stronger beliefs that others were responsible for their own safety than men did. Older participants reported stronger beliefs than younger participants with regard to others being responsible for their own safety, but, contrastingly, were less likely than younger participants to agree with allowing friends to leave venues alone or with unfamiliar people. Finally, heterosexual participants believed more strongly in the acceptability of allowing friends to leave venues than gay and lesbian participants. Again, these beliefs have not been explored in past literature.

**Participation in Risk-Taking Activities**

Analysis conducted on the risk-taking section of the SES revealed that participants’ engagement in such behaviours could be meaningfully conceptualised in terms of six underlying themes: Engagement in Positive Behaviours, Engagement in Casual Sexual Activity, Driving Without a Licence, Use of Alcohol and Related Behaviours, Use of Stimulants and Hallucinogens, and Use of Narcotics and Sedatives.
Participants frequently engaged in positive behaviours, including maintaining a healthy diet and practising safe sex. However, a notably high level of risk-taking behaviours was also present, particularly in the realms of alcohol use, substance use, and casual sexual activity. With regard to alcohol use, 71% of participants indicated that they drink alcohol daily, while 81% of the sample consumed alcohol at least weekly. More than half of the sample reported that they drank to intoxication on a daily basis, while 70% did so at least weekly. Indeed, participants’ overall rates of alcohol use were higher than those pertaining to the abovementioned positive behaviours.

The use of stimulants and hallucinogens was also relatively common within the present sample. Apart from tobacco, marijuana use was the most prevalent substance used – 31% of participants reported use at least weekly, and 20% indicated that they engaged in daily use. Over a fifth of the sample reported at least weekly ecstasy use, with 13% reporting daily use; similarly, 16% indicated that they used amphetamine at least weekly, and 10% reported daily use.

Comparatively, the use of narcotics and sedatives was relatively infrequent. Between 1% and 2% of participants reported at least weekly use of solvents, Rohypnol, GHB and heroin. GHB was used on a daily basis by 2% of the sample.

The rates of alcohol and substance use were notably higher in the current study than those obtained in previous research. The 2004-2005 National Health Survey determined that 62% of adults had consumed alcohol during the previous week (Australian Bureau of Statistics, 2006), while the 2004 National Drug Strategy Household Survey reported that 50% of Australian adults consumed alcohol at least weekly, while 9% consumed alcohol daily (Australian Institute of Health and Welfare, 2005). This study also indicated that 4.6% of Australian adults used marijuana on a weekly basis, 0.5% used ecstasy, and 0.6% used amphetamine or methamphetamine. Although the
researchers did not investigate specific non-medical use of Rohypnol, they reported that 1.2% of adults used pharmaceutical medications, while 0.1% used heroin, methadone or opioids, and 0.1% used inhalants. GHB use was not prevalent enough to determine a weekly use rate, but 0.1% of adults reported use in the 12 months prior to data collection (Australian Institute of Health and Welfare, 2005). These lower rates may be a result of the national surveys investigating the consumption of all Australians over the age of 14, as opposed to the 18-35 year old age bracket investigated by the present study – it appears that young adults consume alcohol and use substances at a higher rate than people in both older and younger age groups, resulting in higher prevalence rates. Although the 2004 National Drug Strategy Household Survey did not provide prevalence data for the age bracket used by the current study, it was evident that 20-29 year old adults used all substances more frequently than both younger and older participants. Nonetheless, the prevalence of use of all substances within the age bracket remained lower than that provided by the 18-35 year old participants in the present study. The differing prevalence data in the present study, compared with studies conducted three years ago, may be a reflection of recent increases in use of illicit substances such as ecstasy (Lindsay, 2005).

Over half of the sample reported frequent engagement in casual sexual activity. Fourteen percent of participants reported at least weekly engagement in sexual activity with a partner that they did not previously know, while 15% indicated that they engaged in sexual activity with multiple partners on at least a weekly basis.

Between 3% and 11% of the sample reported at least weekly engagement in behaviours relating to high-risk motor vehicle travel. However, these behaviours were not theoretically or statistically related to considerations of drink spiking.
Participation in a number of risk-taking activities was affected by participant gender and age. On each of the risk-taking factors, listed above, men reported higher rates of participation than women. Men also reported less frequent engagement in the positive behaviours of maintaining a healthy diet and practising safe sex than women. Although older participants reported greater frequency of such positive behaviours as maintaining a healthy diet and practising safe sex than younger participants, they also displayed more frequent use of stimulant and hallucinogenic substances and engagement in casual sexual activity.

Engagement in risk-taking activities was also related to participants’ sexual orientation. Gay and lesbian participants reported more frequent use of all types of substances, except alcohol, than heterosexual participants. Use of stimulants and hallucinogens was also greater amongst bisexual participants than heterosexual participants. Although such findings have not been specifically explored in previous research, it is evident that illicit substance use is generally prevalent within the gay and lesbian population in Australia (McGuigan, 2004).

The frequency with which both alcohol and substances were consumed by the present sample is concerning, particularly given the high rates of intoxication. It has been posited that intoxication significantly increases the risk of falls, accidents, and the display of violent behaviour, and that high levels of daily alcohol consumption increases risk of physical health problems (National Health and Medical Research Council, 2003). In addition, it has been demonstrated that most substance users do not use one substance at a time (Australian Institute of Health and Welfare, 2005; Degenhardt, 2004; Degenhardt et al., 2003; White, 2004). Multiple substance use was not explored in the current study, but based on previous findings, it could be assumed that participants frequently engaged in the simultaneous use of numerous substances. It also appears that both substance use and causal sexual
activity are prevalent in the gay and lesbian community. It is feasible that a culture of alcohol consumption, substance use, and intoxication is present amongst young Australian adults. This contention was supported by Lindsay (2005), who observed and interviewed young adults at licensed venues in Melbourne, Australia, concluding that “…alcohol was a key part of the social fabric…” (p. 4).

**Sexual Assault Victimisation**

The current study investigated the prevalence of drug-facilitated sexual assault. Participants reported on their experience of oral, vaginal, and anal sexual assault after voluntarily consuming alcohol or substances, being pressured to use alcohol or substances, or unknowingly consuming alcohol or substances. In each case, sexual assault was indicated by participants’ incapacity to consent to the sexual act. Participants reported on both attempted and completed victimisations experienced in the 12 months prior to data collection and since the age of 14 years. Because the study focussed solely on alcohol- and substance-involved assault, it should be noted that the following prevalence data is likely to be an underestimation of general sexual assault victimisation within the sample.

Oral sexual assaults were most prevalent in the present study, with more than a quarter of the sample reported experiencing such an assault when they were too intoxicated to consent since the age of 14 years. A quarter of female participants also reported experiencing vaginal sexual assault under these circumstances. Across each category of sexual assault, circumstances involving voluntary alcohol consumption, leading to an incapacity to provide consent to sexual activity, were more prevalent than being pressured to consume alcohol or substances or unknowingly undertaking such consumption. This finding supports previous arguments that drug-facilitated sexual assault occurs more frequently than drink spiking (Neame, 2003).
Such prevalence data is difficult to compare to previous studies, as specific categories of circumstances pertaining to assault have not been previously explored. However, Koss, Gidycz, and Wisniewski (1987) determined that 12% and 8% of their sample of American college students had experienced attempted and completed drug-facilitated sexual assaults, respectively. Similar prevalence data for completed drug-facilitated assaults was also obtained by Testa, Livingston, Vanzile-Tamsen, and Frone (2003). Prevalence in the current study was therefore notably higher than those obtained in previous research.

The frequency with which participants had experienced multiple sexual victimisations was also explored. It was apparent that revictimisation of drug-facilitated sexual assault was more prevalent than single victimisations in reports of victimisation since the age of 14. However, this was not the case for assaults experienced in the 12 months prior to data collection, in which single victimisations were generally more prevalent. Regardless of the time period, revictimisation was more frequent than single victimisations of assaults involving the ingestion of substances, as opposed to alcohol. In addition, revictimisation of drink spiking victimisation since the age of 14 years was more common than single spiking victimisations amongst participants.

Although research specifically assessing revictimisation of drug-facilitated sexual assault is yet to be conducted, previous studies of victims of multiple sexual assaults generally indicate that difficulties in risk recognition (Wilson et al., 1999) or avoidance of risk (Buddie & Parks, 2003; Parks et al., 1998; Testa & Livingston, 2000) contribute to the experience of multiple sexual assault victimisations. It is possible that such difficulties are exacerbated by alcohol and substance consumption, resulting in victims remaining incapable of identifying and avoiding situations in which a sexual assault may occur. It appears that substance consumption may contribute to such difficulties to a
greater degree than alcohol consumption, as indicated by the higher revictimisation rates evident amongst substance-related assaults. It is also plausible that young people who consume illicit substances engage in higher levels of risk-taking behaviours than non-users, which may result in a more frequent degree of exposure to potentially dangerous situations. The prevalence of revictimisation of spiking-related sexual assault may indicate that victims of drink spiking and victims of sexual assault display similar impairments with regard to recognition and avoidance of high-risk circumstances.

Again, the impact of gender, age, and sexual orientation on sexual assault victimisation was assessed. Despite previous research indicating that women experience drug-facilitated sexual assault more frequently than men (e.g., Koss et al., 1987), the current study did not find any difference in the number of oral or anal sexual assaults experienced by male and female participants. However, vaginal sexual assaults were obviously not included in this analysis, as these assaults were only by female participants. It is therefore possible that both men and women are equally vulnerable to victimisation of oral and anal drug-facilitated sexual assault, and that differences in the prevalence of sexual assault can be attributed to women’s additional experience of vaginal sexual assault. Further clarification on this issue may have been obtained via exploration of men’s experience of forced penile penetration, as perpetrated by women, while alcohol- or substance-affected – almost two-thirds of women reported undertaking such acts in a study of American college students (Anderson, 1998).

With regard to female participants, older participants reported a greater number of victimisations of completed oral sexual assault, attempted vaginal sexual assault, and completed vaginal sexual assault since the age of 14 than younger participants. Older male participants reported greater frequency of victimisation of anal drug-
facilitated sexual assault, both in the 12 months prior to data collection and since the age of 14 years.

Previous studies have cited prevalence rates of 17% (Stermac et al., 1996) and 20% (Krahe et al., 2000) for male victimisation of homosexual drug-facilitated sexual assault. Other studies have determined that gay, lesbian and bisexual people experience higher rates of lifetime victimisation of sexual assault than heterosexual participants (Duncan, 1990). The impact of sexual orientation on sexual assault victimisation was therefore explored in the current study. In terms of completed oral sexual assault, bisexual participants reported significantly higher victimisation than heterosexual participants, both since the age of 14 and during the past 12 months. Bisexual participants also reported higher rates of vaginal assault victimisation since the age of 14 than heterosexual participants. Anal sexual assaults, both attempted and completed, since the age of 14, were more frequent amongst gay and lesbian participants than heterosexual participants. Frequencies of all other types of sexual assault did not differ according to sexual orientation.

**Engagement in Protective Behaviours**

A number of campaigns that aim to reduce the frequency of drink spiking victimisation promote the use of protective behaviours (Fyfe & Newell, 2002; Neame, 2004; Taylor et al., 2004); however, very little empirical evidence regarding young adults’ use of such strategies has been undertaken. Participants in the current study reported on the frequency with which they utilise a range of these behaviours, including accepting drinks from familiar and unfamiliar persons, leaving one’s drink unattended and holding one’s drink. These behaviours were grouped, via factor analysis, into Low Supervisory, Moderate Supervisory, and High Supervisory behaviours.

Participants generally reported frequent engagement in moderate and high supervisory behaviours, and infrequent
Engagement in low supervisory behaviours. More than half of the sample reported that they held their drinks often, most of the time, or always, including when they were dancing, while similar proportions of the sample reported leaving drinks with someone they trust. However, only a small proportion reported consistent engagement in moderate or high supervisory behaviours on all social occasions. For example, 16% of the sample indicated that they always hold their drink, suggesting that the remaining 84% may at times leave their drink in a position that is not within their visual gaze. In addition, although the majority of participants did not engage in low supervisory behaviours to a significant degree, a proportion displayed relatively frequent engagement in these behaviours. Almost a third of the sample reported accepting drinks from acquaintances often, most of the time, or always, while 7% accepted drinks from strangers. Moreover, between 10% and 19% of participants reported frequently leaving their drink unattended, in positions where direct observation would not necessarily be possible.

Engagement in protective behaviours was also affected by participants’ gender and age; however, sexual orientation did not impact upon frequency of engagement. Interestingly, men displayed significantly higher levels of both low and high supervisory behaviours than women, while older participants reported greater engagement in all levels of supervisory behaviours than younger participants. It therefore appears that when both men and older participants are engaging in a particular supervisory behaviour, they are engaging more frequently than their female or younger counterparts, respectively.

Gender differences in the display of protective behaviours may be a result of natural behavioural tendencies of men and women in environments where alcohol is consumed. For example, it is possible that, when attending licensed venues or social events, men gather
and engage in conversation while consuming alcohol, while women are more likely to dance. This may naturally result in men more frequently holding their drinks, while women may put their drinks down, leaving them unattended, to facilitate greater movement. Such behaviours may explain men’s greater engagement in high supervision of their drinks. However, men may also display greater levels of low supervisory behaviours through such activities as “buying rounds” or “shouts”, during which a person is provided with a drink by each member of his/her social group. The preparation of drinks in “rounds” is unlikely to be monitored closely by each drinker, leaving drinkers potentially subject to drink spiking. Such behaviours have been noted to be common in Melbourne (Lindsay, 2005), and may be more prevalent amongst males, resulting in greater levels of low supervisory behaviours. It is also feasible that men generally do not consider themselves to be potential victims of drink spiking, due to the manner in which media coverage emphasises female victims, and therefore engage in low supervisory behaviours more frequently than women.

Although the majority of participants actively and frequently engaged in behaviours that are considered to be protective against drink spiking victimisation, a proportion of the sample did not. Perhaps of particular concern are behaviours relating to accepting drinks and leaving drinks with acquaintances and trusted people. While this is likely to be a safe and appropriate behaviour in many circumstances, the numerous studies indicating the incidence of acquaintance-perpetrated sexual assault are grounds for concern.

**Part 3. Predictors of Perpetration and Victimisation of Drink Spiking**

At the present time, the variables that predict drink spiking perpetration and victimisation are completely unknown. Given the association between drink spiking and sexual assault, as established via anecdotal evidence and, to a degree, previous empirical research, the current study identified the factors that predict sexual assault
perpetration and victimisation. In addition to assessing perpetrators’ motivations for committing drink spiking, the following explores the association between sexual assault predictors and the perpetration and victimisation of drink spiking.

**Perpetration of Drink Spiking**

As aforementioned, specific drink spiking behaviours were categorised into two factors – the first comprised purchasing or mixing cocktails, adding alcohol to punch, and adding alcoholic shots to alcoholic beverages, while the second factor included adding alcoholic shots to non-alcoholic beverages and adding substances to any type of beverage. Participants reported on the number of times that they had engaged in each behaviour, ranging from “never” to “more than 20 times”. Each variable was therefore assessed in terms of its relationship to the frequency with which participants engaged in each of these factors. The following discussion explores the research questions pertaining to the relationship between drink spiking perpetration and alcohol expectancies, participation in risk-taking behaviours, previous sexual assault victimisation, and use of protective behaviours. The findings relevant to the research question regarding the motivations held by perpetrators are then discussed.

