

**ALCOHOL USE OF STUDENTS AT
THE UNIVERSITY OF STELLENBOSCH**

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of Arts in Clinical Psychology at the University of Stellenbosch**

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ABSTRACT

The present study stems from a concern with the possible occurrence of alcohol abuse on a university campus. The major focus is an exploration of the drinking habits of mostly undergraduate students. An adequate understanding of the above would simplify the task of the university authorities of formulating a relevant alcohol policy and action plan. The survey involves a self-completion questionnaire. The data analysis concentrated on Pearson's correlations and chi-square tests. Significant relationships between the level of alcohol use on the one hand and gender, residence, language, other substance abuse, sport participation, religion, moral values, and sexual activity on the other hand was found. Finally a profile of high-risk, heavier drinking students are provided.

OPSOMMING

Die huidige studie spruit uit 'n besorgdheid oor die voorkoms van alkohol misbruik op 'n universiteitskampus. Die primêre fokus is 'n verkenning van die drinkgewoontes van hoofsaaklik voorgraadse studente. 'n Omvattende begrip van bogenoemde sal die taak vergemaklik van die universiteitsowerhede om 'n toepaslike alkoholbeleid en –aksieplan te formuleer. Die ondersoekende studie behels 'n selfvoltooings vraelys. Die data-analise fokus op Pearson se korrelasies en chi-kwadraat toetse. Beduidende verbande is gevind tussen vlak van alkohol gebruik aan die een kant en geslag, verblyf, taal, ander substansgebruik, sportdeelname, godsdiens, morele waardes en seksuele aktiwiteit aan die ander kant. Laastens word 'n profiel van die hoë risiko, swaarder drinkende studente verstrekk.

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1. INTRODUCTION

On student campuses the use of alcohol is associated with a variety of drinking-related problems. Perkins and Wechsler (1996) stated that American College presidents rated alcohol abuse as the number one problem on campus. The University of Stellenbosch, as well as other South African universities, is also concerned about alcohol abuse. A recent report by the University of Stellenbosch dealt with this problem and in response the Board of the University adopted a policy on Alcohol Abuse (L. R. van der Westhuizen, personal communication, December 9, 1998).

Treise, Wolburg and Otnes (1999) associated consumption of alcohol with traffic fatalities, unplanned and unsafe sexual activity, physical and sexual assault, unintentional injuries, other criminal violations, interpersonal problems, physical or cognitive impairment, and poor academic performance. In a nationwide American study (Perkins & Wechsler, 1996) nearly 44% of college students qualified as abusers of alcohol. Plüddemann, Theron and Steel (1999) reported that 54% male and 50% female students at the University of Stellenbosch sometimes drank until drunk, while 12% of the males always drank until drunk. Jones-Webb et al. (1997) identified alcohol to be a factor in 21 percent of college dropouts, in over 50 percent of sexual assaults on campus and contributory to a tenfold increase in unplanned and unprotected sex. Student abusers of alcohol were more likely to be involved in trouble with campus police, damaging property and getting injured. Sartor (1990) concluded that in South Africa individuals under 21 years account for nearly one in four fatalities associated with driving while intoxicated.

The institutionalized campus culture is widely regarded as the most important factor that determines student drinking habits. It defines the way in which the use of alcohol forms part of the social roles and lives of students and refers to the how, when and where of student drinking habits (Rabow & Duncan-Schill, 1995). According to Engs, Diebold and Hanson (1996) most students perceived drinking as part of the university experience, while the Commission on Substance Abuse at Colleges and Universities (quoted in Treise et al, 1999) described consumption of alcohol by college students as an inevitable rite of passage. In line with the literature it could be assumed that the Stellenbosch campus culture is central to the local alcohol abuse problem. However, little research has been done with regards to the extent of the problem and subsequently the formulation of an accurate prevention and treatment plan.

In order to ascertain accurate and reliable information about the drinking culture on campus, the present study will investigate and identify the relevant factors associated with the cause, reinforcement and maintenance of alcohol abuse on Stellenbosch campus. If the drinking culture on Stellenbosch campus can be adequately researched and understood, the task of formulating a relevant policy and plan of action will be simplified. What is needed, according to Parry and Bennetts (1998), is the formulation of an intentional policy, which does not rely on contradictory, unevaluated and short-term bits and pieces.

2. FACTORS ASSOCIATED WITH ALCOHOL ABUSE

A literature review identified various factors that have been associated with alcohol abuse. Those that are relevant to the present study will be discussed.

2.1 Gender

Various authors (MacDonald, Fleming & Barry, 1991; Quigley & Marlatt, 1996) found gender to be associated with differing rates of alcohol abuse. Parry & Bennetts (1998) reported that according to research a greater level of problem drinking could be seen among South African males. On average, alcohol consumption rates appeared to be approximately 15% to 20% higher for men than for women in all race groups. Plüddemann et al. (1999) found that on average male drinkers drank more than female drinkers did at the University of Stellenbosch.

According to Lo (1995) and Jones-Webb et al. (1997), male students were more likely than female students to drink until intoxicated. Minugh, Rice and Young (1998) established that greater physical activity in women was significantly related to more frequent drinking. For men, however, greater physical activity was associated with consuming alcohol in greater quantities. Relative to bodyweight, men also drank more, drank more often and were more likely to be frequent heavy drinkers (Canterbury et al., 1992; Nelson & Wittchen, 1998). Support for the trend is Plüddemann et al.'s (1999) finding that on average males drank twice weekly and females once, while 33% of the males drank 3 times or more per week at the University of Stellenbosch. Other studies indicated that women constituted half as many heavy drinkers as men did, but reported an equal number of alcohol-related problems (O'Hare, 1990). In a gender analysis Engs et al. (1996) reported that about

one out of three males compared to one out of five females fell into the “at risk” category.

With regard to public abuse problems which endangered others and might involve legal repercussions Perkins (1992) found that males remained much more problematic drinkers than their female student counterparts. Curtis, Genaro, Roberts and Kayson (1990) as well as Engs et al. (1996) confirmed the hypothesis that men would also have more drinking-related problem behaviour than women. Conversely, males were more likely than females to normalize and tolerate problem drinking (Sigelman, Gurstell & Steward, 1992).

Klein (1994) reported that men, contrary to women, did not demonstrate any significant changes in drinking patterns or alcohol-related attitudes over the course of their college years, while women seemed to outgrow irresponsible drinking. According to Williams and Ricciardelli (1996) females appeared to experience a greater degree of culturally and biologically induced conflict and resultant inhibition about risky drinking.

Wechsler, Dowdall, Davenport and Rim (1995) stated that different measures of (binge) drinking standards should be used for females and males. They found that women, who typically drank four drinks in a row, had roughly the same likelihood of experiencing drinking-related problems as men who typically drank five drinks in a row. They inferred that the use of the same norms for both sexes would underestimate binge drinking and the resulting negative health risks for women. With regard to mental health Parry and Bennetts (1998) stated that women who misused alcohol were at increased risk of suffering from depression, low self-esteem and alcohol-related physical problems, and might have had a history of sexual abuse.

There appears to be consensus in the literature that problematic drinking and alcohol abuse is significantly higher for males. Furthermore, the differing standards in evaluating male and female drinking volumes and habits seem scientifically appropriate.

2.2 Age

Studies indicate that the use of alcohol and experiences of intoxication at a younger age are factors that are associated with increased alcohol consumption levels and greater endorsement of alcohol-related problem behaviours. Research has shown that the experience of intoxication at an early age can lead to increased alcohol consumption (Curtis, et al., 1990; Dana, Pratt, Kochis & Andrews, 1993; Lichtenfield & Kayson, 1994; Vogler, Webber, Rasor, Bartz, Levesque, 1994; Werner, Walker & Green, 1994). This was supported by findings that the student age group of under 21 was most at risk for alcohol abuse (Engs et al., 1996).

It was found that students who drank more heavily in high school were more likely to be binge drinkers in college than students who drank lightly at school, suggesting that alcohol use was not predominantly a behaviour that was learned in college (Weschler, Isaac, Grodstein & Sellers, 1994). Longitudinal research pointed to adolescent problem drinkers as having a higher likelihood of being problem drinkers in early adulthood than those individuals who abstained or drank moderately (Donovan, Jessor & Jessor cited in Borsari & Carey, 1999). Students that had committed an offense of driving under the influence also tended to have been younger at the time of their first use of alcohol, along with engaging more often in binge drinking (Borges & Hansen, 1993).

It was reported by Plüddemann et al. (1999) that 50% of the male and 70% of the female second year students at the University of Stellenbosch started drinking alcohol at university.

There seems to be general agreement in literature that the earlier a person starts drinking, the more likely are alcohol related problems during the student years. Cognizance should also be taken that many students start drinking at university.

2.3 Academic Year

Marlatt et al. (cited in Borsari & Carey, 1999) identified incoming freshmen as high-risk drinkers on the basis of their alcohol consumption during their senior year in high school, while Presley et al. (cited in Treise et al., 1999) cited that freshmen were more likely to drink and to drink more often than seniors. Nagoshi et al. (1994) reported that especially among first-year students, participation in drinking games

that result in heavy alcohol consumption facilitated the misperception of college drinking norms. Treise et al. (1999) and Rocha-Silva, De Miranda, and Erasmus (cited in Parry & Bennetts, 1998) reported that underage students' motivation for drinking was to get drunk, symbolizing a rite of passage into adulthood, while when they turned 21, drinking became a social event. Among drinking students there were found to be a gradual decrease in the percentage of heavy drinkers from the first to fourth year of college. However, there was no significant difference in the average number of drinks consumed per week (Engs et al., 1996).

The literature provides inconclusive evidence regarding the relationship between seniority and the alcohol consumption of students.

2.4 Residence

The appeal and value of fraternity membership to the college student is not solely based on drinking activities, but provides the student with a sense of security and trust that comes from belonging to a group and identifying with others in the community. It seems that alcohol is often involved to facilitate and maintain many of these beneficial aspects of fraternity life (Arnold & Kuh, cited in Borsari & Carey, 1999; Hunt & Rentz, cited in Borsari & Carey, 1999).