**Alcohol Expectancies**

Participants’ engagement in purchasing or mixing cocktails, adding alcohol to punch, or adding alcoholic shots to alcoholic beverages was predicted by the expectation that the consumption or acceptance of alcohol by other people demonstrates their sexual attraction to others, and, to a lesser degree, participants’ expectations that alcohol results in others being interested in engaging in casual sexual activity. Participants’ expectation that alcohol increases their own confidence and sexual responsiveness while decreasing aggressive and antisocial behaviours also predicted a higher level of engagement in these types of drink spiking.
The expectation that alcohol consumption increases others’ interest in engaging in casual sexual activity was the strongest predictor of drink spiking with substances, or adding alcoholic shots to non-alcoholic beverages. Frequency of these behaviours was also predicted, to a weaker degree, by the expectation that alcohol does not increase aggressive or antisocial tendencies, and that the consumption or acceptance of alcohol by other people demonstrates their sexual attraction to others.

Thus, all types of drink spiking behaviours were generally predicted by expectancies that alcohol consumption in others increases their sexual attraction and interest in sexual activity. It is also possible that because perpetrators do not expect alcohol to induce aggressive and antisocial behaviours in themselves, they also do not expect alcohol to induce such behaviours in others. This suggests that spiking perpetrators expect their targets to become sociable and interested in engaging in sexual interactions, without displaying any aggressive or violent behaviours.

The predictive nature of alcohol expectancies in the perpetration of drink spiking indicates that drink spiking may indeed be utilised as a method of committing sexual assault. Previous research had demonstrated a strong relationship between the expectation that alcohol consumption increases sexual interest and responsiveness and the perpetration of sexual assault. For example, Abbey and colleagues (Abbey et al., 2001; Abbey et al., 1996) determined that sexual assault perpetrators held this expectancy to a stronger degree than non-perpetrators. In addition, these expectancies have been found to be stronger amongst perpetrators who have committed a sexual assault while under the influence of alcohol, as opposed to perpetrators who were not alcohol-affected at the time of the assault (Zawacki et al., 2003). Due to the correlation between alcohol expectancies held by perpetrators of both drink spiking and sexual assault, it is feasible that
drink spiking is simply a new *modus operandi* utilised by sexual assault perpetrators, particularly those who consume alcohol prior to committing assault. This possibility was proposed by Foote and colleagues (2004), who maintained that drink spiking was a newly evolved technique of committing sexual assault while reducing potential consequences or punishment. It is also possible that, because drink spiking perpetrators did not expect alcohol to increase aggression, they actually expected less resistance by victims who have been spiked. It is also possible that alcohol expectancies fuel perpetration of spiking-related sexual assault via the presence of alcohol myopia (Steele & Josephs, 1990), which maintains that alcohol-affected people focus on cues that meet their expectations and wants, unless contradictory cues are highly salient (MacDonald et al., 2000). If a drink spiking perpetrator expects the spiking act to result in increased sexual interest on the part of his/her target, he/she is likely to focus on cues that meet this expectation and to disregard cues that contradict his/her desires. This may lead to the perpetration of sexual assault if the victim does not provide clear and direct refusals in response to any sexual advances made by the perpetrators (Abbey et al., 1998; Abbey et al., 1996; Gross et al., 2001).

It is also plausible that drink spiking perpetrators expect alcohol to increase their target’s interest in engaging in consensual sexual activity. Perpetrators may not have intended to deliberately induce symptoms that facilitate the commission of sexual assault, such as sedation or coma. Rather, they may have undertaken drink spiking behaviours in the hope of engaging in sexual activity. Previous research examining the behaviours of men and women in licensed venues in Melbourne determined that a significant amount of overt sexual interaction occurred in such venues (Lindsay, 2005). It is quite possible that interacting with potential sexual partners forms a major part of attendance at licensed venues and social events. Although
sexual interactions may be facilitated by natural human processes, which are potentially encouraged by alcohol consumption, a proportion of people may be utilising drink spiking to enhance their likelihood of experiencing sexual interactions.

**Alcohol Beliefs**

Participants’ beliefs regarding causing intoxication in others were predictive of all types of drink spiking – participants who held stronger beliefs reported greater frequency of purchasing or mixing cocktails, adding alcohol to punch, adding alcoholic shots to alcoholic and non-alcoholic beverages, and all substance-related drink spiking. In addition, purchasing or mixing cocktails, adding alcohol to punch, and adding alcoholic shots to alcoholic beverages were less frequent amongst participants who maintained some responsibility in ensuring the safety of others during occasions when alcohol is consumed.

The influence of such beliefs on drink spiking perpetration may indicate that spiking is utilised for the purposes of having fun or sharing experiences, rather than to commit any form of crime, and that such purposes are prioritised over issues of safety by perpetrators. The predictive nature of these beliefs, in combination with the prevalence of use of alcohol, rather than substances, as a spiking agent, suggests that alcohol may be utilised to provide others with the experience of any of the emotional states that are believed to motivate alcohol use, including decreased adverse emotions, increased positive emotions, and improved social situations (Kuntsche et al., 2005). It is also possible that underlying such motivations are widely-held social expectations regarding alcohol use. As posited by Ahlstrom and Osterberg (2005), alcohol consumption is generally a social behaviour that is learnt from members of one’s community; behaviours associated with alcohol consumption are therefore often fuelled by the behaviours of one’s peers when alcohol-affected. As such, alcohol consumption has been associated with a number of meanings that are thought to be
reinforced by peer groups, including masculinity, belonging, and freedom, while intoxication is often perceived as a humorous state that bonds people together (Paton-Simpson, 1996). In this context, providing alcohol to an unknown consumer may be viewed as an altruistic act that facilitates fun and friendship.

The sharing of positive experiences as a driving motivation for perpetrators of drink spiking implies that the offender has the best interests of his or her target in mind. It is feasible that the perpetrator holds a positive view of intoxication and has experienced beneficial aspects of alcohol consumption. It is therefore plausible that such a person also holds strong beliefs regarding causing deliberate intoxication in others, believing this to be a generous, altruistic act. However, a person that is acting in the interests of their target is also likely to be considerate of any risk that their target faces; that is, the perpetrator would logically hold some interest in ensuring the safety of their target. This is not the case amongst drink spiking perpetrators, who were less likely than non-perpetrators to display consideration for others’ safety. It is therefore possible that a desire to have fun is more predominant amongst perpetrators than a motivation of sharing positive experiences. A person who holds strong beliefs regarding causing intoxication, but weak beliefs regarding ensuring safety, is likely to gain enjoyment from spiking another person’s drink, regardless of the consequences. This was supported by both Dillon (2003) and Taylor and colleagues (2004), who concluded that the majority of drink spiking incidents are likely to be “pranks”, whereby the perpetrator wishes to be entertained by observing the effects of the spiking agent on the victim. It is likely that such perpetrators believe these effects to be humorous and amusing.

**Participation in Risk-Taking Activities**

A range of risk-taking behaviours were related to participants’ perpetration of drink spiking behaviours. Participants’ engagement in
purchasing or mixing cocktails, adding alcohol to punch, or adding alcoholic shots to alcoholic drinks, was most strongly predicted by their engagement in alcohol-related behaviours, such as drinking alcohol, getting drunk and travelling in a motor vehicle with a driver over the legal BAC limit. These spiking behaviours were also predicted by participants use of narcotics and sedatives, and by their engagement in casual sexual activity, although these predictors maintained a relatively weak impact upon spiking perpetration. In each case, greater frequency of engagement in risk-taking behaviours predicted greater experience of drink spiking perpetration.

In contrast, the frequency with which participants had either added alcoholic shots to non-alcoholic beverages or added substances to drinks was only predicted by participants’ own use of narcotics and sedatives. This relationship was very strong, and again, higher levels of risk-taking predicted more spiking perpetration.

The relationship between alcohol and substance use and the perpetration of drink spiking is therefore much stronger than that between engagement in casual sexual activity and spiking perpetration. This suggests that drink spiking is not used to facilitate sexual interaction, but is a behaviour associated with substance consumption. Drink spiking may therefore be a natural result of a culture in which alcohol consumption and intoxication are considered to be appropriate, positive and enjoyable experiences. It is also possible that that this culture translates to substance use amongst the minority of Australians who use illicit substances. In much the same way as alcohol features as a natural facet of the social experience amongst young adults (Lindsay, 2005; Moreton, 2003), substance use is quite possibly a common aspect of socialising amongst the substance-using population.

As a result of this acceptance of alcohol and, in certain social circles, substance consumption, it is likely that perpetrators are
engaging in spiking behaviours in an attempt to either share a positive experience with others, or to observe the effects of the spiking agent on the victim, as mentioned above. Both alcohol and substances have been associated with positive effects, including the enhancement or inducement of such positive emotions as contentment, relaxation and euphoria (Galloway et al., 1997; Harris et al., 2002; Jansen, 2004; Kuntsche et al., 2005; Smith & Temple, 2000), and a decrease in negative feelings (Kuntsche et al., 2005). Such effects provide understandable motives for perpetrators of drink spiking who wish to share a positive experience with their target. However, both alcohol and substances have also been associated with symptoms that may create an entertaining or humorous situation for a spiking perpetrator. For example, the increase in physical movement and talkativeness induced by amphetamine (Solowij et al., 1992) or the trance-like state caused by ketamine (Jansen, 2000; Mozayani, 2002) may be amusing for perpetrators, particularly with regard to how the affected person reacts to these symptoms. Regardless, the stronger influence of alcohol and substance use on perpetration, compared with engagement in sexual activity, suggests that drink spiking is most predominantly motivated by recreational purposes.

**Sexual Assault Victimisation**

The relationship between participants’ experience of sexual assault victimisation and their perpetration of drink spiking was assessed. As victimisation has been associated with later perpetration of sexual assault (e.g., Hickson et al., 1994), it was theorised that previous assault victimisation may predict drink spiking perpetration committed for the specific purpose of committing sexual assault. However, previous sexual assault victimisation was not predictive of spiking perpetration. This does not exclude the possibility that spiking is used to commit sexual assault, but indicates that previous sexual assault victimisation is not a risk factor for perpetration of drink spiking.
Engagement in Protective Behaviours

At present, protective behaviours such as refraining from accepting drinks from unknown persons and supervising one’s drink are considered to be appropriate strategies in avoiding drink spiking victimisation. It can therefore be assumed that such behaviours are displayed by people who are aware of the dangers of drink spiking and are therefore vigilant in their attempts to avoid victimisation. In turn, it could be presumed that such people are unlikely to undertake drink spiking behaviours against others. Unless vindictive motives are present, a person is unlikely to inflict an experience on another person that they do not wish to experience themselves. The relationship between engagement in protective behaviours and drink spiking perpetration was therefore explored.

Perpetration of all types of drink spiking was predicted by participants’ display of such low supervisory behaviours as accepting drinks from strangers and acquaintances and leaving their drink unattended. A particularly strong predictive relationship was evident with regard to purchasing or mixing cocktails, adding alcohol to punch, or adding alcoholic shots to alcoholic beverages. In contrast, high supervisory behaviours, such as holding one’s drink at all times, was predictive of low frequency, or no experience, of adding alcoholic shots to non-alcoholic beverages or adding substances to drinks. It is therefore clear that perpetrators of drink spiking are not acting in a way that indicates concern for potentially falling prey to drink spiking themselves. It may be that such people are unaware of the existence or prevalence of drink spiking, or that they do not believe themselves to be a likely victim.

Motivations for Perpetration of Drink Spiking

Theorists have proposed that drink spiking is generally motivated by a desire to share an experience, to play a prank on the consumer, to facilitate consensual engagement in sexual activity, or to commit
sexual assault. However, specific motivations are yet to be empirically explored. Participants in the current study who had undertaken a drink spiking activity were asked to report the motivations that were held at the time of perpetration. Rather than utilising the above perpetration factors, three categories of drink spiking behaviours were investigated: purchasing or mixing cocktails or adding alcohol to punch, adding alcoholic shots to alcoholic or non-alcoholic beverages, and adding substances to alcoholic or non-alcoholic beverages. Specific motivations relating to sexual assault were not included; rather, participants were able to indicate whether they were motivated by a desire to engage in sexual activity. In addition, motivations relating to sharing experiences, having fun, creating positive impressions, gaining revenge, and improving social situations were included.

Participants were predominantly motivated to engage in all drink spiking behaviours by a desire to have fun, particularly in relation to adding alcoholic shots or substances to drinks – over 40% of the motivations reported for these activities were focussed on fun, and this motivation was significantly higher than all remaining motivations in each category of spiking behaviours. Drink spiking behaviours were also motivated by a wish to deliberately cause intoxication in the consumer of the spiked drink. This was particularly prevalent amongst perpetrators who used substances as a spiking agent – 21% reported that their spiking was motivated by wanting to get someone drunk. It is feasible that this motivation is linked to those pertaining to the sharing of a positive experience, a motivation that was also relatively prevalent across the spiking behaviours. This may suggest that participants perceived substance consumption and intoxication as being a positive experience; thus, causing intoxication in others may be perceived as a generous act. However, it is also possible that this motivation relates to that discussed by Dillon (2003) and Taylor and colleagues (2004) – perpetrators may indeed be adding alcohol or substances as a
practical joke, creating what is believed to be a humorous scenario for onlookers as the consumer experiences the effects of the added substance. The motivations of fun and deliberately causing intoxication may therefore be related.

Perpetrators did not report a desire to gain control of the consumer of the spiked drink; however, many were motivated by the potential for increased likelihood of engaging in sexual activity as a result of their spiking behaviour. Again, this was particularly the case for participants who had added substances to beverages belonging to others. These motivations suggest that desires for control and humiliation, which are often associated with the perpetration of sexual assault, are not prevalent in instances of drink spiking. Rather, perpetrators of the range of spiking behaviours are at least somewhat motivated by a desire to engage in sexual activity with the spiking victim. It is therefore highly possible that drink spiking is not utilised for the purposes of committing sexual assault, but for facilitating what perpetrators believe to be consensual sexual activity; this may be exacerbated by the lack of knowledge of issues relating to consent amongst young people. It is also possible that, when substances are used in drink spiking incidents, substances that are more likely to induce effects that facilitate sexual interaction are used, as opposed to those that can cause unconsciousness and memory loss. Such substances as MDMA and amphetamine may not only enhance social interaction but may also increase sexual desire and sexual satisfaction (Zemishlany, Aizenberg, & Weizman, 2001). Other substances, such as GHB and ketamine, are more likely to induce negative effects, particularly when mixed with alcohol (Munir, 2004). Although these substances have traditionally been associated with drink spiking (Hindmarch et al., 2001), they may actually only be used in a small minority of incidents.

Thus, the prevalence of each motivation indicated that spiking was predominantly perpetrated in order to have fun, to cause
intoxication in others, or to facilitate sexual activity. Specific examination of the motivations for each category of perpetration provides greater insight into these possibilities. The five most prevalent motivations for each category of spiking behaviours featured both motivations of fun and increasing the likelihood of engaging in sexual activity. However, the motivation of fun was significantly more prevalent than all other motivations for behaviours involving purchasing or mixing cocktails, adding alcohol to punch and adding alcoholic shots to beverages. Nonetheless, sex-related motivations were significantly higher than remaining motivations for behaviours involving purchasing or mixing cocktails and adding alcohol to punch, and motivations of fun and enhancing sexual opportunities were equally prevalent for behaviours involving adding substances to beverages. Thus, it appears that while alcohol-involved spiking may be predominantly motivated by a desire to have fun, with a secondary motivation of increasing engagement in sexual activity, substance-related spiking seems to be equally motivated by both fun and potential sexual interactions.

**Willingness to Perpetrate Drink Spiking**

Finally, investigation of perpetrators’ past experience of drink spiking and their willingness to engage in drink spiking in the future was undertaken. Participants’ previous engagement in purchasing or mixing cocktails or adding alcoholic shots to alcoholic beverages was strongly predictive of willingness to undertake such behaviours in the future. Similarly, engagement in adding alcoholic shots to non-alcoholic beverages or engaging in substance-related spiking in the past was strongly predictive of willingness to engage in these behaviours. Such engagement was also predictive, albeit weakly, of willingness to engage in purchasing or mixing cocktails or adding alcoholic shots to alcoholic beverages. In all cases, more frequent past
engagement predicted greater willingness to undertake these behaviours.

The association between past perpetration and willingness to perpetrate is possibly fuelled by a lack of negative consequences resulting from past experiences. Again, unless malicious motives are involved, perpetrators’ willingness is likely to be hindered by witnessing adverse symptoms in their targets as a result of spiking, or by their own experience of punishment, whether this is through vilification by peers or legal consequences. It is probable that drink spiking perpetration does not result in any social or legal sanctions for perpetrators, particularly if spiking behaviours are considered to be a normal and appropriate facet of social situations. Such beliefs are unlikely to prompt chastisement by peers or reporting by victims, thus resulting in continued perpetration.

**Model of Perpetration**

Examination of the categories of predictors with regard to perpetration of drink spiking generally indicated that spiking was motivated for the purposes of creating fun, humorous scenarios, or to encourage consensual sexual activity. However, investigation of the strongest predictors of perpetration yielded similar findings, although a greater emphasis on sharing positive experiences was evident.

Perpetration of behaviours involving purchasing or mixing cocktails, adding alcohol to punch, or adding alcoholic shots to alcoholic drinks was predominantly predicted by beliefs regarding the acceptability of causing intoxication in others – participants reporting stronger beliefs also reported higher levels of engagement in these spiking behaviours. The model of such perpetration also indicated that engagement in low supervisory protective behaviours was predictive. Similarly, perpetrators’ substance use, engagement in casual sexual activity, and expectations regarding the effect of alcohol on confidence and capacity to successfully engage in sexual interactions,
were also amongst the strongest predictors of perpetration, albeit to a lesser degree than the aforementioned factors.

The combination of these predictors appears to indicate that perpetration using alcohol as a spiking agent exists within a culture of risk-taking behaviours. Perpetrators may perceive risk-taking as a positive experience, as they clearly demonstrated their own engagement in behaviours supporting this view, particularly with regard to substance use and engagement in casual sexual activity. Such perpetrators also displayed high-risk behaviours with regard to drink spiking, including leaving drinks unattended and accepting drinks from unknown persons. The slightly stronger predictive nature of perpetrators’ beliefs regarding causing intoxication in others may indicate that not only do perpetrators perceive their own risk-taking behaviours to be positive, but they also perceive the sharing of such experiences to be appropriate. It is viable that perpetrators function within peer groups and social situations involving alcohol and substance use and engagement in casual sexual activity, and that spiking is utilised to facilitate these activities in what is believed to be a positive manner.

Use of such substances as glue/solvents, Rohypnol, heroin, and GHB was critical in the prediction of perpetration of spiking using substances, or adding alcoholic shots to non-alcoholic drinks. Again, this supports the view that perpetrators are engaging in drink spiking for the purposes of sharing experiences – users of substances appear to be utilising spiking to promote substance use amongst their peers. Protective behaviours were also related to this type of spiking perpetration, as was a belief that it is acceptable to cause intoxication in others. To a more minor degree, perpetrators’ use of stimulants and hallucinogens, including marijuana, ecstasy, speed and cocaine, was predictive of perpetration, with higher levels of use predicting higher levels of spiking. Interestingly, lower levels of engagement in alcohol
use and alcohol-related behaviours predicted higher levels of perpetration. Thus, it appears that spiking with substances existed purely within the domain of substance use – the sharing of experiences involving alcohol was distinctly absent, in contrast to the sharing of experiences involving substances. Finally, perpetrators maintained an expectation that alcohol does not result in increased aggression or antisocial behaviour. Again, it appears that spiking with substances and adding alcoholic shots to non-alcoholic drinks was predominantly motivated by a wish to encourage one’s own risk-taking behaviours and attitudes in others, and beliefs that enforcing this risk-taking amongst others is appropriate and unlikely to result in adverse outcomes, such as aggression. It remains unclear as to whether perpetrators were predominantly motivated by altruistic actions relating to sharing positive experiences, or whether they wished to create a humorous situation by inducing substance-related effects in their victims – beliefs regarding causing intoxication in others featured aspects of both acceptability and humour. Although this clearly warrants further investigation, it is evident that perpetrators perceived their actions to be appropriate and acceptable.

Motivations relating to promoting sexual activity were nonexistent within the model pertaining to adding substances to drinks, although this contrasts with perpetrators’ own admission of their motivations, as previously discussed. This raises questions as to the relationship between drink spiking and sexual assault. In situations where a substance, as opposed to alcohol, is used as a spiking agent, it is possible that a sexual assault can ensue as a result of a form of myopia and misperception. The theory of alcohol myopia posited that alcohol consumption forces the consumer to focus on salient cues and reduces one’s capacity to consider the consequences of their behaviours (Abbey, 2002). It is possible that substance consumption results in similar outcomes, dulling one’s ability to attend to complex
stimuli and instead enforcing a focus on cues that remain in accordance with one’s expectations about a particular scenario. Thus, while the use of a substance may indicate premeditated intention to commit a sexual assault by means of drink spiking, this behaviour may also be perpetrated as a result of perpetrators’ beliefs regarding the acceptability of sharing their experience of substance use and a motivation of promoting consensual sexual activity. An unintended sexual assault may occur if a substance-related myopia is present – a perpetrator’s own substance use may cause them to focus on cues that confirm their expectation of willingness to engage in sexual activity, and an assault may occur as a result of the lack of clear communication of the lack of consent.

**Victimisation of Drink Spiking**

The following investigates the research questions pertaining to the relationship between drink spiking victimisation and alcohol expectancies, participation in risk-taking behaviours, previous sexual assault victimisation, and use of protective behaviours.

**Alcohol Expectancies**

Participants’ expectancies regarding the effect of alcohol on confidence and sexual responsiveness were predictive of drink spiking victimisation. Stronger expectations that alcohol consumption increases these behaviours predicted higher levels of victimisation. Although the relationship between expectancies and drink spiking has not previously been investigated, a degree of speculation is possible. It is possible that the expectation of increased confidence and improved sexual interactions actually results in behaviours reflecting these attributes in people who have consumed alcohol. The relationship between expected and actual behaviour has been proposed with regard to perpetrators of sexual assault – researchers have proposed that perpetrators behave in a sexually aggressive way after consuming alcohol.
alcohol because they expect alcohol to increase both sexual and aggressive tendencies (e.g., Abbey et al., 1996; Seto & Barbaree, 1995).

Thus, due to their alcohol expectancy, spiking victims may behave in a more overtly confident and sexual manner than non-victims, and may therefore present in a way that is misinterpreted by others as being interested in engaging in sexual activity. Several studies have indicated that misperception frequently occurs in social situations (e.g., Abbey & Harnish, 1995; Abbey et al., 1996; Anderson & Aymami, 1993), particularly between men and women. Misperception also appears to be particularly prevalent in situations involving alcohol consumption (Abbey et al., 2002), and has been associated with the perpetration of sexual assault (e.g., Abbey et al., 1998; Abbey et al., 2001; Koss, 1988; Muehlenhard & Linton, 1987). Thus, participants’ expectation that alcohol increases confidence and sexual responsiveness, and consequent confident and overtly sexual behaviour, may inadvertently communicate sexual interest to a drink spiking perpetrator. A perpetrator may then engage in drink spiking in an attempt to further enhance their victim’s confidence and sexual responsiveness, thereby increasing the perpetrator’s likelihood of engaging in sexual activity with his/her target. Such victimisation may result in consensual sexual activity, if the victim is able to consent despite being alcohol- or substance-affected. Alternatively, if the perpetrator expects to engage in sexual activity but the victim does not comply with these expectations, a sexual assault may result. Given that this alcohol expectancy predicted drink spiking victimisation but such victimisation did not necessarily result in sexual activity, consensual or otherwise, it is possible that intentions to engage in sexual activity on the part of perpetrators were thwarted by the victim being cared for by friends, which was often the case in the current study.
Alcohol Beliefs

Alcohol beliefs regarding deliberate intoxication of others or ensuring the safety of oneself or others were not predictive of drink spiking victimisation, although, as aforementioned, they were predictive of drink spiking perpetration. The implications of these findings are somewhat contradictory. The influence of beliefs regarding the acceptability of deliberately causing intoxication reveals the existence of an underlying culture in which such behaviours are considered to be appropriate, regardless of whether they are achieved via drink spiking or other means. However, if such a culture exists, it would be unlikely that perpetrators and victims of spiking remain distinct, with separate beliefs. Rather, it would be probable that beliefs would be similar within social circles, and that most, if not all, members of the social group would function as both perpetrators and victims at different times, with different members of the social group targeted as victims on different occasions. The fact that similar beliefs are not held by perpetrators and victims in the current study may therefore imply that such a culture does not exist amongst young Australian adults.

However, the differing beliefs held by perpetrators and victims may also indicate that the reports of victimisation in the current study do not accurately reflect the extent of drink spiking victimisation. It is possible that the majority of those who reported victimisation did so because they experienced severe reactions to the spiking or because they hypothesised that the spiking was intended to facilitate criminal victimisation, such as sexual assault. It is possible that members of the community who have been spiked for recreational purposes do not identify themselves as drink spiking victims, and therefore did not report on their victimisation. In contrast, the SES questioned participants about their engagement in specific drink spiking behaviours, but did not require participants to label themselves as perpetrators, as was the
case with victims. Thus, it is feasible that the study has identified a range of perpetrators but has only identified a sub-sample of victims. This discrepancy would explain the differences in beliefs held by perpetrators and victims – had all victims been identified, beliefs may have been similar.

The fact that beliefs regarding safety did not predict drink spiking victimisation indicates that young adults’ behaviours may not impact significantly on their likelihood of experiencing victimisation. People who hold strong beliefs regarding ensuring the safety of themselves and others are likely to employ strategies that increase safety, and therefore logically decrease drink spiking victimisation. It is therefore possible that such beliefs either do not inform protective behaviours, or that protective behaviours do not affect the likelihood of experiencing victimisation.

**Participation in Risk-Taking Activities**

Participants’ engagement in risk-taking behaviours was generally not predictive of drink spiking victimisation, with the exception of use of stimulants and hallucinogens. Greater use of such substances as tobacco, marijuana, ecstasy, amphetamine, and cocaine predicted higher levels of drink spiking victimisation. Interestingly, alcohol consumption and frequency of intoxication were not predictive of drink spiking victimisation. It is therefore evident that drink spiking and sexual assault victimisation are distinct issues. Previous research has determined that both alcohol and substance use are strong predictors of sexual assault victimisation. A number of studies have determined that between 30% and 50% of female sexual assault victims consumed alcohol prior to their victimisation (Abbey et al., 1996; Campbell et al., 2004; Koss & Dinero, 1989; Ullman et al., 1999); similar rates have been obtained amongst male victims (King, 1992; Stermac et al., 1996). Substance use has also been associated with sexual assault victimisation (Kilpatrick et al., 1997).
It therefore appears that while alcohol and substance use are risk factors for experiencing sexual assault victimisation, they do not necessarily function in this way with regard to drink spiking victimisation. In particular, patterns of alcohol consumption and frequency of intoxication do not place people at greater risk of being targeted by perpetrators of drink spiking. It may be that, because alcohol consumption is so ubiquitous amongst young Australians, and drink spiking victimisation occurs amongst a relative minority, it is not possible to determine differences in frequency of consumption and intoxication between victims and non-victims. The high prevalence of alcohol consumption in the current sample indicated that most participants consumed alcohol frequently; thus, differentiating drink spiking victims on this basis is likely to be difficult.

Greater risk of drink spiking victimisation is evident amongst users of recreational substances. Several explanations for this relationship are possible. First, although substance use is becoming more prevalent at bars and nightclubs (Lindsay, 2005), recreational substance use typically occurs at raves and dance parties (Solowij, 1993). Because common perceptions of drink spiking involve victimisation occurring at licensed venues, people who attend raves and parties may be less likely to engage in protective behaviours, thereby increasing their risk of experiencing drink spiking victimisation. This may be exacerbated by the usual effects of such substances as ecstasy and amphetamine. Because these substances induce prosocial attitudes and behaviours, such as talkativeness, tolerance, and intimacy with others (Solowij et al., 1992; White, 2004), users may be of the belief that others would not wish to cause harm. This may particularly be the case if users are surrounded by peers who are also using substances that induce these sensations. An environment of positive regard for others is unlikely to induce concern regarding the possible experience of drink spiking victimisation. As a result, engagement in protective behaviours may be
less frequent amongst people using substances. Engagement in protective behaviours may also be affected by difficulties in concentration and decision-making that can be caused by ecstasy use in particular (Vollenweider et al., 1998). It is also possible, given the potential dangers of substance use, that users are simply willing to take greater risks than non-users. A proclivity for risk-taking may translate to less frequent display of protective behaviours, resulting in more frequent drink spiking victimisation than non-users.

Frequency of engagement in casual sexual activity was also not predictive of spiking victimisation. Thus, as discussed above, although victims may hold expectations that alcohol increases their ability to interact successfully with potential sexual partners, and this in turn may result in more confident sexual behaviours, victims’ actual casual sexual activity does not determine their likelihood of victimisation.

**Sexual Assault Victimisation**

Previous sexual assault victimisation was not predictive of drink spiking victimisation amongst male participants in the current sample. However, for female participants, frequency of drink spiking victimisation was significantly predicted by frequency of attempted oral sexual assault since the age of 14 years, frequency of attempted oral sexual assault in the previous 12 months, and frequency of completed oral sexual assault since the age of 14 years. In all cases, higher frequency of previous sexual assault was predictive of higher frequency of drink spiking victimisation. Previous experiences of acts that meet the definition of rape, including vaginal and anal penetration, were not predictive of drink spiking victimisation.