Students living in fraternity houses were much more likely than their peers to endorse the abuse of alcohol (Borsari & Carey, 1999; Engs et al., 1996; Goodwin, 1990; Klein, 1994). According to Klein (cited in Borsari & Carey, 1999) fraternity house residents experienced nearly twice as many problems with alcohol as students who lived in on-campus apartments, while the survey conducted by Presley, Meilman and Lyerla (cited in Treise et al., 1999) showed on-campus students, especially those living in fraternities and sororities, drank more than those living off campus. Perkins and Wechsler (1996) found that the strongest predictor for alcohol abuse was fraternity or sorority residence or membership for which between 80 and 86 percent of college residents qualified. Frequent heavy drinking and dangerous driving practices were associated with interest in college social organizations and especially college drinking game participation (Canterbury et al., 1992; Nagoshi, Wood, Cote & Abbit, 1994; Quigley & Marlatt, 1996). A survey among students involved in college athletics pointed to residence in a fraternity or sorority, a party lifestyle, engagement in other risky behaviours, and previous bingeing in high school as strong predictors of

heavy alcohol consumption (Wechsler, Davenport, Dowdall, Grossman & Zanakos, 1997).

Borsari and Carey (1999) identified four factors that lead to fraternity house residents entering into a physical environment that promoted abusive drinking. Firstly, minimal constraints were placed on the use of alcohol. Secondly, they drank more frequently than those living in dormitories. Thirdly, tolerance of intoxicated behaviour appeared to be greater in the fraternity house than other living arrangements. Fourthly, the physical assistance given to sick or impaired drinkers protected them from negative consequences, downplays drinking problems, and provided an enabling environment for continued alcohol abuse.

Goodwin's (1990) findings suggested however that fraternities/sororities per se do not cause alcoholic drinking. At colleges with no such organizations regular patterns of drinking were found to be prevalent, especially in bars and off campus housing. According to Jones-Webb et al. (1997), drinking in public locations was associated with greater alcohol consumption. Jih, Sirgo and Thomure (1995) found that students drank more often to celebrate happy events and not when they were unhappy or disappointed.

Borsari and Carey (1999) reported that many students came to college with established drinking habits, and that the fraternity provided an arena for the continuity of precollege drinking patterns. This could be maladaptive, according to Agostinelli and Miller (cited in Borsari & Carey, 1999), as the more often the individual drank, the less likely it was that heavy alcohol use would be viewed as risky. However, it seemed that if the "house image" was positively associated with alcohol, it attracted heavier drinkers through a process of selective affiliation (Larimer, Irvine, Kilmer & Marlatt cited in Borsari & Carey, 1999) and might, through enabling continuation of heavy alcohol use, influence freshmen to increase their drinking (Borsari & Carey, 1999).

By forming a close-knit, cohesive group, fraternity members affiliate less often with other groups of students who may drink more moderately. This can create a social insulation and a lack of social comparison, which is compounded if the individual lives in the fraternity house (Borsari & Carey, 1999).

In summarizing the literature it seems that the sense of belonging and socializing connected with fraternity membership are often associated with drinking activities. Invariably fraternity appears to promote the drinking culture. It should however be noted that many students who enter the fraternity already have heavier drinking habits and that drinking at universities is certainly not limited to those living in on campus university residences.

2.5 Peer Group and Self-Esteem

Sherry and Stolberg (cited in Borsari & Carey, 1999) reported that peer pressure was the most consistent and potent predictor of the frequency and level of consumption of alcohol. Jones-Webb et al. (1997) found a stronger association between peer alcohol use and drinking consequences among women than men. Developing and fostering friendships, maintaining a group identity, fitting in with the crowd, norms of significant others, best friend's drinking patterns and self-efficacy in situations characterized by social pressure were examples of social factors associated with increased alcohol consumption levels and alcohol-related problem behaviours (Borsari & Carey, 1999; Jones-Webb et al., 1997; Quigley & Marlatt, 1996; Werner et al., 1994; Wood, Nagoshi & Dennis, 1992; Young, Oei & Crook, 1991).

Borsari and Carey (1999) distinguished between two types, namely direct and indirect peer pressure. They conceptualized indirect peer pressure as referring to the availability of heavy drinking models and the vicarious observation of reinforcement for engaging in drinking behavior. Brennan, Walfish and AuBuchon (cited in Borsari & Carey, (1999) found that involvement with a close group of friends who drank was positively associated with greater frequency and quantity of alcohol use. Borsari and Carey (1999) pointed out that the individual in the fraternity environment might feel strong pressure to drink heavily if he wanted to be accepted and well-liked. Cashin, Presley and Meilman (cited in Borsari & Carey, 1999) pointed out that fraternity leaders often drank as heavily, if not more heavily than their fellow fraternity members. Lied and Marlatt (cited in Borsari and Carey, 1999) reported that men who drank heavily were, in contrast to peers who were occasional drinkers, more influenced by models who drank heavily.

Direct peer pressure was conceptualized as involving direct invitations or urging a fraternity pledge to drink or suffer "social punishment" for not drinking (Borsari & Carey, 1999). Schall, Kemeny and Maltzman (cited in Borsari & Carey, 1999)

reported that college students who declined to drink in a social setting could experience social sanctions from the group. Sanders (cited in Borsari & Carey, 1999) found that students who were more compliant and socially oriented were more likely to complete the pledge period than students who were more independent.

Parish and Parish (1991) found that non-users of alcohol had significantly less peer support than users, but higher self-concepts than heavy users. Low self-esteem and self-efficacy contributed significantly to alcohol abuse (Evans and Dunn, 1995; Pullen, 1994). Findings by Plüddemann et al. (1999) showed that at the University of Stellenbosch male non-drinkers seemed to have a higher self-consciousness than male moderate and severe drinkers, while male severe drinkers scored significantly lower than male moderate drinkers. Parish and Parish (1991) found that students with low self-esteem were more likely to consume alcohol in an effort to gain peer acceptance and support. Students with better refusal skills had higher levels of alcohol misuse prevention. They reported less susceptibility to peer pressure, greater internal health locus of control, greater self-esteem and less alcohol use and misuse (Shope, Copeland, Maharg, Dielman & Butchart, 1993).

Research indicated that most students did not accurately perceive the real norms regarding peer alcohol use. Individuals seemed to generalize inappropriately about their peers' drinking behaviours on the basis of observing a few peers engaging in heavy drinking episodes, resulting in an overestimation of the group's average alcohol consumption (Borsari & Carey, 1999). In other words, they perceived their peers to be heavier users of alcohol and as having more permissive attitudes than in reality (Baer cited in Borsari & Carey, 1999; Perkins & Weschler, 1996). According to Borsari and Carey (1999), one consequence of such norm overestimation was that individuals were less likely to question their own drinking if they thought those around them were drinking more or had more permissive attitudes. Another consequence was that individuals might change their behaviour when for instance they were trying to gain access to a desired peer group and attempted to match their own drinking levels to those they perceived (Baer, Stacy & Larimer cited in Borsari & Carey, 1999).

Perceptions of the peer norm were thus found to be accurate predictors of alcohol abuse. However, it tended to be directly related to whether a student had a more permissive attitude, or believed in more restrained drinking (Perkins & Weschler, 1996).

There also seemed to be a relationship between binge drinking episodes and the emotional closeness of social interaction (Nezlek, Pilkington & Bilbro, 1994). Pendorf (1992) reported that heavy use of alcohol correlated with participation in social and vocational activities. The use of alcohol is also often associated with social facilitation, stress control, conformity or to be part of the group (Beck, Thombs & Summons, 1993).

From the above mentioned it is clear that peer pressure plays an important role in the enhanced drinking habits of students - so much so that it extends to socio-psychological aspects such as popularity, group acceptance and self-esteem.

2.6 Beliefs

Beliefs about alcohol use and abuse play a significant role. The beliefs that alcohol is acceptable among youth, as well as that it fits with personal values, are associated with increased alcohol consumption (Hansen, 1992).

Klein (1992) found a strong association between students' beliefs about drinking and their own alcohol use patterns and problems. Students' definitions of social and problem drinking influenced the drinking context (Engwall & Goldstein, 1990). Posavac (1993) reported that many students continued to believe that excessive drinking was bad, but that their own level of drinking could not lead to any problems. They also seemed to distance earlier effects, called "problem drinking", from the longer-term accumulation of consequences, known as "alcoholism" (Williams & Ricciardelli, 1996). Parry & Bennetts, (1998) cited research that showed young people to often be "intellectually" aware of the dangers of alcohol misuse and even to look down on heavy drinkers, but still to be favourably inclined to alcohol use. It seemed that they perceived themselves not to be at risk from alcohol and its associated problems and were inclined to take risks such as swimming after drinking or participating in drinking competitions. Irwin (cited in Parry & Bennetts, 1998) stated that during adolescence, risk-taking was perceived as normal transitional behaviour. A significant relationship was also found between students' admission of alcoholism and their intentions to change alcohol-related behaviour (Phillips & Heesacker, 1992).

The trend in literature is that a discrepancy exists between the beliefs that students have about the dangers of alcohol consumption in general and their own drinking.



2.7 Expectancies

Positive alcohol expectancies contributed to increased alcohol consumption and related problem behaviour (Evans & Dunn, 1995; Laurent, Catanzaro & Callan, 1997; Quigley & Marlatt, 1996; Wood et al., 1992). Research showed that students who came to college as heavy drinkers tended to have more permissive attitudes and expectancies concerning alcohol abuse that might further increase the risk of abusive drinking, such as considering someone very drunk to be amusing (Klein, 1994; Haworth-Hoepfner, Globetti, Stem & Morasco cited in Borsari & Carey, 1999). Positive alcohol expectancies included that drinking would relieve tension and help in meeting new people, especially members of the opposite sex (Goodwin, 1990). According to Treise et al. (1999) students expected alcohol to function as an escape mechanism from the tension stemming from both coursework and social pressures. They further pointed out that drinking provided security for students through their knowing that they could go to a particular spot on a particular night and expect a particular experience. Research found a definite correlation between the motivation of drinking by expectancies of tension reduction and a resultant increase for high risk drinking behaviour, thus becoming an instrument for the management of an individual's social life and psychological tensions (Hittner, 1995; Hutchinson, Patock-Peckham, Cheong & Nagoshi, 1998; Parry & Bennetts, 1998). It was stated by Ziervogel, Morojele, Van de Riet, Parry and Robertson (cited in Parry & Bennetts, 1998) that binge-drinkers were more inclined towards short-term gratification than non binge-drinkers.

Williams and Ricciardelli (1996) found that positive expectancies of increased social assertiveness, as well as physical and social pleasure led to increased quantity of drinking among women, while expectancies of power and sexual enhancement led to increased frequency of drinking. They found that for men expectancies of increased social assertiveness was positively correlated with quantity of drinking.

Williams and Ricciardelli (1996) reported that alcohol expectancies mediate the relationship between heavier drinking and the developmental signs of alcohol dependence. Students' positive and negative outcome expectancies and subjective evaluations at the beginning of the year were significantly correlated with year-end drinking patterns (Werner, Walker & Greene, 1995).