Although experience of rape was not predictive of spiking victimisation, the association between oral sexual assault and drink spiking victimisation raises the possibility that both sexual assault and drink spiking victims display similar patterns with regard to recognition and avoidance of risk. Several studies have concluded that previous
sexual assault victimisation is a significant risk factor for future victimisation (e.g., Gidycz et al., 1993; Himelein, 1995; Messman-Moore et al., 2000; Sanders & Moore, 1999). As abovementioned, it has been contended that women who have experienced sexual assault either display impaired abilities in recognising risk (Wilson et al., 1999), or are able to recognise risk but are unable to avoid situations that place them at high risk of experiencing victimisation (Buddie & Parks, 2003; Parks et al., 1998; Testa & Livingston, 2000). In addition, previously victimised women are more likely than non-victimised women to use indirect and ineffective forms of resistance when they do recognise that they are at risk of experiencing a sexual assault (Norris et al., 1996). Furthermore, risk recognition and response to risk are both adversely affected by alcohol consumption (Abbey, 2002). Thus, it is possible that women who have experienced oral sexual assault and drink spiking victimisation demonstrate impairments in recognising and acting upon risk, and that such difficulties are particularly notable during incidents of drink spiking, where voluntary alcohol consumption is likely.

Nonetheless, the lack of association between rape and drink spiking victimisation provides further complications. Previous research has indicated that past sexual assault victimisation is predictive of future victimisation, but this relationship is not evident with regard to rape (Combs-Lane & Smith, 2002). In contrast, while previous sexual assault is predictive of less severe types of sexual assault occurring in the future, it is not necessarily predictive of future experience of rape. This suggests that the predictors of sexual assault victimisation and drink spiking victimisation are similar, at least with regard to revictimisation. It is possible that women who are sexually assaulted, but not raped, on multiple occasions display similar risk recognition and resistance methods to women who experience drink spiking victimisation.
Engagement in Protective Behaviours

Despite the presence of a range of campaigns that promote the use of protective behaviours to avoid drink spiking victimisation (for example, CASA House’s “Keep an eye open” campaign and the Northern Territory “Watch your drink, yourself and your friend” campaign), such protective behaviours were not correlated with, nor predictive of, victimisation. Victims’ reports of the characteristics of drink spiking incidents revealed that drink spiking can be perpetrated by both acquainted and unfamiliar persons, and can occur after victims accept drinks without watching them being prepared or leave drinks unattended. For these reasons, in conceptualising an indication of participants’ overall engagement in protective behaviours, all items apart from holding one’s drink at all times and taking one’s drink when dancing were considered to be a risk behaviour. Such risk behaviours included accepting drinks from strangers and acquaintances, leaving drinks with trusted people, and leaving drinks unattended or outside of the consumer’s line of sight. Victimisation of drink spiking was evident amongst more than a quarter of participants who behaved in a protective manner often, most of the time or always. Furthermore, although only six participants behaved protectively all of the time, one participant had experienced drink spiking victimisation on two occasions.

Several possible explanations for the lack of relationship between protective behaviours and drink spiking victimisation are available. First, it is possible that participants responded with a social desirability bias. Participants may have been aware of appropriate protective behaviours and therefore may have reported that they engaged in such behaviours more frequently than they actually do, thereby providing an inaccurate picture of the frequency of protective behaviours, which may have resulted in a non-significant relationship with spiking victimisation. However, the fact that there was significant
diversity in participants’ responses suggests that a strong social desirability effect was not a dominant feature of responses across the survey. In addition, the study was designed in such a way that both anonymity of participants and confidentiality of their responses were ensured. Participants were advised of this prior to their completion of the SES. It is therefore probable that participants felt secure in providing honest responses.

Second, a timeframe for participants’ commencement of engaging in protective behaviours was not obtained. Thus, participants may have assumed such behaviours after experiencing drink spiking victimisation. This would explain the fact that participants who reported high engagement in protective behaviours also experienced drink spiking victimisation.

Third, it is possible that the protective behaviours assessed in the present study are not protective enough to reduce the likelihood of experiencing drink spiking victimisation. Even if a person purchases their own drinks and holds their drink at all times, opportunities for a perpetrators to spike a drink may still arise. For example, a victim may rest a drink on a bar while paying bar staff, or turn their head while holding a drink. Although such behaviours are seemingly insignificant, each provides an opportunity for a substance to be placed in the drink without the consumer noticing.

Finally, it may be that, in complete contradiction to common sense and community perceptions, engagement in protective behaviours simply does not relate to drink spiking victimisation. Drink spiking victimisation may indeed be entirely random and unpredictable (Taylor et al., 2004), and perpetrators may identify their target and await an opportunity to undertake the drink spiking act. This places significant responsibility on both perpetrators and the community at large to reduce the occurrence of drink spiking.
Model of Victimisation

In determining the strongest predictors of drink spiking victimisation, two separate investigations were undertaken, given that male and female participants responded to independent items regarding their previous experience of drug-facilitated sexual assault victimisation. This experience was of critical importance in predicting victimisation for women, but was slightly less significant in predicting male victimisation of drink spiking.

Drink spiking victimisation amongst young women was essentially predicted by participants’ experience of oral sexual assault victimisation since the age of 14 years. To a lesser degree, higher levels of victimisation were predicted by higher levels of experience of attempted oral and vaginal sexual assault over the past year. In contrast, lower levels of attempted oral sexual assault since the age of 14 years and attempted anal sexual assault in the past 12 months predicted higher levels of drink spiking victimisation. Also involved in the predictive model was victims’ undertaking of behaviours involving unlicensed driving, with higher levels of such engagement predicting higher levels of spiking victimisation.

It is therefore evident that sexual assault victimisation and drink spiking victimisation are very similar in nature, and are potentially interrelated. As previously discussed, it is possible that victims of both experiences display similar fallibilities with regard to risk recognition and avoidance of risk. This would also explain the relationship between driving without a licence and victimisation – again, it seems that victims of drink spiking either consciously or unconsciously undertake activities that place them at risk of harm. However, the reasons for the contradictory impact of sexual assault victimisation on drink spiking victimisation are unclear; if difficulties with risk recognition are the only explanation for this relationship, it would be expected that higher levels of all types of sexual assault victimisation would predict higher levels of
drink spiking victimisation. Further investigation of this discrepancy is warranted, although some speculation is possible. It is possible that the relationship between attempted anal sexual assault in the past 12 months and spiking victimisation was adversely affected by the relatively small proportion of participants who reported experiencing such an assault recently. Alternatively, it is possible that this type of assault was considered to be more severe than other types of assault by participants, and therefore resulted in greater display of safety precautions, resulting in lower levels of drink spiking victimisation. This hypothesis could viably be applied to the negative relationship between attempted oral sexual assault since the age of 14 and drink spiking victimisation; however, this would not explain the positive relationship between completed oral sexual assault since the age of 14 and spiking victimisation. Clearly, more detailed exploration of these issues is required; nonetheless, the current findings clearly indicate an association between drug-facilitated sexual assault and drink spiking victimisation for women.

Drink spiking victimisation amongst men was again related to previous drug-facilitated sexual assault victimisation, with experience of oral sexual assault since the age of 14 years being the strongest predictor. As discussed, this was also the case for female spiking victims; however, in contrast to women, male victimisation was also predicted by a range of beliefs and expectations regarding the effects of alcohol. Specifically, men who held stronger beliefs that others are more attracted to them when alcohol-affected, that they hold responsibility in ensuring the safety of others, and that alcohol causes their interest in engaging in sexual activity to increase, demonstrated higher levels of drink spiking victimisation. It is apparent that victimisation of drug-facilitated sexual assault and drink spiking are conceptually similar for men, and it is again likely that men who have experienced both types of victimisation display difficulties in
recognising and/or avoiding high-risk situations. However, it is also clear that drink spiking victimisation amongst men is best explained with consideration of alcohol-related beliefs and expectations. It is probable that men who believe that alcohol consumption increases sexual interest and attractiveness also act in an overtly sexual manner when alcohol-affected. This may communicate to drink spiking perpetrators that the victim is interest in engaging in sexual activity, and drink spiking may therefore be used to further encourage such interest. Given that victims believe that they hold responsibility in ensuring the safety of their peers, it is also possible that they believe that their peers will actively ensure their safety. This may result in victims being less aware of potential risks within social situations, and remaining confident that their peers will behave in an appropriate and safe manner.

**Conclusion**

Previous research, both anecdotal and empirical, has utilised information provided by drink spiking victims to determine the nature of perpetration, concluding that spiking is most often undertaken as a prank, in an attempt to create a humorous, fun situation by observing the effects of the spiking agent on the victim. Research has also indicated that, in a minority of cases, drink spiking is motivated by a desire to commit sexual assault (Taylor et al., 2004). The current study is the first to assess these motivations on the basis of reports provided by perpetrators, as opposed to victims. The present study is also the first to identify factors that affect sexual assault perpetration and victimisation and empirically assess the relationship between these factors and perpetration and victimisation of drink spiking.

**Perpetration**

It should first be noted that many of the relationships between each variable and drink spiking perpetration were weak to moderate in strength. This indicates that perpetration cannot be fully predicted
by variables that are typically associated with sexual assault. It also suggests that drink spiking perpetration is not a predictable behaviour, but is subject to a range of individual, contextual and cultural influences. This is particularly the case for behaviours that occur relatively frequently, including purchasing or mixing cocktails, adding alcohol to punch and adding alcoholic shots to alcoholic beverages. In contrast, spiking behaviours involving substances or the adding of alcoholic shots to non-alcoholic behaviours were strongly predicted by a number of variables, indicating the potential for such behaviours to be anticipated.

The current study provided empirical support for the contention that drink spiking is often perpetrated for the purposes of having fun, sharing positive experiences, and creating humorous, entertaining social situations. Such motivations were predominant, particularly when alcohol was used as a spiking agent, and perpetrators held relatively strong beliefs regarding the acceptability of causing intoxication in others but did not maintain responsibility in ensuring the safety of others. Perpetration was also predicted by perpetrators’ own use of alcohol and substances. Each of these factors lends support to the occurrence of drink spiking amongst groups of peers who perceive alcohol consumption, and potentially substance consumption and intoxication, as being positive aspects of social situations. The forcing of such consumption, and the consequent effects, are therefore likely to be perceived not only as acceptable but also as humorous and fun. A model of the strongest predictors of perpetration supported these findings – perpetration appeared to exist within a culture of alcohol and substance use, low levels of engagement in spiking-related protective behaviours, and beliefs that causing intoxication in others in acceptable. Again, it was clear that perpetrators considered their behaviours to be appropriate and positive.
The present study also revealed findings that indicate that while
drink spiking may not necessarily be used to deliberately facilitate
sexual assault, it is used to encourage consensual sexual activity.
Increasing one’s chances of engaging in sexual activity were relatively
prevalent motivations reported by perpetrators; in fact, these
motivations were as prevalent as those pertaining to fun amongst
perpetrators of substance-related drink spiking. In addition,
perpetrators were likely to expect alcohol consumption to result in
increases in the sexual attraction and interest experienced by others.
This suggests that in some circumstances, drink spiking is utilised in an
attempt to enhance victims’ desire to engage in sexual activity with
perpetrators.

The vast majority of drink spiking perpetrators did not report
being motivated by a wish to control their victim. Given that this
motivation is often present amongst perpetrators of sexual assault, it
could be assumed that drink spiking perpetrators in the current study
did not intend to commit a sexual assault. However, it is possible that
attempts to facilitate consensual sexual activity result in the
perpetration of spiking-facilitated sexual assault. Influences of
misperception and alcohol myopia may cause perpetrators to
interpret their victim’s behaviour as being indicative of sexual interest.
This may result in perpetrators focussing on cues that support this
interpretation while disregarding cues that do not, such as resistance or
refusals on the part of the victim. A sexual assault may occur as a result.
Alternatively, it is possible that perpetrators are simply unaware of issues
relating to consent. Clear guidelines regarding the point at which an
intoxicated person is unable to provide consent are unavailable, and
generally unknown within the community. It is therefore possible that
perpetrators who commit drink spiking and consequently engage in
sexual activity with a highly intoxicated victim are entirely unaware that
they have committed a sexual assault. This may particularly be the
case if the victim is responsive and generally conscious but not entirely aware of their surroundings. Such a state of intoxication is likely to affect the victim’s capacity to provide clear and informed consent or refusal. Indirect and unclear communication may therefore lead to sexual activity that the perpetrator believes to be consensual but the victim believes to be non-consensual.

Although it appears that drink spiking is most commonly perpetrated for the purposes of fun or facilitation of consensual sexual activity, the existence of deliberate and premeditated drug-facilitated sexual assault cannot be denied. The current study determined that predictors of sexual assault perpetration also predict drink spiking perpetration, indicating that similar attitudes and behaviours are present in both types of perpetrator. It is therefore likely that some correlation between sexual assault and drink spiking perpetration exists; however, this requires further investigation. Further discussion of this is undertaken below, with regard to considerations for future research.

Victimisation

Investigation of the variables that have been associated with sexual assault determined that such variables were either not predictive, or functioned as weak predictors, of drink spiking victimisation. Expectations that alcohol increases confidence and sexual responsiveness, frequency of stimulant substance use, and experience of oral sexual assault were predictive of drink spiking victimisation. Such factors indicated that victims, when alcohol-affected, may present in a way that communicates sexual interest to others, thus increasing the likelihood of being targeted by a perpetrator who utilises drink spiking as a means of facilitating consensual sexual activity.

Substance use is generally considered to be a risk-taking activity, given its association with potentially adverse outcomes. In addition, previous research has indicated that sexual assault victimisation is
associated with impaired risk recognition and inability to act upon risk when it is presented. It is therefore possible that drink spiking victimisation is somewhat associated with engagement in behaviours that increase risk and poor risk recognition. This finding was supported by the development of a model of the strongest predictors of drink spiking victimisation – amongst both men and women, previous experience of completed oral sexual assault victimisation was a critical predictor in the experience of drink spiking victimisation, suggesting that victims of both types of assault may indeed display difficulties with recognising and avoiding high-risk situations. Alcohol-related beliefs were also predictive of men’s drink spiking victimisation experiences, potentially signifying that men act in a self-fulfilling manner according to their beliefs that alcohol increases their interest in sexual activity, and perpetrators utilise drink spiking to further enhance the cues provided by victims.

Although drink spiking has frequently been associated with sexual assault, the present study determined that the attitudes and behaviours that place people at risk of experiencing sexual assault cannot be confidently applied to drink spiking victimisation, as the predictive relationships were not particularly powerful. It is possible that drink spiking victimisation is entirely unrelated to sexual assault victimisation, and risk factors for each are entirely dissimilar. However, it was clear that previous sexual assault victimisation was predictive of drink spiking victimisation, demonstrating the possibility that victims of both are similar in their capacity to recognise and respond to risk. Thus, it is feasible that although sexual assault victimisation and drink spiking victimisation are similar in terms of risk awareness, victimisation of spiking is mostly unpredictable, and specific risk factors for experiencing victimisation are difficult to identify. Not only did 9% of the drink spiking victims in the current study experience sexual assault as a result of the spiking, but many feared that they may have experienced
additional victimisation had their friends not intervened soon after the spiking. Clearly, drink spiking is associated with sexual assault to a degree, indicating that the first explanation for the lack of a relationship between sexual assault predictors and drink spiking victimisation is not viable. It therefore appears probable that spiking victimisation can happen to anyone, regardless of attitudes, beliefs and behaviours.

**Part 4. Recommendations for Intervention and Prevention**

**Implications**

It is clear that incidents of suspected drink spiking are occurring to a considerable degree amongst young Australian adults. Almost half of the sample reported engaging in such behaviours as purchasing and mixing cocktails, which are typically considered to be socially acceptable, but still involve the provision of an alcoholic beverage to another person without detailing the alcoholic content to the consumer. In addition, over a quarter of the sample had added alcohol to punch, while 16% had added alcoholic shots to an alcoholic beverage without the consumer’s knowledge or consent. Given that perpetration of drink spiking was predictive of willingness to commit drink spiking acts in the future, it is highly likely that drink spiking will continue to occur unless effective preventive efforts are implemented.

Over a quarter of the current sample had experienced at least one experience of drink spiking victimisation. It was also evident that both perpetration and victimisation of drink spiking were experienced by men and women of all ages and sexual orientations.

Thus, not only is drink spiking occurring, but it is also frequently resulting in negative experiences. Victims reported a range of adverse physical and psychological outcomes resulting from the incident. A number of participants also reported experiencing hospitalisation and sexual assault as a result of their drink spiking victimisation. Approximately 70% of victims experienced negative physical symptoms
after their spiking victimisation, with 22% becoming unconscious at some point after ingesting the spiking agent. Other symptoms, including dizziness, coordination difficulties, vomiting, and hallucinations, were evident within the sample. Participants also reported adverse emotional reactions to their victimisation, stating that they felt “upset”, “scared”, “depressed”, “shaken”, “angry”, “afraid”, “vulnerable”, “stupid”, and “ashamed”.

Although the use of substances as spiking agents was relatively infrequent in the current study, use of illicit substances is increasing amongst young people in Australia (Lindsay, 2005). In addition, perpetrators of drink spiking in the present study maintained that causing intoxication in others was an acceptable and humorous behaviour. These two issues, in combination, may foresee an increase in young adults believing that enforcing substance use in others is also acceptable, thereby resulting in increasing incidents of substance-related drink spiking in the future. Such potential increases remain of concern given the number of adverse symptoms that can be experienced as a result of substance ingestion, including side effects (Baylen & Rosenberg, 2006; Jansen & Theron, 2004; Solowij et al., 1992), psychological sequelae (Curran & Monaghan, 2001; Curran & Morgan, 2000), overdose (Degenhardt et al., 2003; Dillon, 2003; Eade & Patrick, 2004; Munir, 2004) and death (Caldicott et al., 2004; Theron et al., 2003).

Victimisation of drink spiking also maintains potential effects on victims’ circumstances after the event. This is particularly the case with regard to driving a motor vehicle. It has been established that both alcohol and substances cause impairment in driving ability (Ramaekers et al., 2006; Winstock, 2004). Because drink spiking victims are unlikely to be aware of the amount, or the type, of substance that they have ingested, they may attempt to drive without being fully aware of the potential impairment that they have experienced. A victim of spiking
may believe that they have voluntarily consumed a low dose of alcohol and are therefore legally able to drive; however, the additional, non-consensual ingestion of alcohol or substances in this circumstance may cause incapacities that the victim is not aware of. In addition, substances can potentially maintain effects for several days, thereby causing possible ongoing impairments until the substance is fully excreted.

For these reasons, recommendations for both intervention and prevention of drink spiking are warranted.

**Intervention**

The culmination of the research conducted by Taylor and colleagues (2004) resulted in recommendations for the development of education kits that could be provided to police officers, sexual assault agency staff, hospital emergency staff, liquor industry staff, patrons of licensed venues, secondary and tertiary students, and community groups. These recommendations are highly comprehensive, and effectively address potential problems faced by each of the kit users. In cases where drink spiking victims attend a sexual assault agency, Taylor and colleagues (2004) provide recommendations regarding collecting samples for toxicological analysis, and advise counsellors to “…inform clients that they may never be able to remember what happened…” (p. 130) and to “…progress to dealing with different issues important for healing…” (p. 130). Although such suggestions are appropriate, they do not provide specific assistance to professionals who may be required to provide therapeutic intervention to drink spiking victims.

Clinicians who foresee the possibility of providing such an intervention should familiarise themselves with the nature of drink spiking and appropriate responses to victimisation. Upon referral, intake workers should immediately determine the approximate time of onset of events. If contact is made within 72 hours after the drink spiking incident, arrangements for obtaining a referral for toxicological analysis
should be made. The victim should be advised to obtain urine and blood samples immediately, and should be advised that any voluntarily consumed substances may be detected in toxicological analysis. Such information may be provided to police. Clinicians should also obtain a detailed history of the victim’s voluntary alcohol and substance use, noting typical effects experienced by the victim after consumption of each substance or combination of substances (Griffiths, 2001).

Clinicians should provide assistance according to the account of events provided by the drink spiking victim. At the present time, official reports of events, particularly toxicological analysis, are fallible, and do not provide accurate indications of victimisation. In addition, the victim’s reactions are likely to be based on their own perception of events, and should be dealt without question or doubt. Clinicians should refrain from basing conclusions on results provided by toxicological reports. Negative findings do not necessarily indicate that a spiking incident did not occur. Moreover, the detection of such substances as ecstasy and amphetamine does not suggest that these substances were voluntarily consumed by victims, simply because they are not traditionally conceptualised as substances used by drink spikers.

The current study determined that victimisation is generally unpredictable and affected by very few attitudes or behaviours displayed by victims. Clinicians should therefore refrain from assuming that their client’s victimisation was attributable to particular aspects of the client’s presentation or behaviours at the time of the incident. However, it may be beneficial to identify particular risk factors that may increase the specific client’s risk of future victimisation. Such exploration may have therapeutic value, assisting the client in identifying possible changes that can be made in order to assume control of future scenarios in which they may be at risk of victimisation. The development of such mastery has been identified as an important
aspect of treatment provided to victims of sexual assault (Koss & Harvey, 1991).

The current study also determined that memory loss, blackouts, and unconsciousness are common experiences associated with drink spiking victimisation. Victims may therefore feel frustrated at their incapacity to determine exactly what occurred after their victimisation. Clinicians should assist victims in establishing an accurate and realistic understanding of what may have occurred after the drink spiking. Clinicians should develop an understanding of the likely symptoms caused by substances typically used in drink spiking incidents, including, but not limited to, alcohol, ecstasy, amphetamine, benzodiazepines, GHB and ketamine. Familiarity with these effects may assist with providing the victim with some insight into substances that may have been used during their victimisation. The present study determined that trends regarding the characteristics of drink spiking incidents do not differ significantly regardless of whether accounts are provided by victims themselves or friends of victims. It is therefore probable that witnesses may be able to provide accurate details of drink spiking incidents. Clinicians may facilitate witnesses attending therapeutic sessions with victims, enabling the attainment of information in a safe, protected environment.

The present research determined that half of all drink spiking victims remain unaware of the identity of their perpetrator. This may result in fear of having contact with the perpetrator in the future but not realising this, potentially causing victims to be suspicious of people who were present at the time of their victimisation. Clinicians should be aware of this possibility, and assist the victim in identifying appropriate trusted people.

Both past research and the current study have indicated that drink spiking victims often experience such adverse negative emotions as depression, anger, vulnerability, and shame. It is also highly likely that
victims will experience fear of further drink spiking victimisation occurring. As a result, fear of attending social events and licensed venues may be evident. In the absence of interventions designed specifically for drink spiking victims, it is logical that in the treatment of drink spiking victims, clinicians utilise strategies shown to be effective in the treatment of sexual assault victims (Foà & Rothbaum, 1998; Leahy & Holland, 2000). Indeed, the psychological sequelae of both victim groups are remarkably similar. Such treatments focus on the reduction of problematic emotions and reactions resulting from experiencing a traumatic event – as mentioned, such psychological sequelae are often evident amongst drink spiking victims, indicating that these treatments may be effective. Efficacious treatments for post-assault traumatic reactions initially involve the undertaking of both imaginal and in vivo exposure. Clients are taught anxiety-reducing techniques, such as relaxation strategies and breathing retraining. Clients are then encouraged to provide a verbal account of the traumatic incident, detailing specific sensory, physiological and emotional experiences that occurred during the incident. Such exposure allows the victim to establish methods of coping with traumatic memories and flashbacks. Assistance is also provided to clients in the development of a hierarchy of avoided situations, in addition to subjective units of distress. Gradual exposure to each situation is undertaken incrementally, either during therapeutic sessions or as homework tasks. Through the use of anxiety management strategies, the client is expected to develop a capacity to remain exposed to difficult situations without experiencing significant anxious symptoms. Finally, cognitive restructuring can be utilised, particularly if the client is experiencing fear, guilt or embarrassment. The primary aim of such restructuring is to assist the client in developing a balanced view of their victimisation and the potential for future victimisation to occur. The client is assisted in developing thoughts regarding their potential to competently ensure their own safety, rather
than believing that they are frequently exposed to danger and are incapable of predicting or avoiding adverse occurrences (Foa & Rothbaum, 1998; Leahy & Holland, 2000).

It has been contended that exposure therapy is the most empirically-validated and effective intervention of all cognitive-behavioural treatments (Rothbaum, Meadows, Resick, & Foy, 2000). However, undertaking imaginal exposure may be difficult with drink spiking victims, given such incidents are often characterised by memory loss and a lack of knowledge of the perpetrator’s identity or the after events of the spiking. A number of strategies for obtaining accurate details regarding the event are abovementioned; however, if clients are not experiencing traumatic memories or flashbacks of the incident, imaginal exposure is likely to be unwarranted. Alternatively, encouraging the client to undertake this process with any parts of the incident that they do recall may be beneficial. This may serve to not only reduce any anxiety associated with memories of the event, but also to avoid any overwhelming emotions experienced as a result of not being able to recall specific details of the incident.

Reactions to drink spiking victimisation are likely to vary considerably, and consequent anxiety or fears are may differ according to the circumstances and outcome of the victimisation. Establishing a hierarchy of feared situations that is specific to the individual client, and undertaking gradual exposure to these situations, is therefore recommended. Clinicians should be aware of the range of stimuli that may provoke anxious responses, and should encourage clients to consider all possibilities. Such stimuli may include, for example, particular peers that were present at the time of the incident, the alcohol or substance that was consumed, or the type of social situation or licensed venue at which the spiking occurred.

Cognitive restructuring is also likely to be of benefit, particularly if the victim believes that they acted protectively but were victimised
regardless. Given that the present study indicated that victimisation is somewhat unpredictable, it may be difficult to determine specific characteristics or occurrences that contributed to the client’s victimisation, potentially resulting in the client experiencing a fear of future victimisations which are perceived to be uncontrollable and perhaps inevitable. Assisting with the client’s regaining of control and competence is likely to be helpful in these cases, as is psychoeducation regarding the prevalence of drink spiking victimisation. Cognitive restructuring can also be applied to a range of psychological reactions that drink spiking victims may display, and should ultimately focus on establishing realistic, rational thoughts regarding both the client’s previous victimisation and the possibility of experiencing victimisation in the future.

**Prevention**

Due to its unpredictable nature, any attempts to reduce drink spiking victimisation must be targeted at a number of levels within the community. The following provides brief recommendations for such preventive efforts.

**Victims and Perpetrators**

The current study failed to show an association between engaging in protective behaviours, which are generally recommended as effective strategies of avoiding drink spiking victimisation, and actual victimisation. In addition, very few predictors were associated with victimisation, and those variables that were predictive achieved only weak relationships. It is therefore possible that victimisation is entirely unpredictable, and that the possibility of experiencing victimisation permeates all sectors of the community, regardless of demographic characteristics, attitudes, beliefs, and behaviours. Thus, drink spiking victimisation may be reduced by promoting the consistent use of protective behaviours during all social occasions, or by
identifying protective behaviours that are more effective than those assessed in the current study.

However, of perhaps greater efficacy would be the provision of prevention programs to potential perpetrators of drink spiking. Such prevention programs could initially be targeted at young people who hold strong alcohol-related expectancies and beliefs and who engage in frequent alcohol and/or substance use, as these attitudes and behaviours were strong predictors for drink spiking perpetration. However, given the range of variables that were weakly predictive of perpetration, prevention programs should ideally be targeted at all sectors of the community. At present, the majority of anti-spiking campaigns focus responsibility on victims, encouraging people to engage in protective behaviours to avoid victimisation. Providing prevention programs to all members of the community, and placing responsibility on perpetrators to refrain from engaging in drink spiking, is not only likely to reduce the existence of drink spiking, but is also essential in eradicating any element of victim blaming and responsibility within this issue.

Prevention programs should first communicate the prevalence and potential outcomes of drink spiking, emphasising the fact that all people are vulnerable to potential victimisation. In the current study, participants who displayed high supervision of their own drinks were less likely to perpetrate spiking than those who did not engage in such supervisory behaviours. Engagement in supervisory behaviours is likely to be fuelled by an awareness of drink spiking and an assessment of oneself as a possible victim. Although protective behaviours may not decrease victimisation, creating awareness of drink spiking and risk of victimisation while promoting the use of protective behaviours is likely to decrease perpetration, thereby decreasing victimisation. A reduction in perpetration might also be achieved by outlining the potential negative effects of spiking, thereby reducing participants’
willingness to engage in such acts in future. It is evident that previous perpetration of drink spiking is a significant predictor of willingness to engage in perpetration in the future; thus, it is likely that perpetrators are not exposed to negative sequelae following their perpetration. This may be due to the fact that most victims are removed from the scene of the spiking by friends, and that most adverse psychological effects, such as feelings of fear and vulnerability, occur after the event. Prevention programs could therefore emphasise the fact that both physical and psychological consequences of drink spiking are likely to be negative, even if the perpetrator intends for the act to be a positive, fun experience.

Prevention programs should focus on the two predominant motivations for drink spiking perpetration – creating a fun, humorous situation, and facilitating engagement in sexual activity. The former motivation is difficult to tackle as it is generally associated with alcohol-related drink spiking. The high prevalence of purchasing and mixing cocktails in the current sample suggests that such behaviours are generally considered to be acceptable by young Australian adults. However, such perceptions of acceptability are difficult to determine with regard to other alcohol-related types of drink spiking, such as adding alcoholic shots to alcoholic beverages. It is possible that while some young people may not consider this behaviour to be appropriate, others may deem it to be a normal part of socialising. It is feasible that, if adding alcoholic shots is considered to be appropriate and fun, the adding of substances is also considered to be appropriate and fun in some social circles. Any reduction in drink spiking perpetration must therefore be achieved by instigating fundamental cultural change. Although it is highly probable that drink spiking using alcoholic shots or substances is likely to cause greater harm than purchasing or mixing cocktails, each of these behaviours exist within an apparent culture that promotes alcohol consumption and intoxication
as positive social experiences. Thus, reducing the occurrence of use of alcohol or substances as spiking agents is unlikely to be effective when such behaviours as purchasing cocktails are considered to be acceptable. At the present time, the boundaries between acceptable and unacceptable forms of drink spiking are blurred. It may therefore be necessary for preventative programs to encourage young people, when purchasing or preparing drinks for others, to ensure that consumers are fully informed of the type and quantity of alcohol present in the drink in question, and that if consumers are not aware of this information, they provide consent to consuming a drink which includes an unknown quantity of alcohol or an unknown substance. This may appear to be an extreme reaction to an issue that affects a minority of people. However, it may be a necessary measure in causing an alteration in the cultural acceptance of alcohol consumption and intoxication. At the very least, young people should be encouraged to discuss their perceptions of acceptable and unacceptable behaviours with peers, with particular emphasis on the types of behaviours that constitute fun, enjoyable experiences.