According to Thombs (1991) a set of alcohol expectancies could distinguish between problem and non-problem drinkers even better than a set of demographic variables. Werner, Walker and Greene (1993) concluded that students' expectations of positive outcomes and their subjective evaluations of both positive and negative outcomes from drinking, explained 29% of the variance in drinking patterns.

2.8 Family History

Research associated having a heavy drinking father, or other family members, with drinking problems, with increased alcohol consumption levels and alcohol-related problem behaviours (Barns, Welte & Dintcheff, 1992; Lichtenfield & Kayson, 1994; Pullen, 1994). The research by Vaillant and Hiller-Sturmhöfel (1996) indicated a genetic predisposition for alcoholism with children of alcoholic parents with significantly fewer people without alcoholic relatives becoming alcoholics. Merinkas (cited in Parry and Bennetts, 1998) reported studies to show a risk of seven times greater for the development of alcoholism among first degree relatives of alcoholics than among controls. Among adoption studies, a two and a half times risk, regardless of the home environment, were found. However, certain studies did not find the predicted association between positive family background for alcohol abuse and the amount of alcohol consumed per week among college students (Engs, 1990).

Vogler et al. (1996) found that students who grew up in a family with higher family income were more at risk for heavy drinking.

2.9 Culture and Race/ Ethnicity

Cultural factors were found to contribute to varying alcoholism rates. Terrell (cited in Parry & Bennetts, 1998) suggested key cultural factors to include acculturation experiences, differing sources of stress and coping mechanisms, social support variations, and beliefs about substance use. The differences might be attributed to variations in cultural attitudes toward alcohol consumption (Quigley & Marlatt, 1996; Vaillant & Hiller-Sturmhöfel, 1996). According to Curtis et al. (1990) white students would report more drinking-related behaviours than black or hispanic students would.

Reese and Friend (1994) reported that American black and white students responded differently to the Alcohol Expectancy Questionnaire. White students held more positive expectancies than black students for the physical/social pleasure,

social assertiveness and tension reduction. Engs et al. (1996) found that being a white male under age 21 put a student into the group most at risk for alcohol abuse.

Parry and Bennetts (1998) however, disagreed that alcohol misuse was limited to any particular race group. They reported that research on binge-drinking among South African high school students showed high levels of risky drinking among all race groups, including white males. When looked at proportionally on the other hand, the number of current drinkers was greater among whites.

2.10 Religion

Religious affiliation and strength of religious convictions were found to contribute to a person's decisions concerning alcohol consumption. Certain religious groupings such as Muslims, Mormons, and Jehovah's Witnesses do not permit alcohol consumption, while others such as evangelical or fundamentalist groupings have strong taboos against drunkenness (Parry & Bennetts, 1998). Research by Engs et al. (1996) indicated that non-religious students were most at risk for alcohol abuse. Women with stronger religious convictions were shown to consume less alcohol and were less likely to engage in risky sexual behaviour than men (Poulsen, Eppler, Satterwhite, Wuensch & Bass, 1998).

Broadly speaking the literature indicates a negative relationship between religious involvement and alcohol consumption. The strength of the relationship is apparently influenced by factors such as gender or particular religious affiliation.

2.11 Access to Alcohol

McCall (1996) argued that restriction of access to alcohol might help in controlling alcohol consumption. He referred to an alcohol availability area that was divided into three categories, namely physical (relationship between alcohol consumption and the number of retail outlets in the community), economic (relative cost of alcohol and per capita consumption), and social availability (role of media and target advertising as it relates to consumption). Treise et al. (1999) stated that proximity to other students and bars played a large role in students' decision to drink. Parry and Bennetts (1998) pointed out that there was a 23.5% increase in liquor outlets between 1996 and 1997 in South Africa. They also predicted increased availability of alcohol with the legalization of the sale thereof from supermarkets with a subsequent reduction in

alcohol prices. They predicted that the increased access to a greater variety of alcoholic beverages would in turn dramatically increase access and use in many communities, particularly middle-class where there were greater restrictions in the past.

A study by Lockhart, Beck and Summons (1993) supported previous research that showed higher alcohol prices to contribute to lower alcohol consumption by youth, as well as a decrease in alcohol-related problems. However, they came to the conclusion that it might be possible for youth to maintain high levels of alcohol consumption at the same price after a tax increase by purchasing less expensive brands of liquor. Limited evidence was also found that an increase in alcohol prices might lead to positive changes in alcohol-related attitudes, perceptions, and behaviours among young people.

Changes in legal drinking age did not seem to have a marked effect on the number of college students who drank alcohol (Davis & Reynolds, 1990). It was speculated by Hanson and Engs (1992) that increasing the legal age for drinking might inadvertently encourage drinking in environments lacking responsible adult supervision where excessive consumption of alcohol tended to be encouraged.

From the literature it is quite clear that easier physical, social, and economic access to alcohol promotes the use and misuse of it. Indications are that legal restrictions may even have the opposite effect from preventing misuse of alcohol.

2.12 Other Substance Abuse

Students meeting DSM alcohol abuse criteria reported a greater lifetime substance abuse and were more likely to have used marijuana during the previous six months (MacDonald, Barry & Flemming, 1992). The use of tobacco was strongly associated with increased use of alcohol (Minugh et al., 1998; Werner et al., 1994).

3. CONSEQUENCES OF ALCOHOL ABUSE

Hansen (1993) concluded that the lack of awareness of the consequences of alcohol use contributes to increased alcohol misuse. Consequences from heavy use of alcohol included less enjoyment of academics and poor academic performance, greater potential for conflict with teachers and friends, overspending, getting hurt or

injured, damaging property and other criminal violations, and physical or cognitive impairment (Burel, 1993; Engs et al., 1996; Pendorf, 1992; Poulsen et al., 1998; Quigley & Marlatt, 1996; Treise, et al., 1999).

3.1 Academic Performance

Goodwin (1990) speculated that low academic performance could possibly be seen as a cause and effect of student drinking: the higher the consumption, the lower the grade, with a feedback effect whereby lower grades in turn promoted drinking. He found that satisfaction with academic standing was positively related to drinking. He found that people who were thus satisfied, even though their level of achievement might be low, apparently felt freer to drink.

Heavy drinking seemed to affect not only the drinker but also the students who had to share the same college environment. Students studying where drinking levels were high were found to be four times more likely to suffer at least one problem as a result of others' excessive use of alcohol. These adverse effects ranged from having their studies interrupted to sexual assault (Wechsler, Davenport, Dowdall, Moeykens & Castillo, 1994).

3.2 Risk Taking Behaviour

Alcohol abuse might be a marker for deeply embedded risk taking behaviour (Canterbury et al., 1992). Young adults were found to be over-represented among alcohol-related traffic fatalities (Quigley & Marlatt, 1996). This was probably the result of impaired judgement during intoxication (Poulsen et al., 1998). Research by Buelow and Koeppel (1995) found that scores on an alcohol abuse measure showed blackout risk taking and intrusiveness of stressful thoughts about the blackout incident to be significantly correlated.

Research showed that alcohol was strongly related to risky sexual behaviour both for men and women as well as having a significant bearing on their number of sexual partners (Poulsen et al., 1998). This put individuals at risk from contracting HIV and other sexually transmitted diseases (Parry & Bennetts, 1998). Research reporting that students were more likely to have engaged in sexual activity, had more sexual partners, and abandoned condom use when under the influence of alcohol, was cited by Prince and Bernard (1998). The results of their study correlated with previous research that approximately 60% of students consumed alcohol prior to sex at least

on occasional basis, and that 10% were doing so on a regular basis. Males reported a higher rate of drinking prior to sex than females, which was consistent with higher male drinking patterns. Meilman, et al. (cited in Prince & Bernard, 1998) found the correlation between alcohol and unsafe sexual practices to be so strong that the effects of alcohol on safer sex behaviours tended to be dose related, with the likelihood of participating in safer sex behaviours decreasing as the level of alcohol consumption increased.

It appeared that men were more likely to engage in risky sexual behaviour while women, overall, seemed more likely to emphasize their belief in the sex-enhancing effects of alcohol. This group of problem drinking women was nevertheless also at risk to engage in unprotected sex (O'Hare, 1998). According to Meilman (cited in Prince & Bernard, 1998) females engaged in unsafe sexual behaviours, due to the influence of alcohol, twice as often as males.

Nicholson et al. (1998) reported males to be four times more likely to be involved in acts of non-sexual violence with members of the same sex than were females. Alcohol still appeared to be twice as likely to have been involved in male non-sexual violence than in the case of females.

3.3 Health Problems

Burrell (1992) reported that most students who are heavy drinkers had experienced alcohol-related physical problems. Engs and Aldo-Benson (1995) found that consumption of a certain number of drinks per week could lead to health problems among students. They concluded that while consumption of over 22 drinks per week was associated with increased upper respiratory infections, consumption of over 28 drinks per week was associated with acute illness. A person's mental state could also be affected by alcohol use and depression might result from or be exacerbated by excessive drinking (Parry & Bennetts, 1998).

Parry and Bennetts (1998) cited international research as providing ample evidence to suggest that problems associated with alcohol were not limited to heavy drinkers, but were distributed widely among the general drinking population. It would thus be a mistake to focus only on the heavy drinking population.

The consequences of alcohol abuse such as poor academic performance, physical problems, overspending, criminal violations, traffic fatalities, sexual risk behaviour, and violence are reported in the literature as having a consistently negative influence in the lives of individuals.

4. PREVENTION PROGRAMMES

Perkins and Weschler (1996) stated that all colleges had their own unique culture and traditions, resources and priorities, and relationship within the community. This mostly included a drinking culture that might compromise the quality of students' education, social lives, as well as their health and safety. A prevention program, based and focused on these factors, would thus be needed to change the prevailing drinking culture. The prevention program, as stated by Parry and Bennetts (1998) should not only be primary of nature, but also include intervention efforts aimed at people at risk from problem drinking (secondary prevention targeting e.g. young males) and people who already had an alcohol abuse or dependence problem (tertiary prevention).

4.1 Prevention Approach and Strategies

It is of importance that the approach used must be population-based (e.g. prevention programs designed for the whole Stellenbosch student community and not only the students who drink heavily), as heavy drinking and its associated problems are sensitive to this approach. This approach will ensure an overall reduction in alcohol consumption, which also has the effect of reducing problems at all levels of drinking. A population-based approach is needed because influencing the perceptions of reduced drinking levels and patterns of drinking will help shape an environment where light drinking is the norm which in turn will exert pressure on heavy drinkers to reduce their consumption (WHO Regional Office for Europe cited in Parry & Bennetts, 1998).