In addressing motivations regarding the facilitation of sexual activity, it is necessary to acknowledge that young people’s attendance at social events and licensed venues frequently involves engagement in interactions that may lead to sexual activity (Lindsay, 2005). Thus, prevention programs should focus on assisting young people in developing methods of clear communication. Young people must be provided with strategies of directly stating sexual intentions and resistance, and of accepting and responding to such statements appropriately. Potential perpetrators may benefit from psychoeducation regarding the effects of alcohol myopia and misperception, which may prompt young people to question their interpretation of ambiguous cues when alcohol-affected. Efforts should also be made to alter the expectations and beliefs held by young
people regarding the effects of alcohol. If young people do not expect others to become more interested in sexual activity after consuming alcohol, they are unlikely to resort to the use of drink spiking to increase such interest. Finally, it is essential that young people are provided with clear information regarding the provision of consent for sexual activity when alcohol- or substance-affected. The most recent definitions of consent determine that young people cannot consent to sexual activity if they are “…heavily inebriated…” (Taylor et al., 2004, p. 133), “…too intoxicated…” (Abbey et al., 2001, p. 804) or unconscious; sexual activity that occurs with a person under these circumstances is considered to be sexual assault (Taylor et al., 2004). However, such differences are open to interpretation. Clear definitions of the typical symptoms of incapacity to consent must be established, and these need to be communicated to young people. Such information may actually decrease the prevalence of drink spiking perpetration, as young people may become wary of inducing a state of intoxication that induces incapacity to provide consent. This information is also likely to result in decreases in the perpetration of spiking-related sexual assault.

**Licensed Venues**

A number of strategies for reducing drink spiking victimisation are recommended for use within licensed venues. Firstly, general recommendations for reducing antisocial behaviour in and around licensed venues have been made by Crime Prevention Victoria (2005). These include maintaining minimal standards for security surveillance, providing refresher Responsible Service of Alcohol training to bar staff after certain periods of time, and disseminating information and resources to licensees to advise of strategies for managing and reducing antisocial behaviours within venues. It is recommended that each of these policies incorporate information and strategies that relate specifically to drink spiking. This would allow the provision of
uniform and regularly updated information to venues, thereby promoting appropriate methods of preventing and responding to incidents of drink spiking victimisation.

It is quite possible that the presence of drink spiking awareness campaigns may deter potential perpetrators from undertaking drink spiking acts. Many previous campaigns, such as the Western Australia Drink Spiking Education Project (Fyfe & Newell, 2002) and the “Keep an Eye Open” campaign (Munro, 2003), have featured convenience advertising, in which messages regarding drink spiking are communicated through posters and brochures placed in venue bathrooms. Assessments of these campaigns indicated that convenience advertising was noticed and attended to by high proportions of venue patrons (Fyfe & Newell, 2002; Munro, 2003). It is therefore possible that campaigns featuring relevant and new information about drink spiking may be highly successful in reducing victimisation. Such campaigns could be circulated throughout venues, rather than being limited to bathrooms, and should feature messages aimed at potential perpetrators, rather than simply encouraging victims to engage in protective behaviours.

The availability of anti-spiking products within licensed venues may also contribute to a deterrence of potential drink spiking perpetrators. A range of such products is currently available; however, very few have been subject to empirical testing for their effectiveness. Those that have been tested, such as the Drink Guard and Drink Detective drink testing kits, are subject to issues of reliability, and may therefore produce false positive or false negative reports when used to test for the presence of illicit substances in a beverage (Beynon et al., 2006). In addition, drink testers would have to be utilised before each mouthful of one’s beverage is taken, as drink spiking does not necessarily occur prior to the commencement of consumption of a beverage. For these reasons, it is not recommended that drink spiking
prevention products, including testers, are used by venue patrons as reliable or ‘foolproof’ methods of avoiding victimisation. However, it is possible that the overt presence of such products in licensed venues, in addition to drink spiking campaigns, may communicate to patrons that drink spiking is not condoned in such venues. Given that the majority of drink spiking perpetration is not committed for malicious purposes, this may promote the changing of the current cultural climate, in which causing deliberate intoxication to others is considered to be a fun, humorous behaviour by a notable proportion of young Australian adults.

It is likely that venue proprietors would be concerned that the implementation of such strategies may be misinterpreted by patrons as an admission that drink spiking occurs in their venues, thus leading to a reduction in patronage. However, previous research has indicated that such strategies may be associated with an increase in patronage – the result of patrons perceiving the venue to be a safer (Munro, 2003). It is recommended that the abovementioned strategies should be implemented on a trial basis, with close monitoring of patron perceptions of the strategies, venue profit margins, and occurrence of drink spiking victimisation.

**Law**

At the present time, it is not illegal to spike another person’s drink, unless the substances used can be classified as a poison or specific intent to cause harm is present and can be proven (MCCOC, 2007). The current study supported previous anecdotal and empirical evidence that drink spiking is most commonly perpetrated with alcohol as the spiking agent, and is most often motivated by a wish to create a humorous situation, share a positive experience, or facilitate consensual sexual activity. Spiking is unlikely to be motivated by an intention to cause harm, nor is it likely to result in additional victimisation. However, in addition to perpetrators’ neglect of the
simple human right of choosing what one consumes, drink spiking is likely to cause a number of adverse physical and psychological effects for the victim. It is imperative that a specific law pertaining to drink spiking is developed. In accordance with the recommendations made by the MCCOC (2007), it is recommended that this law prohibits the administration of any substance, including alcohol, to the beverage of another person, if this substance is likely to, or is intended to, adversely affect the consumer’s bodily function.

It is also recommended that efforts are made to advertise the development of this law within the community, perhaps via media outlets and a public awareness campaign. Such publicity is likely to communicate that all forms of drink spiking, including those involving alcohol as the spiking agent, are punishable by law and are therefore not condoned by the community at large. It is hoped that this would in turn result in a decrease of all drink spiking perpetration.

Community

It has been contended that antisocial behaviour, in general, can be decreased with the implementation of urban design principles in public spaces. The Safer Design Guidelines, established by Crime Prevention Victoria and the Department of Sustainability and Environment developed a number of recommendations aimed at improving perceptions of safety within high-use areas of Melbourne (Crime Prevention Victoria, 2005a). It was proposed that visibility within public spaces creates natural surveillance, involving the observation of happenings by members of the public. This creates a general feeling of exposure amongst potential perpetrators of crime, thereby deterring perpetration. The notion of surveillance was also considered with regard to building access – the recommendations maintained that entrances should be safe and accessible and should maintain clear sightlines with other buildings and spaces. It was also asserted that well-
maintained, clean and busy areas are perceived to be safe by members of the public, and deter potential antisocial behaviour.

These recommendations can be utilised by venue proprietors, local Councils, and State Governments to increase perceptions of safety and deter drink spiking perpetration in and near licensed venues. Surveillance could be increased within venues by placing additional members of staff behind bars, in bathrooms, and throughout venues. Such staff members could be dressed in ways that are visible and provide a clear message that they are conducting surveillance. Increases in surveillance may deter the perpetration of spiking. It is also likely that creating surveillance around venues will deter those instances of drink spiking that result in victims leaving venues alone or with strangers. Ensuring that areas surrounding licensed venues are welcoming and clean is likely to promote public habitation of such spaces. Furthermore, implementing lighting, security camera surveillance and sufficient staff surveillance between venue entrances and nearby points of transport, for example, may result in identification of victims who are unwillingly escorted out of licensed venues, or victims who are experiencing adverse physical effects as a result of drink spiking. It is essential that licensed venues are presented to the public as sites that do not condone drink spiking, and that are actively creating environments that reduce the likelihood of spiking victimisation occurring.

Part 5. Limitations and Recommendations for Future Research

Limitations

It is important to regard the findings of the present research with some caution given several limitations. The sample used in the current study was not representative of the Australian population, with females, Victorian residents, and tertiary students being over-represented. The sample was also deliberately limited to young adults aged between 18 and 35 years. This has perhaps resulted in some bias in the reports
provided by participants. However, it is also possible that the study has targeted those individuals at greatest risk of both perpetrating and experiencing drink spiking. It has been contended that young people, particularly those attending university, are at particularly high risk of experiencing sexual assault victimisation (Koss et al., 1987; Rickert & Wiemann, 1998). It has also been determined that young adults engage in alcohol and substance consumption more frequently than younger people or older adults (Australian Institute of Health and Welfare, 2005). Given that drink spiking tends to be associated with alcohol consumption and the facilitation of sexual activity, the current sample may be representative of those most likely to report both perpetration and victimisation of drink spiking.

The Social Experiences Survey (SES) is a self-report measure and was therefore subject to the fallibilities of such scales. Responses to self-report measures may be susceptible to response distortions, such as acquiescence, extreme and central tendency responding, and social desirability biases (Lanyon & Goodstein, 1997). However, the range of responses reported in the current study suggested that participants were responding honestly. In addition, although sections of the SES were based on previously-established measures, the psychometric properties of the SES have not been established, therefore raising questions as to the reliability and validity of the measure. Furthermore, the SES, in its current form, was also unable to provide a complete representation of drink spiking victimisation. For example, participants were not asked specifically about their experience of hospitalisation or sexual assault, and findings regarding these issues were therefore reliant upon participants’ unprompted reports.

Publicity for the current study was predominantly reliant on the efforts of media sources and support agencies. Attempts were made to advertise the study as exploring the social patterns and attitudes of young people; however, at times, the study was specifically publicised
as an exploration of drink spiking. This outcome may have affected the
types of respondents attracted to the study; that is, individuals who
perceived themselves as victims of drink spiking may have wished to
report on their experiences. It is therefore possible that the obtained
prevalence of drink spiking victimisation is not an accurate indication
of the percentage of 18-35 year old adults who have experienced
drink spiking. Unfortunately, because previous studies have not looked
at the prevalence of victimisation as a percentage of a community
sample (as opposed to incidence rates, such as that obtained by
Taylor et al., 2004), it is not possible to determine whether the current
study has obtained an accurate prevalence. Nonetheless, the study
certainly determined that drink spiking victimisation is occurring to
some degree within the Australian community – the fact that 207 of the
805 participants that responded to the SES, in addition to 527 people
known to participants, had experienced a drink spiking victimisation is
concerning, and warrants both further investigation and the
development of prevention and intervention methods. In addition, the
current study was predominantly focussed on identifying predictors of
both perpetration and victimisation of drink spiking. This aim was
achieved, and such predictors remain unaffected by the way in which
the sample was obtained.

Future Research

As abovementioned, the current study is the first to obtain an
indication of the proportion of young Australian adults who have
experienced drink spiking victimisation, as opposed to an incidence
rate. Questions remain as to the accuracy of this prevalence data; for
this reason, further research is warranted. Future studies could usefully
undertake examinations of general behaviours relating to socialising
and alcohol consumption, with the investigation of drink spiking
incorporated into such assessments. Refraining from advertising of
these studies as specific investigations of drink spiking would avoid
attracting victims, thereby providing a more accurate indication of the prevalence of victimisation in Australia.

A number of issues that were explored in the current study, including the prevalence of engagement in protective behaviours and the different types of sexual assault victimisation, have not been investigated in previous research. In addition, the present study was the first to explore motivations held by perpetrators of drink spiking, and to investigate the relationship between predictors of sexual assault and both perpetration and victimisation of drink spiking. As a result, it is difficult to generalise findings to populations that remain different to the 18-35 year old Australian sample utilised in the current study. Further refinement and replication of this study is therefore warranted, in order to determine whether the findings are consistent across differing samples.

Further investigations could also explore the impact of additional demographic factors, such as ethnicity, on drink spiking perpetration and victimisation. It is also necessary to expand the age in future drink spiking research in order to determine whether younger adolescents and older adults are subject to drink spiking perpetration and victimisation. The impact of gender and sexual orientation on drink spiking is also warranted. The current study identified relationships between gender, age, and sexual orientation on the sexual assault predictors that were later utilised to establish predictors of drink spiking. Although the impact of these demographic factors was discussed theoretically, empirical investigation of their potential mediating influence was not undertaken. This certainly requires further exploration, allowing the development of prevention programs tailored specifically to different sectors of the community.

Chapter 5 outlined the need for caution in relation to interpreting findings pertaining to the factors representing alcohol expectancies, alcohol beliefs, participation in risk-taking activities, and engagement
in protective behaviours. As mentioned, some of these factors comprised of two or three items, which is below the accepted criterion that four items are warranted for factors to be considered significant. Although the inclusion of two- and three-item factors has allowed the investigation of a broad range of domains and their relationship to drink spiking perpetration and victimisation, further investigation of these specific factors is needed. Future research could focus on those factors that demonstrated significant predictive relationships with perpetration and victimisation (e.g., the Alcohol Expectancy of Aggressive and Antisocial Tendencies) and attempt to verify this relationship by utilising a larger measure. A more expansive measure would allow each participant’s score on each domain to be based on more than two or three items, thereby providing more comprehensive and convincing findings.

It is also necessary to examine the perpetration and victimisation of drink spiking in more detail. Qualitative analyses investigating the exact circumstances surrounding occurrences of perpetration and victimisation could provide valuable insight into the predictors and consequences of these experiences. Given the weak relationship between sexual assault predictors and drink spiking victimisation, investigation of entirely new potential predictors may determine that risk factors for victimisation can in fact be identified. Additional investigation of the culture of socialising amongst young adults is also warranted. Detailed analysis of the motivations, hopes, desires, and behaviours displayed by young people during social situations may assist in the development of a more advanced understanding of how and why drink spiking occurs.

Although investigation of the range of motivations held by drink spiking perpetrators is warranted, further exploration of the use of drink spiking as a method of committing sexual assault is needed. This may only be achieved via an increase in reporting of drink spiking and
consequent conviction of perpetrators, who may be willing to partake in research. It is possible that perpetrators of spiking-related sexual assault may provide details of their motivations and experiences of perpetration via anonymous, confidential self-report measures. However, this may be unlikely if such research is perceived to be reducing the ease with which such crimes can be committed. Perpetrators may perceive such an outcome to be undesirable – at this stage, drink spiking remains an ideal method of undertaking an act of sexual assault while limiting the risk of identification by victims and authorities. Consequently, perhaps the only option for investigating the nature of spiking-related sexual assault is via in-depth qualitative analysis of victims’ reports of their experiences.

It is also necessary to establish and evaluate a variety of intervention and prevention programs aimed at assisting victims of drink spiking, and ultimately eradicating the occurrence of drink spiking. The efficacy of awareness campaigns and drink spiking products, such as drink testers, requires further scientific assessment. It would also be beneficial to develop a therapeutic intervention program aimed specifically at drink spiking victims.

Part 6. Conclusion

The current study initially aimed to build upon previous research by obtaining a detailed account of the prevalence and characteristics associated with drink spiking victimisation in Australia. A comprehensive depiction of both typical victimisation incidents and incidents involving sexual assault victimisation was provided. It was determined that drink spiking generally occurs in licensed venues, resulting in a range of physiological and psychological symptoms, most of which are perceived to be adverse. However, in most cases, victims are cared for by friends, thereby avoiding any potential further victimisation. Perpetrators generally remain unidentified, and victimisations go unreported in the vast majority of cases. In contrast, drink spiking
victimisation that results in sexual assault often features identifiable perpetrators and reports made to authorities.

In addition to this account of victimisation, the present study was the first to empirically assess the motivations held by perpetrators of drink spiking. Moreover, given the established association between drink spiking and sexual assault, the current study identified variables generally related with sexual assault perpetration and victimisation and assessed their predictive nature with regard to the perpetration and victimisation of drink spiking. The combination of the findings regarding motivations and predictors allowed the identification of general themes that appear to explain the majority of drink spiking incidents.

On the basis of information provided by perpetrators, it was determined that most drink spiking incidents occur for the purposes of sharing positive experiences and creating fun and entertaining situations. Perpetration was predicted by high levels of substance use and strong beliefs regarding the acceptability and humour of deliberately causing intoxication in others. Perpetrators also maintained relatively little responsibility in ensuring the safety of their peers. It therefore appeared that drink spiking exists again a backdrop of cultural acceptance and promotion of alcohol and substance consumption and intoxication. Drink spiking is also fuelled by an interest in encouraging consensual sexual activity. Engagement in all types of drink spiking behaviours was predicted by expectations that alcohol consumption increases sexual attraction and interest in partaking in sexual activity. In addition, perpetrators reported the facilitation of sexual activity as a predominant motivation, particularly in cases involving the addition of substances to beverages belonging to others.

It was established that drink spiking victimisation was predicted both by use of such substances as tobacco, marijuana, ecstasy, amphetamine, and cocaine, and by previous victimisation of oral sexual assault. Victims also demonstrated stronger expectations that
alcohol increases their own confidence and ability to initiate sexual interactions. It is therefore possible that victims engage in high-risk activities while displaying similar impairments in risk recognition and avoidance of potentially dangerous situations to sexual assault victims. Furthermore, victims may convey signals of confidence and sexual interest when consuming alcohol, which may be encouraged by others through the use of drink spiking.

The identification of these themes informed the provision of recommendations regarding both intervention for drink spiking victims and prevention strategies aimed at reducing future victimisation. Details for the undertaking of individual therapy with victims were presented, focusing on the tailoring of treatment programs to the individual needs of the client, based on their reactions to their victimisation. Prevention efforts were recommended for perpetrators and victims, licensed venues, agencies that facilitate law reforms, and the community at large. However, these recommendations remain in their formative stages. For this reason, future research that further investigates the characteristics of both perpetration and victimisation of drink spiking is recommended, allowing the development of more detailed prevention programs. It is clear that drink spiking is generally a negative and potentially traumatic experience for victims. It is hoped that the current study forms the beginning of a concerted effort to reduce, if not eradicate, future victimisation of drink spiking.


Bell, S. T., Kuriloff, P. J., & Lottes, I. (1994). Understanding attributions of blame in stranger rape and date rape situations: An examination of gender, race, identification, and students' social perceptions


Hall, L. (2005, 18th December). Spiking 'not an urban myth'. *The Sunday Age*, p. 5.


Malamuth, N. M., Haber, S., & Feshbach, S. (1980). Testing hypotheses regarding rape: Exposure to sexual violence, sex differences, and


Appendix A

Recruitment Flyer
DO YOU WANT A SAY?

Have your say!

RMIT University is seeking 18-35 year old males and females to participate in research exploring issues surrounding drink spiking, including your attitudes and experiences about drinking alcohol, meeting people, and sexuality. All you need to do is spend 20 minutes filling out a questionnaire.

If you’re interested in participating, take one of the slips below, go to the website, and complete the questionnaire!

Questions?
Give Bridget McPherson, the Principal Researcher, or Dr David Smith, the Project Supervisor, a call on 9925 7376, or email them at s3072622@student.mit.edu.au

http://webbeam.mlt.edu.au/ses
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http://webbeam.mlt.edu.au/ses
Appendix B

Recruitment Bookmarks
DO YOU WANNA?
Have your say!

Check out http://weblearn.rmit.edu.au/ses

RMIT University needs 18-35 year olds to fill out a questionnaire about
socialising, drinking, meeting people, and sexuality.

DO YOU WANNA?
Have your say!

Check out http://weblearn.rmit.edu.au/ses

RMIT University needs 18-35 year olds to fill out a questionnaire about
drink spiking
Appendix C

Media Releases
August 2, 2005

**Drink spiking problem focus of RMIT study**

The recently emerging social problem of drink spiking is set to be the focus of a new RMIT University study into social activities.

RMIT student Bridget McPherson is looking for volunteers aged from 18 to 35 to participate in the study into the prevalence, motivations and attitudes surrounding social activities including alcohol and substance abuse and sexual activity.

Ms McPherson, who is carrying out the research as part of her RMIT Doctor of Psychology (Educational and Developmental), says the issues surrounding social activities are unclear and contradictory, particularly in relation to drink spiking.

“This study broadens this focus, investigating the scenarios in which drink spiking occur, and the motivations behind the act, and therefore aims to determine whether the issue remains a significant concern for young people,” Ms McPherson said.

“The study also aims to motivate young people to act in a protective manner during social occasions.”

Ms McPherson has previously conducted research into the relationship between parental attachment and risk-taking in young people, and spent time working with high-risk adolescents who had experienced abuse, mental illness and substance abuse.

Study participants are required to fill in a confidential questionnaire which takes about 15 to 20 minutes. The questionnaire is available at [http://weblearn.rmit.edu.au/ses](http://weblearn.rmit.edu.au/ses)

Hard copies of the questionnaire will also be available in various licensed venues across Melbourne, or can be accessed by contacting RMIT’s Department of Psychology and Disability Studies on (03) 9925 7376 or Bridget McPherson on s3072622@student.rmit.edu.au

For more information please contact: Bridget McPherson 0413 687 967

RMIT Public Affairs (03) 9925 2807.
RMIT postgraduate researching drink spiking

An RMIT University postgraduate student is investigating the social problem of drink spiking and trying to determine its prevalence in the community among differing reports on the problem.

RMIT researcher Bridget McPherson is looking for volunteers aged from 18 to 35 to participate in a study into the prevalence, motivations and attitudes surrounding social activities including sexual activity and alcohol and substance abuse.

Ms McPherson, who is carrying out the research as part of her Doctor of Psychology (Educational and Developmental) program, says the issues surrounding social activities are unclear and contradictory, particularly in relation to drink spiking.

“This study broadens this focus, investigating the scenarios in which drink spiking occurs, and the motivations behind the act, and therefore aims to determine whether the issue remains a significant concern for young people,” Ms McPherson said.

“The study also aims to motivate young people to act in a protective manner during social occasions.”

Ms McPherson has previously conducted research into the relationship between parental attachment and risk-taking in young people, and spent time working with high-risk adolescents who had experienced abuse, mental illness and substance abuse.

Study participants are required to fill in a confidential questionnaire which takes about 15 to 20 minutes. The questionnaire is available at http://weblearn.rmit.edu.au/ses

Media enquiries: Bridget McPherson 0413 687 967
RMIT Media and Communications: (03) 9925 2807
Issued by: RMIT Media and Communications (03) 9925 2807
RMIT drink spiking study reveals findings

An RMIT University study examining the incidence and effects of drink spiking has found most occurrences are unreported.

Postgraduate researcher, Bridget McPherson, said although a quarter of the preliminary sample group believed they were a victim of drink spiking, "very few people reported the incident to an authority or support service".

Ms McPherson called on the government and police to consider the research findings in order to reduce the prevalence of drink spiking.

"About 67 per cent of the preliminary sample group believe they have been a victim of crime as a result of drink spiking. Most incidences occurred at nightclubs and often the victim was not supervising their drink," she said.

"Alarmingly, about 10 per cent of the study's initial sample population required medical attention and some participants reported experiencing an associated sexual assault."

Ms McPherson, who is completing the study as part of her Doctor of Psychology (Education and Development), encouraged more people aged between 18 and 35 years to participate in the survey.

She said the research is the first of its kind internationally "specifically examining where drink spiking is happening, who is committing the act and what the likely consequences are".

"The study aims to increase public awareness of the prevalence of drink spiking and to motivate young people to act in a protective manner during social interactions," she said.

"An increased number of participants in this national study will assist encourage authorities to consider effective mechanisms to combat drink spiking."

Participants are invited to complete an anonymous survey available at: http://weblearn.rmit.edu.au/ses/

Further information: Bridget McPherson (03) 9925 7376 or s3072622@student.rmit.edu.au

Issued by: RMIT Media and Communications (03) 9925 2807
Appendix D

*Media Coverage*
Each of these media outlets published articles regarding the current research, or conducted interviews with the researchers. Most provided information to potential participants.

- Hack (Triple J radio)
- The Late Date Show (FOX FM radio)
- The Matt n Jo Show (FOX FM radio)
- ABC Radio Tasmania
- ABC Radio Central Victoria
- Panorama Health and Relationships (SYN FM radio)
- Today Tonight (Network Seven)
- The Age newspaper
- The Sydney Morning Herald newspaper
- The Herald Sun newspaper
- The Monash Journal newspaper
- The Oakleigh Monash Leader newspaper
- Sydney Star Observer newspaper
- The Education Age newspaper
- MX newspaper
Appendix E

Plain Language Statements
**Invitation to Participate in a Research Project**

**Project Information Statement**

**Project Title:**
Patterns of social behaviours, sexual activity, and substance use amongst young people.

**Investigators:**
- Ms Bridget McPherson (Psychology Doctoral student, RMIT University, s3072622@student.rmit.edu.au, 9925-7376)
- Dr David Smith (Project Supervisor: Senior Lecturer, Psychology, RMIT University, david.smith@rmit.edu.au, 9925-7523)

You are invited to participate in a research project being conducted by Bridget McPherson at RMIT University. This information sheet describes the project in straightforward language, or ‘plain English’. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate.

**Why have you been approached?**
Participants for this research have been contacted via university lectures and tutorials. Appropriate permission has been obtained by lecturers. Your contact details have not been obtained, nor will they be, at any point. Your participation, or decision not to participate, will in no way affect your results or any other aspect of your academic life.

**What is the project about? What are the questions being addressed?**
The project aims to investigate your experiences while socialising, including drinking alcohol, using drugs, and meeting people. The project also asks questions about behaviours relating to sexual experience.

**What are the benefits associated with participation?**
Although your participation will not result in any direct benefit for you, it will assist in eradicating the contradiction and confusion that currently surrounds the social experiences of young adults by providing valuable information.

**If I agree to participate, what will I be required to do?**
Your participation requires the completion of the Social Experiences Survey, which will take you approximately 20 minutes. You are welcome to examine the Social Experiences Survey before you agree to participate in this research.

Should you choose to complete the survey, please return it either personally or via internal mail, to Bridget McPherson, School of Health Sciences (Division of Psychology), Building 201, Bundoora Campus, RMIT University.

**What are the risks associated with participation?**
Many of the questions in the Social Experiences Survey are personal, and you may therefore feel uncomfortable or upset as a result of your participation. It is important for you to be aware that the survey asks questions of a highly intimate, sexual, personal nature. These questions are presented in a direct manner. If you feel as if you might be unreasonably confronted, embarrassed or discomforted by such material, then you should not participate in the research. You are welcome to examine all of the survey materials before making a final decision as to whether you will participate.

If you are concerned about your responses or feel distressed, you should contact Bridget McPherson (Principal Investigator) or Dr David Smith (Project Supervisor) on
the above contact details when convenient. Ms McPherson or Dr Smith will sensitively and confidentially discuss any issues arising from participation, and suggest appropriate follow-up, if necessary. If you would like, Ms McPherson or Dr Smith can arrange a referral to a service specialising in relevant issues (e.g., trauma counselling, gay/lesbian services). If you would prefer to contact an agency that is unrelated to the research, please refer to page 22 of the Social Experiences Survey, which lists relevant confidential services that can provide assistance.

If you would like to participate in the research, but would prefer to do so at a later time, you are welcome to take a questionnaire and a Reply Paid envelope from the researcher, complete it at home, and post it using the envelope. If you prefer, please contact Dr David Smith, who will arrange for your participation to occur at a time and place that is convenient for you. You will be asked to provide your name and address, so a survey and a Reply Paid envelope can be sent to you. However, it will not be possible to match your contact details with your completed survey when you return it. Alternatively, you can complete the survey online, at http://www.rmit.edu.au/departments/ps/research/ses/support.htm.

What will happen to the information I provide?
This project does not request that you provide any identifying information. You will therefore remain anonymous. The data also remains confidential; it will only be viewed by the investigators. The information you provide will be kept in a secure environment for five years. As a consequence of your anonymity, no information that you provide can be used in any legal proceedings.

The results of the research will be collated and analysed in a student report, and possibly in an edited publication of the student report, for presentation at a conference, in a media release, or in the development of educational or prevention-based programs. However, individual responses will not be reported at any point. You are welcome to view the results of the research, which will be available in December 2006, at http://www.rmit.edu.au/departments/ps/research/ses/support.htm.

We are not obtaining written informed consent from you. Instead, we assume that you have given consent by your completion and return of the Social Experiences Survey.

What are my rights as a participant?
You have the right to withdraw your participation at any time, without prejudice, and the right to have any questions answered at any time. Once you have submitted your questionnaire, your information cannot be identified, and therefore cannot be withdrawn.

Can I participate in other similar research?
Our research group at RMIT University is currently conducting three studies that are similar to this one. The first study examines rape and rape-related issues. In particular, it looks at different individual attitudes towards rape. The second study looks at gay, lesbian and heterosexual sexuality and experiences of sexual and nonsexual aggression (both victims and non-victims of sexual and nonsexual aggression are needed for this study). Finally, the third study examines gay, lesbian and heterosexual patterns of relationships, dating, partnership, and sexuality.

Males and females over 18 are invited to participate in these studies. If you would like to participate in any of these studies, please contact Dr David Smith (Project Supervisor) on 9925 7523 (W), or david.smith@rmit.edu.au, or visit http://weblearn.rmit.edu.au/ses. We also ask that you provide a codename on the questionnaire. This codename will only be used to compare your responses in this
research to any research in the future. The codename should be something you will remember in future, and should not be something that will make it possible for you to be identified; for example, do not use your name. We ask that you use a word, followed by either the number of your parent(s)’ home or the day of your birthday. For example, if my parents live at 23 Smith St, my codename might be “bicycle23”. Alternatively, if my birthday is on the 20th February, my codename might be “bicycle20”.

Who should I contact if I have any questions?
You can contact Dr David Smith (Project Supervisor) on 9925 7523 during business hours, or at david.smith@rmit.edu.au.