An example of four strategies for the prevention of binge drinking among young people was given by Parry and Bennetts (1998). Firstly, it was proposed that interventions should be designed for the particular communities they were meant to reach. Secondly, the attitudes of young people towards binge drinking should be modified through educational programs that addressed perceived positive consequences of binge drinking and introduced alternative activities. Thirdly,

strategies for the reduction of the perceived behavioural control experienced by binge-drinkers, such as a reduction in the availability of alcohol, should be formulated. Fourthly, the influence of normative factors and self-identity on the intentions of males to engage in binge drinking should be integrated into life skills programmes.

4.2 Focus of Prevention

Research by Werch, Pappas and Castellon-Vogel (1996) showed that programmatic goals on which universities focused most commonly were increased knowledge about drugs (92%), enhancing anti-drug attitudes (87%), promoting a drug-free environment (85%), and enhancing anti-drug behaviours and skills (72%). The most common forms of communication used in prevention programs were shown to be face-to-face communication (97%) and print media, such as pamphlets (92%). Prevention strategies most frequently implemented by universities included awareness strategies (91%), drug user referral or treatment services (89%), self-help materials (89%), alternatives (86%), and student/staff orientations (79%).

Research done on alcohol prevention at university level suggested a wide range of factors on which should be concentrated when formulating programmes. Yaccarino (1995) suggested that a peer-counselling model could complement student support services for alcohol and substance abuse, while Margolis (1992) argued that the practice and theme of drinking to drunkenness among students and not just the negative outcomes of drinking should be seen as the focus. Garvin, Alcorn and Faulkner (1990) focused on the incorporation of self-monitoring strategies and Dielman (1994) concentrated on providing students with the necessary skills to prevent inappropriate use of alcohol. When aiming at female students, Gleason (1994) recommended emphasizing relational issues.

It is important to note that Meacci (1990) found alcohol education to be a reliable knowledge source, but that it failed to influence responsible attitudes and reduce negative consequences. Factors such as the student's involvement in the university's social environment and peer-facilitated drinking should thus be included in a prevention program to ensure reduction in alcohol problems. Treise et al, (1999) recommended addressing the needs for security and escapism of the students that they experienced as being fulfilled by drinking. Also to be incorporated according to Turrisi, Nicholson and Jaccard (1999) were alcohol establishments in an effort to

provide an environment that was less conducive to the alcohol-related problems that university students experienced.

Mandatory programmes for students who violate a student code of conduct to alcohol were also suggested. Ward and Baldwin (1990) argued for education of offenders regarding their maladaptive drinking behaviour. Look and Rapaport (1991) found most students gained an awareness and concern about their personal drinking habits after undergoing a mandatory programme on alcohol abuse.

4.3 Criticism of Prevention Strategies

Treise et al. (1999) cited criticism of certain prevention strategies. DeJong, Atkin and Wallack (cited in Treise et al., 1999) criticized drinking moderation advertisements from the alcohol industry as failing to play a constructive role in reducing drinking and driving. Conversely, it increased the legitimacy of beer in a variety of social situations by some of the same images found in brand advertising. The campaign for designating a driver was also criticized by them as only leading to the designated driver consuming less alcohol than the group and not abstaining and might even lead to heavier consumption by the driver's companions. Furthermore, designating a driver only made a difference if two or more people were travelling together, while research indicated 58% of all vehicles involved in fatal crashes had only one occupant (Wagenaar cited in Treise et al., 1999). Treise et al. (1999) noted that the effectiveness of fear appeals had shown mixed results and had only had moderate success in modifying drinking behaviour. They reported that the use of fear appeals aimed at college students posed problems because the target audience underestimated or minimized the risk associated with drinking.

A survey of universities and colleges indicated that despite infusions of funds from governments, many colleges and universities did not provide substance use and abuse education for students or for prospective lecturers. Many were also inactive in sharing resources with local communities and/or school districts (Hackett, Henry & Manke, 1991).

An overall interpretation of the literature indicates that prevention programmes should, amongst others, focus on education, information, peer group involvement, health, safety, and that the approach should be population-based.

5. OBJECTIVES

The objectives of this explorative study are to determine:

- the profile of male and female students' use of alcohol at the University of Stellenbosch;
- the variables associated with the cause, strengthening and maintenance of students' alcohol use on Stellenbosch campus;
- the characteristics of students at the University of Stellenbosch who are moderate to heavy users of alcohol.

The above-mentioned objectives will enable the university administration and other relevant role players to acquire a scientifically balanced view of alcohol use among students of the University of Stellenbosch. It will help set a baseline for future comparative studies on progression or regression of alcohol use and to evaluate the effects of any prevention and intervention studies. This will enable them to formulate a relevant alcohol policy, action plan and prevention strategies and programmes.

6. METHOD

6.1. Research Design

This research project entails a survey of the drinking culture on Stellenbosch campus. A survey research strategy was used successfully by both Wechsler and Perkins (1996) and Engs (1996) to determine the nature and extent of alcohol abuse among American college and university students.

In the present study a questionnaire was compiled and mailed to randomly selected students resident in and outside Stellenbosch who were enrolled for undergraduate courses. The study aims to establish and assess the relevant factors associated with the cause, reinforcement and maintenance of alcohol abuse on Stellenbosch campus.

The present study differs from a previous study at the University of Stellenbosch done by Plüddemann et al. (1999) that investigated the relationship between adolescent alcohol use and self-consciousness. Their study focused on second year male (n=269) and female (n=274) students randomly drawn from various faculties,

who completed a self-administered, structured questionnaire. An in-class completion method was followed.

6.2. Sampling

A stratified random sample was drawn (March 2000) by the university's Information Services from the full student population of the University of Stellenbosch's main campus and the medical campus on Tygerberg (Table 1). The criteria for the selection of subjects were based on them studying an undergraduate course at the University of Stellenbosch, where they had to meet the following three criteria in the population:

- Gender: Male/ Female
- Language: Afrikaans/ English
- Residence: University Residences/ Private Accommodation in Stellenbosch/ Private Accommodation Outside Stellenbosch.

Some postgraduate students were drawn somewhat erroneously, because at the time they were also following undergraduate courses. Their data have been included.

872 questionnaires were sent to male students and 1100 questionnaires were sent to female students. A response rate of 27.4% was achieved (542 students returned their questionnaires of whom two did not indicate gender and were subsequently not included in Table 1). It is shown in table 1 that Afrikaans and English male students had roughly the same response rate (20%), while English female students had a higher response rate than their Afrikaans counterparts, especially for university residences.

Table 1

Student Population, Sample and Response Rate of Study

| | Student Population (N=9823) | | Sample (N=1972) | | Returned Questionnaires (N=540) | |
|--------------|--------------------------------|-------|--------------------|-------|------------------------------------|-----------|
| | Men | Women | Men | Women | Men | Women |
| Univ. Res. | | | | | | |
| Afrikaans | 1378 | 1720 | 277 | 345 | 56 (20%) | 124 (36%) |
| English | 376 | 520 | 76 | 105 | 14 (18%) | 44 (42%) |
| Total | 1754 | 2240 | 353 | 450 | 70 | 168 |
| Private Res. | | | | | | |
| Afrikaans | 1595 | 1942 | 320 | 389 | 76 (20%) | 107 (28%) |
| English | 991 | 1301 | 199 | 261 | 40 (20%) | 79 (30%) |
| Total | 2586 | 3243 | 519 | 650 | 116 | 186 |
| Sum Total | 4340 | 5483 | 872 | 1100 | 186 | 354 |

6.3. Measuring Instruments

A questionnaire (Appendix A) was compiled to carry out the survey. The questionnaire covered a broad base of information in order to ensure factors associated with the cause, reinforcement and maintenance of alcohol abuse on Stellenbosch campus were identified and assessed. It was kept in mind that the information gathered through the questionnaire should provide guidance as to which factors were relevant for prevention policies and strategies. The questionnaire therefore focused on:

- the relevant identifying biographical data
- age of first substance use
- frequency of substance use
- level of alcohol use
- the pattern of alcohol use
- consequences of alcohol use
- the beliefs and expectancies of alcohol use
- other factors e.g. sports participation, that may affect or be affected by alcohol use.

The questionnaire was made available in Afrikaans and English versions.

From the following questionnaires, specific questions were selected for the present study: The Michigan Alcoholism Screening Test (MAST), the Index of Alcohol Involvement (IAI), the Student Alcohol Questionnaire (SAQ), the Alcohol Attitude Questionnaire (AAQ) and the Alcohol Use Disorders Identification Test (AUDIT).

6.3.1 Michigan Alcoholism Screening Test (MAST)

The Mast is a 24-item instrument developed by M.L. Selzer to detect alcoholism (Fischer & Corcoran, 1994). It focuses on lifetime alcohol use and covers drinking patterns, social, occupational and medical aspects of drinking and previous attempts at treatment (Allen, Eckhardt & Wallen cited in Parry & Bennetts, 1998). It has been found that the MAST is superior as a screening device. The questionnaire has been found to have both reliability and validity (Fischer & Corcoran, 1994).

6.3.2 Index of Alcohol Involvement (IAI)

The IAI was developed by G. MacNeil as a short-form scale to measure the degree or magnitude of problems connected with alcohol abuse. This unidimensional 25-item instrument has been found to have both reliability and validity (Fischer & Corcoran, 1994; MacNeil, 1991).

6.3.3 Student Alcohol Questionnaire (SAQ)

The SAQ was developed by R.C. Engs to obtain demographic information, as well as information concerning drinking patterns (quantity/frequency), problems related to alcohol, and alcohol knowledge among college students. After a re-estimation of the reliability of the SAQ, it was concluded that it was still a reliable and valid instrument (Engs & Hanson, 1994).

6.3.4 Alcohol Attitude Questionnaire (AAQ)

The AAQ contains questions on possible negative consequences of drinking (Hanson & Engs, 1992).

6.3.5 Alcohol Use Disorders Identification Test (AUDIT)

The AUDIT is a screening instrument constructed by the World Health Organisation (WHO) as a cross-cultural test for early identification of risky alcoholic behaviour (Wennberg, 1996). It provides a simple method of early detection of hazardous and harmful alcohol use in primary health care settings and is a good predictor of social and medical problems (Conigrave, Hall & Saunders, 1995; Saunders, Aasland, Babor & De la Fuente, 1993). It is also appropriate for student health clinics or other university prevention and education programs (Fleming, Barry & MacDonald, 1991). The information from the AUDIT has been described as reliable and valid (Hays, Merz & Nicholas, 1995)

6.4. Procedure

Consent to undertake the study was obtained from the Ethical Committee of the University of Stellenbosch. A pilot study was first undertaken in March 2000 after which changes were made to the questionnaire. In May 2000 the survey study was undertaken by mailing the self-administered, structured questionnaire (Appendix A) to each of the selected students. They were requested to send the anonymously completed questionnaire back in the pre-paid envelope before the closing date. The selected students could contact the researchers telephonically at any time regarding questions or uncertainties about the study or questionnaire. The questionnaire took roughly fifteen to twenty minutes to complete.

6.5. Data Analysis

All data were analyzed with the Statistical Package for Social Sciences (SPSS) software. Where appropriate, Pearson's correlations and chi-square tests, conservatively two-tailed, were used. Chi-square tests were used to determine the significance of the relationships between the dependent variable (level of alcohol use) and various independent variables. The data concerning consequences of alcohol use, and beliefs and expectancies of alcohol use, were not analysed for the purpose of this thesis.

7.RESULTS

Of the 547 subjects who returned their questionnaires approximately a third (186) were male and two-thirds (356) female. Their average age was 21.14 years, with males being 21.83 and females 20.79 (Table 2).

Table 2

Average Age of Male and Female Students

| | Male Students ($n=185$) | | Female Students ($n=355$) | |
|-----|------------------------------|-----------|--------------------------------|-----------|
| | \bar{X} | <u>SD</u> | \bar{X} | <u>SD</u> |
| Age | 21.83 | 4.49 | 20.79 | 3.55 |

The majority of the students, 366 (67%), was Afrikaans speaking, of the remainder 32% was English speaking. The language distribution for males was 132 (71%) Afrikaans speaking and 53 (28.5%) English speaking. For female students it was 231 (65%) Afrikaans speaking and 118 (33%) English speaking (Table 3).

Most students, 240 (44%), lived in university accommodation, while 176 (32%) stayed privately in Stellenbosch and 129 (24%) had private accommodation outside Stellenbosch. The majority of female students, 168 (48%), lived in university accommodation, while 113 (32%) had private accommodation in Stellenbosch and 73 (20%) stayed outside Stellenbosch. Male students were more evenly distributed with 70 (37%) living in university accommodation, 61 (33%) in private accommodation in Stellenbosch and 55 (30%) outside Stellenbosch (Table 3).

Almost 90% of the respondents were undergraduate students of whom 136 (25%) were first year students, 141 (26%) second year students and 205 (38%) senior-undergraduate students. Male respondents were mostly senior-undergraduate students, 78 (42%), while 42 (23%) were second year students and 38 (20%) first year students (Table 3)

Among female respondents, the majority were also senior-undergraduate students, 125 (35%), while 99 (28%) were second year and 98 (28%) first year students (Table 3).

Table 3

Frequency Distribution of Male and Female Students' Gender, First Language, Residence, Year of Study, Academic Performance and First Alcohol Use

| | Male Students | Female Students |
|--------------------------|---------------|-----------------|
| Gender | 186 (34%) | 356 (66%) |
| First Language | | |
| Afrikaans | 132 (71%) | 231 (65%) |
| English | 53 (28.5%) | 118 (33%) |
| Other | 1 (00.5%) | 7 (2%) |
| Residence | | |
| University Accommodation | 70 (37%) | 168 (48%) |
| Private In Stellenbosch | 61 (33%) | 113 (32%) |
| Private Outside Stell. | 55 (30%) | 73 (20%) |
| Year Of Study | | |
| First Year | 38 (20%) | 98 (28%) |
| Second Year | 42 (23%) | 99 (28%) |
| Senior Undergraduate | 78 (42%) | 125 (35%) |
| Post-graduate | 28 (15%) | 34 (9%) |
| Academic Performance | | |
| 40-49% | 4 (2%) | 7 (2%) |
| 50-59% | 77 (42%) | 112 (32%) |
| 60-74% | 84 (46%) | 187 (53%) |
| 75%+ | 18 (10%) | 46 (13%) |
| First Used Alcohol | | |
| Did Not Use | 12 (7%) | 29 (8%) |
| 7-13 | 36 (19%) | 39 (11%) |
| 14-18 | 121 (65%) | 237 (67%) |
| 19+ | 17 (9%) | 49 (14%) |

Academically, most students, 335 (63%), were in the above average (60%+) group, while only 11 (2%) were potential candidates to fail. Male, 161 (88%), and female respondents, 299 (85%), both scored mostly between 50-74% (Table 3).

The majority of students, 361 (66%), used alcohol for the first time between ages 14–18, while 75 (14%) started using it between ages 7–13 for the first time. A small number of students, 42 (8%), have never used alcohol before. Among male respondents, 121 (65%) used alcohol for the first time between ages 14-18, and 36 (19%) between ages 7-13. Most female respondents, 237 (67%), used alcohol for the first time between ages 14-18, while 49 (14%) used alcohol for the first time after age 19 (Table 3).

Moving on from biographical and demographic data, the frequency of alcohol use of the participants is reported in Table 4.

Table 4

Frequency of Alcohol Use

| Frequency Of Use | %Male Students (n=186) | %Female Students (n=356) |
|---------------------|---------------------------|-----------------------------|
| Did not use | 11% | 10% |
| Once/ More Per Year | 39% | 52% |
| Once/ More Per Week | 50% | 38% |

$\chi^2=9.46$; $df=2$; $p=.008$

In comparison the most striking aspect of Table 4 is that more male students (50%) drink once or more per week, opposed to female students (38%). The data in Table 4 shows that there is a significant relationship between frequency of drinking and gender. Table 5 indicates the level of alcohol use by students.

Table 5

Level of Alcohol Use (Average Number of Drinks per Occasion)

| Level Of Use | % Male Students (n=184) | % Female Students (n=352) |
|--------------------------|----------------------------|------------------------------|
| Abstain | 16 | 16 |
| Light (1 Or 2 Drinks) | 28 | 43 |
| Moderate (3 Or 4 Drinks) | 22 | 29 |
| Heavy (5 Or More Drinks) | 34 | 12 |

$\chi^2=40.293$; $df=3$; $p=.000$

It is clearly shown in Table 5 that there is a highly significant relationship between gender and the level of alcohol use. The major reason for the significant difference is the 34% male students opposed to the 12% female students who were classed among the category of heavy use of alcohol (5 or more drinks per occasion). In Table 6 the relationship between level and frequency of alcohol use is investigated.

Table 6

Relationship between Level of Alcohol Use and Frequency of Use

| Frequency of use | Level of Use | | | | | | | |
|------------------|--------------------------|-----------------|----------------|-----------------|----------------------------|------------------|-----------------|-----------------|
| | Male Students (N=184) | | | | Female Students (N=352) | | | |
| | Abst. (n=29) | Light (n=51) | Mod. (n=42) | Heavy (n=62) | Abst. (n=55) | Light (n=153) | Mod. (n=103) | Heavy (n=41) |
| Do Not Use | 20 (69%) | 1 (2%) | 0 (0%) | 0 (0%) | 34 (62%) | 1 (1%) | 0 (0%) | 0 (0%) |
| 1/ More Per Year | 9 (31%) | 37 (73%) | 14 (33%) | 11 (18%) | 21 (38%) | 116 (76%) | 38 (37%) | 9 (22%) |
| 1/ More Per Week | 0 (0%) | 13 (25%) | 28 (67%) | 51 (82%) | 0 (0%) | 36 (23%) | 65 (63%) | 32 (78%) |

Male $\chi^2=158.845$; $df=6$; $p=.000$

Female $\chi^2=270.717$; $df=6$; $p=.000$

As could be expected, there is a highly significant relationship between level and frequency of alcohol use for both sexes. Of the light drinking male students, only 25% indicate that they use alcohol once or more per week, as opposed to the 82% heavy drinkers who use alcohol once or more per week. The same pattern prevails among

female students. (Table 6). The level of alcohol use of participants in the various years of study is shown in Table 7.

Table 7

Level of Alcohol Use of Male and Female Students in Different Years of Study

| Level Of Use | Year Of Study | | | | | | | |
|--------------|--------------------------------|--------------------------------|--------------------------|-------------------|--------------------------------|--------------------------------|---------------------------|-------------------|
| | % Male Students (N=184) | | | | % Female Students (N=352) | | | |
| | 1 st year (n=38) | 2 nd year (n=40) | Senior Underg. (n=78) | Postgr. (n=28) | 1 st year (n=97) | 2 nd year (n=98) | Senior Underg. (n=124) | Postgr. (n=33) |
| Abstain | 18 | 17 | 13 | 22 | 19 | 14 | 15 | 12 |
| Light | 47 | 20 | 27 | 46 | 48 | 41 | 41 | 49 |
| Mod. | 25 | 23 | 26 | 18 | 26 | 34 | 28 | 30 |
| Heavy | 7 | 40 | 34 | 14 | 7 | 11 | 16 | 9 |

Males $\chi^2=7.186$; df=9; $p=.618$

Females $\chi^2=10.339$; df=9; $p=.324$

Neither sex shows a significant relationship between the level of alcohol use and the year of study (Male $p=.618$; Female $p=.324$). It should be noted that the study focused on different subjects and not on the same students throughout their university passage. Among male students, the data percentagewise indicate more light drinkers in the first year and postgraduate groups and more moderate to heavy drinkers in the second year and senior undergraduate groups (Table 7). In Table 8 the possible relationship between the level of alcohol use and academic performance is explored.

Table 8

Level of Alcohol Use and Academic Performance

| Level Of Use | Academic Performance | | | | | | | |
|--------------|----------------------------|-----------------|-----------------|---------------|------------------------------|------------------|------------------|---------------|
| | % Male Students (N=181) | | | | % Female Students (N=348) | | | |
| | Under 50 (n=4) | 50-59 (n=76) | 60-74 (n=84) | 75+ (n=17) | Under 50 (n=7) | 50-59 (n=110) | 60-74 (n=185) | 75+ (n=46) |
| Abstain | 0 | 13 | 13 | 41 | 14 | 16 | 14 | 20 |
| Light | 25 | 21 | 37 | 12 | 14 | 39 | 42 | 59 |
| Mod. | 25 | 28 | 21 | 12 | 14 | 30 | 32 | 20 |
| Heavy | 50 | 38 | 29 | 35 | 57 | 15 | 12 | 2 |

Male $\chi^2=16.967$; df=9; p=.049

Female $\chi^2=11.257$; df=9; p=.259

It seems that level of alcohol use and academic performance is mostly independent of each other across gender. The percentage students in the under 50% and over 75% categories is misleading because of the small number of students in each group (Table 8). In Table 9 the level of alcohol use of students, according to their residence, is analysed.