Bridget McPherson
Psychology Doctoral Student
School of Health Sciences (Division of Psychology)
RMIT University

Dr David Smith
Project Supervisor, Senior Lecturer
School of Health Sciences (Division of Psychology)
RMIT University

Any complaints about your participation in this project may be directed to the Secretary, RMIT Human Research Ethics Committee, University Secretariat, RMIT, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 1745. Details of the complaints procedure are available from the above address.
Invitation to Participate in a Research Project  
Project Information Sheet

**Project Title:**
Patterns of social behaviours, sexual activity, and substance use amongst young people.

**Investigators:**
- Ms Bridget McPherson (Psychology Doctoral student, RMIT University, s3072622@student.rmit.edu.au, 9925-7376)
- Dr David Smith (Project Supervisor: Senior Lecturer, Psychology, RMIT University, david.smith@rmit.edu.au, 9925-7523)

You are invited to participate in a research project being conducted by Bridget McPherson at RMIT University. This information sheet describes the project in straightforward language, or ‘plain English’. Please read this sheet carefully and be confident that you understand its contents before deciding whether to participate.

**Why have you been approached?**
Participants for this research have been contacted via community agencies and hospitals. Appropriate permission has been obtained by managers. You have voluntarily obtained this questionnaire from within the venue. Your contact details have not been obtained, nor will they be, at any point.

**What is the project about? What are the questions being addressed?**
The project aims to investigate your experiences while socialising, including drinking alcohol, using drugs, and meeting people. The project also asks questions about behaviours relating to sexual experience.

**What are the benefits associated with participation?**
Although your participation will not result in any direct benefit for you, it will assist in eradicating the contradiction and confusion that currently surrounds the social experiences of young adults by providing valuable information.

**If I agree to participate, what will I be required to do?**
Your participation requires the completion of the Social Experiences Survey, which will take you approximately 20 minutes. You are welcome to examine the Social Experiences Survey before you agree to participate in this research.

Should you choose to complete the survey, please return it to the secure box located where you collected the survey. Only the investigators can open this box. The box will be cleared regularly by the principal investigator, Bridget McPherson. If you don’t feel comfortable with leaving your questionnaire in the box, please use a Reply Paid envelope, located next to the box, to post your questionnaire to the researchers.

**What are the risks associated with participation?**
Many of the questions in the Social Experiences Survey are personal, and you may therefore feel uncomfortable or upset as a result of your participation. It is important for you to be aware that the survey asks questions of a highly intimate, sexual, personal nature. These questions are presented in a direct manner. If you feel as if you might be unreasonably confronted, embarrassed or discomforted by such material, then you should not participate in the research. You are welcome to examine all of the survey materials before making a final decision as to whether you will participate.
Please take steps to ensure that other people do not view your questionnaire. If you notice that someone is watching you as you complete the questionnaire, or someone approaches you whilst completing the questionnaire, please cover up your questionnaire, or move to another part of the venue.

If you would like to participate in the research, but would prefer to do so at a later time, you are welcome to take a questionnaire, complete it at home, and return it to the box in this venue at a later date. A member of staff will advise you of when the box will be removed from the venue. If this arrangement is not possible, please contact Dr David Smith, who will arrange for your participation to occur at a time and place that is convenient for you. You will be asked to provide your name and address, so a survey and a Reply Paid envelope can be sent to you. However, it will not be possible to match your contact details with your completed survey when you return it. Alternatively, you can complete the survey online, at http://www.rmit.edu.au/departments/ps/research/ses/support.htm.

If you are concerned about your responses or feel distressed, you should contact Bridget McPherson (Principal Investigator) or Dr David Smith (Project Supervisor) on the above contact details when convenient. Ms McPherson or Dr Smith will sensitively and confidentially discuss any issues arising from participation, and suggest appropriate follow-up, if necessary. If you would like, Ms McPherson or Dr Smith can arrange a referral to a service specialising in relevant issues (e.g., trauma counselling, gay/lesbian services). If you would prefer to contact an agency that is unrelated to the research, please refer to page 22 of the Social Experiences Survey, which lists relevant confidential services that can provide assistance.

**What will happen to the information I provide?**

This project does not request that you provide any identifying information. You will therefore remain anonymous. The data also remains confidential; it will only be viewed by the investigators. The information you provide will be kept in a secure environment for five years. As a consequence of your anonymity, no information that you provide can be used in any legal proceedings.

The results of the research will be collated and analysed in a student report, and possibly in an edited publication of the student report, for presentation at a conference, in a media release, or in the development of educational or prevention-based programs. However, individual responses will not be reported at any point. You are welcome to view the results of the research, which will be available in December 2006, at http://www.rmit.edu.au/departments/ps/research/ses/support.htm.

We are not obtaining written informed consent from you. Instead, we assume that you have given consent by your completion and return of the Social Experiences Survey.

**What are my rights as a participant?**

You have the right to withdraw your participation at any time, without prejudice, and the right to have any questions answered at any time. Once you have submitted your questionnaire, your information cannot be identified, and therefore cannot be withdrawn.

**Can I participate in other similar research?**

Our research group at RMIT University is currently conducting three studies that are similar to this one. The first study examines rape and rape-related issues. In particular, it looks at different individual attitudes towards rape. The second study looks at gay, lesbian and heterosexual sexuality and experiences of sexual and nonsexual aggression (both victims and non-victims of sexual and nonsexual aggression are
needed for this study). Finally, the third study examines gay, lesbian and heterosexual patterns of relationships, dating, partnership, and sexuality.

Males and females over 18 are invited to participate in these studies. If you would like to participate in any of these studies, please contact Dr David Smith (Project Supervisor) on 9925 7523 (W), or david.smith@rmit.edu.au, or visit http://weblearn.rmit.edu.au/ses. We also ask that you provide a codename on the questionnaire. This codename will only be used to compare your responses in this research to any research in the future. The codename should be something you will remember in future, and should not be something that will make it possible for you to be identified; for example, do not use your name. We ask that you use a word, followed by either the number of your parent(s)’ home or the day of your birthday. For example, if my parents live at 23 Smith St, my codename might be “bicycle23”. Alternatively, if my birthday is on the 20th February, my codename might be “bicycle20”.

Who should I contact if I have any questions?
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Bridget McPherson
Psychology Doctoral Student
School of Health Sciences (Division of Psychology)
RMIT University

Dr David Smith
Project Supervisor, Senior Lecturer
School of Health Sciences (Division of Psychology)
RMIT University

Any complaints about your participation in this project may be directed to the Secretary, RMIT Human Research Ethics Committee, University Secretariat, RMIT, GPO Box 2476V, Melbourne, 3001. The telephone number is (03) 9925 1745. Details of the complaints procedure are available from the above address.
Appendix F

*The Social Experiences Survey*
Appendix G

Approval from the RMIT Human Research Ethics Committee
Phone: 9925 1745
Fax: 9925 3939
a.patterson@rmit.edu.au

26 April 2005

Ms Bridget McPherson
C/o School of Health Sciences, Division Psychology
RMIT Burnside

Dear Ms McPherson

*Project No 1/05 McPherson: Drink spiking: An examination of the prevalence, motivations and attitudes surrounding drug-facilitated sexual assault.*

Thank you for making the amendments and clarifications sought by the RMIT Human Research Ethics Committee to the above project. Dr Felton has reviewed these changes and is satisfied that the it now meets the HREC's requirements. Your project is now approved.

Please note the following that pertains to all approved projects:

Projects are normally approved for a period of three years from the date of this advice, but this is conditional on the receipt of annual reports. If your work is completed within twelve months a final report only, is required. The relevant forms are available from the Human Research Ethics Committee website. The address for this site is:

<http://www.rmit.edu.au/hd/rec>

If, as you proceed with your investigation you find reason to amend your research method, you should advise the RMIT Human Research Ethics Committee and seek approval of the proposed changes. If you decide to discontinue your research before its planned completion you must also advise the Committee of the circumstances.

In the event of any adverse effects on subjects, or unforeseen events, which may affect the ethical acceptability of your project you should immediately report to the Committee.
2.

Also we have been advised that any research data, which identifies people and that is stored in electronic form, should be held on CD, Zip Disk or diskette. It should not be stored on a computer that is connected to the web or to a network.

We wish you well with your project and look forward to your report.

Yours Sincerely

[Signature]

Adrienne Patterson
Secretary
RMUH Human Research Ethics Committee
Appendix H

Sources of Recruitment
Internet Coverage

Each of the following websites featured information about the current research, providing information to potential participants.

- Australian Centre for the Study of Sexual Assault, Australian Institute of Family Studies (Melbourne, Victoria)
- ADCA National Resource Centre
- Community News, Infoxchange Australia (Melbourne, Victoria)
  http://www.communitynews.infoxchange.net.au/
- Drink Safe Technology
  http://www.drinksafetech.com.au
- DrugInfo Clearinghouse (Melbourne, Victoria)
- Expert Guide
- Gynaecological Awareness Information Network (GAIN Inc)
- James Cook University Student Association (Queensland)
  http://www.jcu.edu/studentassoc/publications/bullsheet/2006/Bullsheet2-06.pdf
- Pro Bono Australia (Melbourne, Victoria)
- The Late Date Show (FOX FM radio)
- TRI Community Exchange (Sydney, NSW)
  http://www.cnet.ngo.net.au/
- NSW Rape Crisis Centre (NSW)
- Pink Sofa
  action=posts&fid=64&t
- Register of Australian Drug and Alcohol Research (RADAR)
- Triple J’s Hack
  http://www.anc.net.au/triplej/hack/notes/s1488345.htm
- Women’s Information Service (South Australia)
- Youth Coalition of the ACT
  http://www.youthcoalition.net/print.php?sid=1653
- Youth News, Infoxchange Australia (Melbourne, Victoria)
  http://www.youth.infoxchange.net.au/

**Support Services**

Each of the following services included coverage of the research within their offices and agencies, in newsletters, and/or via email networks. Information provided was relevant to potential participants.

- ACT Dept of Education & Training (Canberra, Australian Capital Territory)
- Advocates for Survivors of Child Abuse (ASCA; Australia)
- Alcohol and Drug Policy Unit, ACT Health (Canberra, Australian Capital Territory)
- ALSO Foundation (South Yarra, Victoria)
- Australian Centre for the Study of Sexual Assault, Australian Institute of Family Studies (Melbourne, Victoria)
- Centacare Central Highlands (Emerald, Queensland)
• Central Northern Adelaide Health Service, Central Northern Primary Health Care Services - North/ North East (Modbury, South Australia)
• Centre Against Sexual Violence (Woodridge, Queensland)
• Chisholm Institute (Student Liaison Unit; Melbourne, Victoria)
• Coffs Harbour Health Campus, Drug and Alcohol (Coffs Harbour, New South Wales)
• Department of Health and Community Services, Northern Territory Government of Australia (Northern Territory)
• Drug and Alcohol Office (Mt Lawley, Western Australia)
• Drug and Alcohol Services South Australia (Parkside, South Australia)
• Eagle Bar (LaTrobe University, Bundoora, Victoria)
• holiday program (Hindmarsh, South Australia)
• Holmesglen Institute of TAFE (Student Services; Melbourne, Victoria)
• Gynaecological Awareness Information Network (GAIN Inc; Subiaco, Western Australia)
• Gordon Institute of TAFE (Student Activities; Geelong, Victoria)
• LaTrobe University (Chisholm College; Bundoora, Victoria)
• LGBT Health Systems, Queensland AIDS Council (Queensland)
• Nimbin Neighbourhood and Information Centre Inc (Nimbin, New South Wales)
• Monash University (Department of Psychology; Clayton, Victoria)
• NSW Association for Adolescent Health (NAAH; New South Wales)
• Office for Women (Queensland)
• Phoenix House (Bundaberg, Queensland)
• Pregnancy Advisory Centre (Woodville, South Australia)
• Port Pirie Regional Health Service Inc (Port Pirie, South Australia)
• RaveSafe (Melbourne, Victoria)
• Reach Out!
• Regional Strategies, Violence Prevention, Communities Division
• Regional Women’s Health Resource Service (Geelong, SurfCoast & Queenscliffe, Victoria)
• RMIT University (Womyn’s Department; Bundoora, Victoria)
• RMIT University (Department of Psychology; Bundoora & Melbourne, Victoria)
• Salvation Army, Australian Southern Territory (Box Hill, Victoria)
• St Vincent de Paul Society (SA) Inc (Adelaide, South Australia)
• TAFE SA Kadina & YorkeTown Campuses (South Australia)
• Transgender Victoria (South Melbourne, Victoria)
• University of Melbourne (Student Union; Melbourne, Victoria)
• University of Sydney (Health Education Unit, Exposed; Sydney, New South Wales)
• University of Western Sydney (Student Association; Penrith South, New South Wales)
• University of Western Sydney (Student Support Services; Penrith South, New South Wales)
• WA Synod - Social Justice and Uniting International Mission (Western Australia)
• Women’s and Children’s Health Service (South Australia)
• Women’s Health (Bendigo, Victoria)
• Women’s Health Grampians (Horsham, Victoria)
• Women’s Information & Referral Centre (WIRC; Canberra, Australian Capital Territory)
• Women’s Information Service (Adelaide, South Australia)
• women’s refuge (Wallsend New South Wales)
• Youth Coalition of the ACT
Appendix I

Principal Component Analysis of Alcohol Expectancies
Table I1
Principal Component Analysis of Alcohol Expectancies

Rotated component matrix\(^a\)

<table>
<thead>
<tr>
<th>Component</th>
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\(^a\) Extraction method: Principal Component Analysis.
Rotation method: Varimax with Kaiser Normalization.
Rotation converged in 7 iterations.
Note: Refer to pages 4 and 5 of the SES (see Appendix F) for details of each variable (item numbers in table pertain to question numbers in SES).
Appendix J

Principal Component Analysis of Risk-Taking Behaviours
Table J1
Principal Component Analysis of Risk-Taking Behaviours

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*a Extraction method: Principal Component Analysis.
Rotation method: Varimax with Kaiser Normalization.
Rotation converged in 7 iterations.

Note: Refer to page 11 of the SES (see Appendix F) for details of each variable (item numbers in table pertain to question numbers in SES).
Appendix K

*Principal Component Analysis of Protective Behaviours*
**Table K1**

*Principal Component Analysis of Protective Behaviours*

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*a* Extraction method: Principal Component Analysis.

Rotation method: Varimax with Kaiser Normalization.

Rotation converged in 4 iterations.

**Note:** Refer to page 12 of the SES (see Appendix F) for details of each variable (item numbers in table pertain to question numbers in SES).
Appendix L

Principal Component Analysis of Drink Spiking Perpetration
Table L1

Principal Component Analysis of Drink Spiking Perpetration

Rotated component matrix$^a$

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$^a$ Extraction method: Principal Component Analysis.

Rotation method: Varimax with Kaiser Normalization.

Rotation converged in 3 iterations.

Note: Refer to page 7 of the SES (see Appendix F) for details of each variable (item numbers in table pertain to question numbers in SES).
Appendix M

*Principal Component Analysis of Willingness to Perpetrate Drink Spiking Activities*
Table M1
Principal Component Analysis of Willingness to Perpetrate Drink Spiking Activities

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*Extraction method: Principal Component Analysis.*

Rotation method: Varimax with Kaiser Normalization.

Rotation converged in 3 iterations.

**Note:** Refer to page 6 of the SES (see Appendix F) for details of each variable (item numbers in table pertain to question numbers in SES).