Table 9

Level of Alcohol Use According to Residence

| Level Of Use | Residence | | | | | |
|--------------|---------------------------|----------------------------|-----------------------------|-----------------------------|-------------------------|------------------------------|
| | %Male Students (N=184) | | | %Female Students (N=351) | | |
| | University (n=70) | Private In Stel. (n=60) | Priv.Outside Stel (n=54) | University (n=166) | Priv In Stel (n=113) | Priv.Outside Stel. (n=72) |
| Abstain | 13 | 10 | 26 | 11 | 26 | 32 |
| Light | 16 | 25 | 46 | 49 | 35 | 43 |
| Moderate | 30 | 27 | 9 | 30 | 35 | 19 |
| Heavy | 41 | 38 | 19 | 10 | 18 | 6 |

Males $\chi^2=27.338$; df=6; p=.000

Females $\chi^2=28.784$; df=6; p=.000

Table 9 indicates a highly significant relationship between level of alcohol use and residence for both sexes. The underlying reason for the significant relationship is the fact that more students of both sexes living privately in Stellenbosch or in university residences are classed among the moderate to heavy drinking group, opposed to the students living privately outside Stellenbosch.

For male students, heavy alcohol use is prevalent among those living in university residences (41%), while a high percentage also has a moderate level of alcohol use (30%). Male students living privately in Stellenbosch also have a high level of heavy (38%) to moderate (27%) alcohol use. Male students living privately outside Stellenbosch either have a light level of alcohol use (46%) or abstain (26%) (Table 9).

Female students are generally light drinkers of alcohol, but 40% of those living in university residences and 53% of those living privately in Stellenbosch are moderate to heavy drinkers, whereas this is the case for only 25% of females living outside Stellenbosch. Although much lower than their male counterparts, the highest percentage of females who consume alcohol heavily are those living privately in Stellenbosch (18%) and those living in university residences (10%) (Table 9). In Table 10 the possible relationship between a student's first language and alcohol use is explored.

Table 10

Level of Alcohol Use and First Language

| Level Of Use | %Male Students (N=184) | | | %Female Students (N=352) | | |
|--------------|------------------------|----------------|-------------|--------------------------|-----------------|-------------|
| | Afrikaans (n=131) | English (n=52) | Other (n=1) | Afrikaans (n=230) | English (n=116) | Other (n=6) |
| Abstain | 14 | 19 | 100 | 16 | 16 | 17 |
| Light | 36 | 27 | 0 | 53 | 28 | 50 |
| Moderate | 24 | 19 | 0 | 26 | 35 | 33 |
| Heavy | 34 | 35 | 0 | 7 | 22 | 0 |

Males $\chi^2=6.561$; $df=6$; $p=.363$

Females $\chi^2=27.151$; $df=6$; $p=.000$

The data in Table 10 shows a significant relationship on the 0,1%-level between language group and level of alcohol use for female students, but not for male students. English speaking female students have a higher level of moderate (35%) and heavy (22%) alcohol use, while Afrikaans speaking female students have a lower level of moderate (26%) and heavy (7%) alcohol use. The percentages in the “other language” category are misleading as it consists of only one male and a few ($n=6$) female students. In Table 11 the relationship between alcohol use and sport participation is investigated.

Table 11

Level of Alcohol Use and Weekly Sport Participation

| Level Of Use | Weekly Sport Participation | | | |
|--------------|----------------------------|--------------|-----------------------------|---------------|
| | %Male Students (N=183) | | %Female Students (N=349) | |
| | Yes (n=150) | No (n=33) | Yes (n=209) | No (n=140) |
| Abstain | 10 | 29 | 9 | 24 |
| Light | 31 | 20 | 45 | 42 |
| Moderate | 23 | 22 | 32 | 25 |
| Heavy | 36 | 29 | 14 | 8 |

Males $\chi^2=9.603$; $df=3$; $p=.022$

Females $\chi^2=16.929$; $df=3$; $p=.001$

The data in Table 11 indicate a moderate positive relationship between sport participation and alcohol usage. The relationship is significant only on the 5%-level for male students, while it is significant on the 1%-level for female students. Of those students who participate regularly in sport, 36% male and 14% female students have a higher level of heavy alcohol consumption than male (29%) and female (8%) students who are non-participants. Conversely, 29% male and 24% female students who do not participate regularly in sport indicate that they abstain from alcohol usage. In Table 12 the data on whether religious participation and alcohol usage are independent of each other is given.

Table 12

Level of Alcohol Use and More than Once a Month Religious Participation

| Level Of Use | Monthly Religious Participation | | | |
|--------------|---------------------------------|--------------|-----------------------------|--------------|
| | %Male Students (N=183) | | %Female Students (N=348) | |
| | Yes (n=132) | No (n=51) | Yes (n=266) | No (n=82) |
| Abstain | 19 | 6 | 17 | 13 |
| Light | 31 | 19 | 48 | 31 |
| Moderate | 24 | 20 | 27 | 34 |
| Heavy | 26 | 55 | 8 | 22 |

Males $\chi^2=15.397$; df=3; p=.002

Females $\chi^2=16.119$; df=3; p=.001

Table 12 shows a negative relationship between alcohol usage and the attendance of religious meetings more than once a month. This relationship is significant on the 1%-level for both male and female students. Only 26% of male students who regularly attend religious meetings are heavy users of alcohol. Conversely, 55% male students who do not regularly attend religious meetings are heavy users of alcohol. Female students have a similar pattern. Only 8% of female students who attend religious meetings are heavy drinkers compared to the 22% heavy drinkers in the female group who do not regularly attend these meetings. Related to the above, the students were asked in a following question whether their moral values influence how much they drink. The data is shown in Table 13.

Table 13

Influence of Moral Values on Students' Use of Alcohol

| Level Of Use | Moral Values' Influence | | | |
|--------------|---------------------------|--------------|-----------------------------|--------------|
| | %Male Students (N=181) | | %Female Students (N=345) | |
| | Yes (n=119) | No (n=62) | Yes (n=272) | No (n=73) |
| Abstain | 19 | 8 | 17 | 6 |
| Light | 29 | 24 | 49 | 27 |
| Moderate | 25 | 19 | 26 | 42 |
| Heavy | 27 | 49 | 8 | 25 |

Males $\chi^2=9.472$; df=3; p=.024

Females $\chi^2=30.551$; df=3; p=.000

The data in Table 13 indicates a highly significant relationship between female students' perception of the influence of their moral values on how much they drink and their real level of consumption. For male students the relationship is only significant on the 5%-level. Female students who state they are not influenced by their moral values are more likely to drink moderately (42%) or heavily (25%). In contrast, only 8% female students who maintain to be influenced by their moral values consume alcohol heavily.

Male students consumed alcohol heavily (49%) if they claimed not to be influenced by their moral values. There is a more even distribution among male students who maintained to be influenced by their moral values with 19% abstaining, 29% drinking lightly, 25% drinking moderately and 27% drinking heavily (Table 13). In conjunction with this, Table 14 explores the relationship between sexual activity and alcohol use.

Table 14

Level of Alcohol Use of Sexually Active and Non-Active Students

| Level Of Use | Sexually Active | | | |
|--------------|---------------------------|---------------|-----------------------------|---------------|
| | %Male Students (N=183) | | %Female Students (N=348) | |
| | Yes (n=65) | No (n=118) | Yes (n=83) | No (n=265) |
| Abstain | 9 | 19 | 8 | 18 |
| Light | 28 | 28 | 35 | 47 |
| Moderate | 17 | 26 | 34 | 28 |
| Heavy | 46 | 27 | 23 | 7 |

Males $\chi^2=8.507$; $df=3$; $p=.037$

Females $\chi^2=19.879$; $df=3$; $p=.000$

Among females a relationship, significant on the 0.1%-level, was found between sexual activity and drinking. Table 14 shows that a significantly larger percentage sexually active female students drink heavily (23%) or moderately (34%). Among female students who are not sexually active, only 7% drink heavily.

In the case of male students, the same significant relationship was found, but only on the 5%-level. Here 46% of male students who are sexually active were found to drink

heavily compared with the 27% of sexually inactive male students (Table 14). In a follow-up question, students were asked if they have engaged in unsafe sex practices after drinking. The data is given in Table 15.

Table 15

Level of Alcohol Use of Students who Do and Do Not Practise Unsafe Sex after Drinking

| Level Of Use | Unsafe Sex After Drinking | | | |
|--------------|----------------------------|---------------|------------------------------|---------------|
| | % Male Students (N=183) | | % Female Students (N=349) | |
| | Yes (n=27) | No (n=156) | Yes (n=41) | No (n=308) |
| Abstain | 0 | 18 | 0 | 18 |
| Light | 7 | 31 | 22 | 47 |
| Moderate | 22 | 23 | 51 | 26 |
| Heavy | 71 | 28 | 27 | 9 |

Males $\chi^2=22.060$; $df=3$; $p=.000$

Females $\chi^2=29.527$; $df=3$; $p=.000$

The data in Table 15 shows clearly and significantly that the more male and female students drink, the more likely they are to have engaged in unsafe sex after drinking. Male students who engage in unsafe sex after drinking are primarily heavy (71%) and moderate drinkers (22%), compared with the 28% (heavy) and 23% (moderate) of male students who answered no. Conversely, male students who answered no have higher percentages for light drinking (31%) or abstaining (18%).

In the case of female students, those who engage in unsafe sex after drinking are more likely to be moderate (51%) or heavy (27%) drinkers. In contrast, those who answered no are primarily light (47%) or moderate (26%) drinkers, while 18% are abstainers (Table 15).

It is important to note however, that only 12% female and 15% male students indicated engagement in unsafe sex practices after drinking. The question is therefore only relevant for an absolute minority (Table 15). Table 16 explores the relationship between level of alcohol use and students who have been taken advantage of during or after drinking.

Table 16

Level of Alcohol Use and Students who Have Been Sexually Taken Advantage of During or after Drinking

| Level Of Use | Been Sexually Taken Advantage Of | | | |
|--------------|----------------------------------|---------------|-----------------------------|---------------|
| | %Male Students (N=183) | | %Female Students (N=349) | |
| | Yes (n=17) | No (n=166) | Yes (n=47) | No (n=302) |
| Abstain | 6 | 16 | 2 | 18 |
| Light | 6 | 30 | 25 | 46 |
| Moderate | 24 | 23 | 43 | 27 |
| Heavy | 64 | 31 | 30 | 9 |

Males $\chi^2=9.596$; $df=3$; $p=.022$

Females $\chi^2=29.346$; $df=3$; $p=.000$

Like Table 15, the data in Table 16 is only relevant for an absolute minority. Only 14% of the female students and 9% of the male students responded affirmatively. For female students there is a highly significant relationship on the 0,1%-level between how much they drink and having been taken advantage of, while for the males there is only significance on the 5%-level.

Female students that have been taken advantage of during or after drinking fall primarily in the moderate (43%) or heavy (30%) drinking category, while those that said no are more likely to fall in the light (46%) or moderate (28%) drinking category (Table 16).

For male students, the highest percentage of those that answered yes falls in the heavy drinking (65%) or moderate (24%) category, with only 6% light drinkers and 6% abstaining. In contrast to the above mentioned, those male students who answered no are more evenly distributed, with 31% drinking heavily, 30% lightly, 23% moderately and 16% abstaining (Table 16). Subsequent focus is on family circumstances, with the possible relationship between alcohol usage and the wish that one or both parents/stepparents would drink less being explored in Table 17.

Table 17

Students' Level of Alcohol Use and the Wish that One or Both Parents/ Step-Parents Would Drink Less

| Level Of Use | Wish That Parents/ Step-Parents Drink Less | | | |
|--------------|--|---------------|-----------------------------|---------------|
| | %Male Students (N=182) | | %Female Students (N=347) | |
| | Yes (n=22) | No (n=160) | Yes (n=65) | No (n=282) |
| Abstain | 9 | 16 | 18 | 14 |
| Light | 45 | 26 | 49 | 43 |
| Moderate | 23 | 23 | 25 | 31 |
| Heavy | 23 | 35 | 8 | 12 |

Males $\chi^2=4.216$; df=3; p=.239

Female $\chi^2=2.962$; df=3; p=.397

From Table 17 the indications of how much the student drinks is independent from his or her wishes regarding the parents' drinking. However, it is important to note that only a minority (19% of the female and 12% of the male students) wishes that their parents would drink less. In a follow-up question it is revealed that 10% of the female and 8% of the male students feel that their parents or siblings have a problem with alcoholism. No significant relationship was found between personal alcohol consumption and perception of a family problem with alcoholism. A final question concerning the family is whether the parents approved of the individual's drinking. The data is given in Table 18.

Table 18
Students' Alcohol Use and Their Parents Approval

| Level Of Use | Parents' Approval Of Alcohol Use | | | |
|--------------|----------------------------------|--------------|-----------------------------|--------------|
| | %Male Students (N=176) | | %Female Students (N=333) | |
| | Yes (n=128) | No (n=48) | Yes (n=241) | No (n=92) |
| Abstain | 13 | 19 | 8 | 26 |
| Light | 32 | 19 | 51 | 28 |
| Moderate | 23 | 25 | 29 | 33 |
| Heavy | 32 | 37 | 12 | 13 |

Males $\chi^2=3.475$; df=3; p=.324

Females $\chi^2=24.362$; df=3; p=.000

According to Table 18, there is a significant relationship between how much female students drink and their parents' approval of their drinking. For the female students whose parents approved, 12% fall in the heavy drinking category, 29% in the moderate and 51% in the light. For those female students whose parents do not approve, 13% fall in the heavy drinking category, 33% in the moderate and 28% in the light. Interestingly, only 8% of female students whose parents approved of their drinking, compared to 26% of female students whose parents do not approve of their drinking, are abstainers. In the case of male students, the same pattern is found, but the relationship is not significant. For the record, 73% of both genders indicated their parents approve of their drinking. Table 19 examines the relationship between level of alcohol use and frequency of tobacco use.

Table 19

Comparison between Level of Alcohol Use and Frequency of Smoking

| Level Of Use | Frequency Of Smoking | | | | | |
|--------------|-----------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | Male Students (N=184) | | | Female Students (N=351) | | |
| | Do Not Use (n=106) | 1/ More Per Year (n=36) | 1/ More Per Week (n=42) | Do Not Use (n=218) | 1/ More Per Year (n=73) | 1/ More Per Week (n=60) |
| Abstain | 25 (23%) | 2 (6%) | 2 (9%) | 51 (23%) | 4 (6%) | 0 (0%) |
| Light | 42 (40%) | 4 (11%) | 5 (12%) | 116 (53%) | 24 (33%) | 13 (22%) |
| Moderate | 19 (18%) | 13 (36%) | 10 (24%) | 39 (18%) | 30 (41%) | 33 (55%) |
| Heavy | 20 (19%) | 17 (47%) | 25 (60%) | 12 (6%) | 15 (20%) | 14 (23%) |

Male $\chi^2=43.614$; df=6; p=.000

Female $\chi^2=81.608$; df=6; p=.000

There is a highly significant relationship between the level of alcohol use and the frequency of smoking for both male and female students in Table 19. The majority of male smokers, 65 (83%), is moderate to heavy users of alcohol. The same is found for female smokers of whom the majority, 92 (69%), is also moderate to heavy drinkers. Table 20 explores the relationship between level of alcohol use and frequency of dagga use.

Table 20

Comparison between Level of Alcohol Use and Frequency of Dagga Use

| Level Of Use | Frequency Of Dagga Use | | | | | |
|--------------|------------------------|-------------------------|------------------------|-------------------------|-------------------------|------------------------|
| | Male Students (N=184) | | | Female Students (N=352) | | |
| | Do Not Use (n=149) | 1/ More Per Year (n=31) | 1/ More Per Week (n=4) | Do Not Use (n=301) | 1/ More Per Year (n=47) | 1/ More Per Week (n=4) |
| Abstain | 29 (19%) | 0 (0%) | 0 (0%) | 54 (18%) | 1 (2%) | 0 (0%) |
| Light | 47 (32%) | 3 (10%) | 1 (25%) | 143 (47%) | 10 (21%) | 0 (0%) |
| Moderate | 35 (23%) | 7 (22%) | 0 (0%) | 80 (27%) | 20 (43%) | 3 (75%) |
| Heavy | 38 (26%) | 21 (68%) | 3 (75%) | 24 (8%) | 16 (34%) | 1 (25%) |

Male $\chi^2=27.849$; df=6; $p=.000$

Female $\chi^2=46.108$; df=6; $p=.000$

From the data in Table 20 there is clearly a significant relationship between level of alcohol use and the use of dagga for both male and female students. The majority of male student users of dagga, 31 (89%), falls in the moderate to heavy drinking group. The same pattern is found among female students of whom 78% of dagga users falls in the moderate to heavy drinking group. In terms of the broader context, an important perspective is that only 2% of males and 1% of females indicate that they use dagga frequently. In table 21 the average amount of money spent on alcohol by moderate to heavy drinkers is reported.

Table 21

Average Amount of Money Spent Weekly on Alcohol by Moderate to High Level Drinkers

| | Male Students (n=101) | | Female Students (n=140) | |
|---------------------------------|-----------------------|-----------|-------------------------|-----------|
| | \bar{X} | <u>SD</u> | \bar{X} | <u>SD</u> |
| Average Amount Of Money In Rand | 39.30 | 31.66 | 33.32 | 22.57 |

Table 21 shows that moderate to heavy drinking male and female students spend approximately R40 and R33 respectively on alcohol per week. It is interesting to note that the study indicates that both male and female light drinkers spend approximately R14 per week on alcohol. In Table 22 the types of alcoholic drinks most often consumed by moderate to heavy drinkers are indicated.

Table 22

Types of Alcoholic Drinks Most Often Consumed by Moderate to High Level Drinkers*

| Types Of Alcoholic Drinks | Male Students Who Answered "Often" (n=104) | Female Students Who Answered "Often" (n=144) |
|---------------------------|---|---|
| Beer | 63 (61%) | 17 (12%) |
| Wine | 41 (39%) | 84 (58%) |
| Cider | 27 (26%) | 52 (36%) |
| Shooters | 21 (20%) | 29 (20%) |

*Participants could indicate more than one preference, with the result that the percentages add up to more than 100%.

The most preferred drink among male moderate to heavy drinkers is beer (61%), with wine (39%) and cider (26%) being much less popular. For female students who drink moderately to heavily, wine (58%) is the preferred drink, with cider (36%) being the next most popular drink (Table 22). The places that moderate to heavy drinkers most often visit to buy or drink alcohol are shown in Table 23.

Table 23

Places Where Moderate to High Level Drinkers Most Often Buy/ Drink Alcohol*

| Places | Male Students Who Answered "Often" (n=104) | Female Students Who Answered "Often" (n=144) |
|---------------|---|---|
| Pubs | 62 (60%) | 84 (58%) |
| Liquor Stores | 51 (49%) | 50 (35%) |
| Clubs | 46 (44%) | 69 (48%) |
| Restaurants | 20 (19%) | 40 (28%) |
| Koshuis Clubs | 19 (18%) | 2 (1%) |

*Participants could indicate more than one preference, with the result that the percentages add up to more than 100%.

The most favourite place for both male (60%) and female (58%) moderate to heavy drinkers to buy/ drink alcohol is pubs. Among male students, liquor stores (49%) are the next most likely place, followed by clubs (44%). For female students, the next most likely place to buy/ drink alcohol is clubs, followed by liquor stores (Table 23). In Table 24 the data is given of the specific days of the week on which moderate to heavy drinkers are most likely to drink alcoholic beverages.

Table 24

Days on which Moderate to High Level Drinkers are Most Likely to Drink Alcoholic Beverages*

| Days | Male Students (n=103) | Female Students (n=142) |
|-----------|--------------------------|----------------------------|
| Friday | 96 (93%) | 134 (94%) |
| Saturday | 92 (89%) | 125 (88%) |
| Wednesday | 59 (57%) | 91 (64%) |
| Sunday | 20 (19%) | 28 (20%) |

*Participants could indicate more than one preference, with the result that the percentages add up to more than 100%.

Both male and female students who are moderate to heavy drinkers have the same pattern of days on which they are most likely to drink. Weekends are the favourite time with 93% male and 94% female students drinking on Fridays, closely followed by Saturdays. During the week, the favourite is Wednesdays, with 57% male and

64% female students likely to go out for a drink (Table 24). The occasions during which moderate to heavy drinkers are more likely to consume five (male students)/ four (female students) drinks in a row are indicated in Table 25.

Table 25

Occasions during which Moderate to High Level Drinkers are More Likely to Consume 5(Men)/ 4(Women) Drinks or More in a Row*

| Occasions | Male Students (n=104) | Female Students (n=137) |
|--------------------------|--------------------------|----------------------------|
| Student Parties | 97 (93%) | 123 (90%) |
| Carnival Week | 87 (84%) | 103 (75%) |
| Weekends | 84 (81%) | 108 (79%) |
| Holidays | 79 (76%) | 87 (64%) |
| Student Functions | 80 (77%) | 110 (80%) |
| First Week Of A Semester | 78 (75%) | 104 (76%) |
| After Sport Events | 38 (37%) | 27 (20%) |
| Exams | 3 (3%) | 5 (4%) |

*Participants could indicate more than one preference, with the result that the percentages add up to more than 100%.

According to Table 25 male students who drink moderately to heavily, drink most heavily during student parties (93%), carnival week (84%) and weekends (81%). High levels of drinking also occur during holidays (76%), student functions (77%) and the first week of a semester (75%). Female students most often drink heavily during student parties (90%), student functions (80%) and weekends (79%). They are also likely to drink heavily during the first week of a semester (76%), carnival week (75%) and holidays (64%). It is interesting to note that only 3% of male and 4% of female students are likely to drink heavily during exams.

8. DISCUSSION

In the survey of the drinking habits of students at the University of Stellenbosch it is clear that the alcohol abuse problem is much more serious amongst males than females. There is a significant relationship with gender both with regards to frequency and level of alcohol consumption. As opposed to females, a much higher percentage males drink more frequently and heavily. This finding is in line with most of the worldwide research done on this subject (Engs et al., 1996; Jones-Webb et al., 1997; Lo, 1995; Macdonald et al., 1991; Parry & Bennetts, 1998; Plüddemann et al., 1998; Quigley & Marlatt, 1996).

The drinking levels among both sexes of Stellenbosch students seem, broadly speaking, not to differ much from other tertiary institutions, though it is difficult to obtain a comparative perspective on how much students drink, as other surveys do not always indicate precise data. Never the less, the basic similarity enhances the possibility that findings about alcohol use and misuse, alcohol-related problems, and prevention programmes and tactics are applicable to the context of, and thus useful for policy and prevention formulation, at the University of Stellenbosch.

Moderate to heavy drinkers of both sexes are weekly drinkers as opposed to their light drinking counterparts. This highly significant relationship between a high level of alcohol consumption and frequent drinking should be cause for concern as it entails a greater risk for negative consequences such as drunk driving, sexual risk behaviour, overspending and physical injury.

Although the indications are that postgraduate students of the University of Stellenbosch drink much less than undergraduates, no significant relationship could be found between study-year and level of alcohol consumption, as other studies did (Engs et al., 1996). This particular relationship can only be validly investigated in a longitudinal research design, which is not the case with the present study. It must be taken into account that many of the postgraduate students indicated on their questionnaires that they were either married, already full-time career people or both. The generalization of this particular group's alcohol use to the everyday campus situation must thus be done circumspectly. However, the postgraduate group could be seen as a target group for later studies as the data in this current study could be a reflection of the broader drinking pattern as it developed amongst Stellenbosch students after graduation from the university.

The relationship between academic performance and level of alcohol use is not significant for females and barely ($p=.049$). This may indicate that the drinking levels of students are not heavy to the extent that it has a definite negative effect on their academic performance. On the other hand, it may be that they separate drinking and studying by keeping a safe balance between the two. Support for this hypothesis is found in Tables 24 and 25, where the participants indicate that they mostly drink on Fridays and Saturdays and most heavily at student parties and functions, but that they drink significantly less during exams. It could also be explained by the finding that students who were satisfied with their academic standing, even though it might be low, felt freer to drink (Goodwin, 1990). It leaves room for the possibility that moderate to heavy drinking students of both sexes at the University of Stellenbosch are happy to continue with their lifestyle as long as they pass, even though it may mean lower grades. These possible explanations point to prevention programmes not to overly concentrate on alcohol negatively affecting academic performance. Perhaps prevention strategies should rather concentrate on altering the beliefs that students have of their current academic results in the context of their potential results. The outflow would most likely be a reduction in their drinking habits. Also, given the dearth of students that indicated that they score below 50%, it might help to do a follow-up study focusing specifically on alcohol use and its relationship with academic performance, in order to obtain a clearer picture.

In analysing the significant relationship between level of alcohol use and where students stay, it seems that for both sexes those resident outside Stellenbosch drink much less. It strongly appears that the greater campus culture promotes heavier drinking habits. Furthermore, it appears that this is not limited to the culture or practices of a specific fraternity membership such as a university residence, as indicated in a number of other studies (Borsari & Carey, 1999; Engs et al., 1996; Goodwin, 1990; Klein, 1994). Students living privately outside Stellenbosch most likely are postgraduate students or older people or students who do not have the means to partake in the Stellenbosch campus drinking scene. This group may also contain students who still live with their families of origin. The results do give an indication of how habits of moderate to heavy drinking permeate the whole of the Stellenbosch campus. It alludes to a broader, campus-wide sense of cohesiveness among drinkers of both sexes, which leads to social insulation and lack of social comparison of their heavy drinking habits, contrary to Borsari and Carey's (1999) findings that it is more prevalent among fraternity memberships. The results show

that although the drinking culture and habits in university residences of both sexes should be addressed, prevention programmes and alcohol policies must not ignore the student population who lives privately or does not belong to a specific fraternity.

The investigation of the relationship between language group and level of drinking produced an interesting result. It was an independent factor for males; their level of drinking is not related to their language group. However, in the case of the females a significant relationship was found mainly because of the much higher percentage of English speaking female students who were classed among the categories of moderate and heavy drinkers, contrary to their Afrikaans counterparts. The reason for this may be the well documented more conservative upbringing of Afrikaans females. To ensure success, prevention programmes at the University of Stellenbosch should have a strong focus on the English speaking female student and the male group as a whole.

Some indirect support for the above statement of the more conservative upbringing of Afrikaans females may be found when the relationship of both religious participation and moral values with the level of alcohol use (Tables 9 and 10) is examined. The influence of moral values has a highly significant negative correlation with level of drinking in the case of females. To a lesser extent this is also true for males. For both sexes a significantly negative relationship is also found between monthly attendance of a religious meeting and level of alcohol use. The weight of the evidence points towards the fact that morality and religion are factors related to drinking as supported in other studies (Engs et al., 1996; Parry & Bennetts, 1998). It specifically supports the findings of Poulsen et al. (1998) that women with stronger religious convictions consumed less alcohol and were less likely to engage in risky sexual behavior. Students of the University of Stellenbosch are mostly Afrikaans speaking (Table 3) and may thus, as has been stated above, been subject to a more conservative upbringing. This may have led to the above findings.

Being sexually active, another moral aspect, confirms the above mentioned trend, again mainly for females. A highly significant relationship was found because most female students who are sexually active are also moderate to heavy drinkers. The same was true for males, but on a lower level of significance. The possibility that the majority of these students could be postgraduates is excluded through their being primarily light drinkers or abstainers. The mere moral issue leads to a negative dimension when it transpires that a highly significant relationship exists between level

of alcohol consumption and indulging in unsafe sex after drinking, which correlates with other research (Meilman et al., cited in Prince & Bernard, 1998; Poulsen et al., 1998). This is true for both males and females and clearly shows that level of drinking has negative consequences, which affects the lives of other individuals. It appears that the results do not support research that found males to be more likely to engage in risky sexual behaviour than women (O'Hare, 1998). An important perspective with regards to the present study is that only a small minority (12% female and 15% male students) indicated engagement in unsafe sex practices after drinking. However, due to the risk of multiple sex partners and unsafe sex increasing with level of alcohol use (Meilman et al., cited in Prince & Bernard, 1998), which in turn poses the threat of sexually transmitted diseases (Parry & Bennetts, 1998), alcohol prevention programmes at the University of Stellenbosch would have to include information about the risk of unsafe sexual behaviour.

Weekly sport participation by students proved to have a moderate positive relationship with alcohol usage. Students of both sexes who regularly participated in sports had a greater likelihood of being moderate to heavy drinkers. Conversely, those who did not participate in sport weekly had a higher chance of abstaining from alcohol. It seems that frequent sport participation does not exclude heavy drinking as could be deduced from the smaller number of students who drink heavily after sport events. The results do however correlate with findings by Wechsler et al. (1997) that indicated a positive relationship between regular sport participation and heavier alcohol consumption. It may be that the weekly sport participants regard it as part of their sporting culture to engage in drinking activities during the weekends and at student functions and parties, but not necessarily drinking after sporting events. It may also be that drinking after sporting events is not even associated with the event itself. The survey by Wechsler et al. (1997) must be kept in mind as it showed other factors as strongly influencing heavy drinking among sport participating students such as living in a university residence and a party lifestyle. Whatever the reason, being involved in sport does seem to have an impact on the amount of liquor students consume, and as such, must be acknowledged in prevention programmes.

Regarding the connection between family and drinking patterns, no significant relationship was found between the quantity the parents and students consumed. This correlates with certain studies that did not find the predicted association between positive family background for alcohol abuse and the amount of alcohol consumed per week among students (Engs, 1990). Nor were there a significant

relationship found between how much male students drank, and their parents' approval of their drinking. For females, however, this relationship was highly significant, thus showing a marked gender difference regarding the influence of the parents. This could be related to a stricter upbringing of Afrikaans speaking females who conform to their parents' wishes. It may however also be that many parents are unaware how much and what their children drink at university. Incidentally 73% of the participants indicated that their parents approve of their drinking. In all probability the reason for this is that it corresponds with the percentage of students who drink lightly to moderately (Table 18).

There is a highly significant relationship between level of alcohol use and frequency of smoking and dagga (marijuana) use respectively for students of both sexes at the University of Stellenbosch. Most students who smoke weekly, drink moderately to heavily. This group of alcohol users also forms the majority of dagga users. These findings support research which found increased alcohol use to be strongly associated both with smoking (Minugh, 1998; Werner et al., 1994) and a greater likelihood of dagga use over the previous six months (Macdonald et al., 1992). With 19% male and 14% female students using dagga once or more per year (Table 20), it seems to warrant separate investigation. Prevention programmes targeting alcohol use could also target smoking, given the significant relationship and health effects.

Moderate to heavy alcohol users tend to be most at risk from the negative consequences of alcohol misuse (Poulsen et al., 1998; Treise et al., 1999). Tables 21-25 thus focused specifically on the characteristics of moderate to heavy alcohol users of both sexes in order to define this particular group.

At the University of Stellenbosch, male and female moderate to heavy drinkers spend approximately R40 and R33 respectively on alcohol per week. Male students in this group are mostly beer drinkers and buy/ drink their alcohol primarily at pubs, liquor stores and clubs. The majority of female students who fall in this group are consumers of wine, and buy/ drink their alcohol at pubs or clubs. For both sexes, Fridays and Saturdays are the days on which they are most likely to drink alcohol, with Wednesday the only weekday on which alcohol is actively sought. Student parties and weekends for both sexes, carnival week for males and student functions for females are the occasions when this group is most likely to consume alcohol heavily. These places and occasions should therefore be the main targets for policy and prevention programme formulation at the University of Stellenbosch.

It is vitally important to keep in mind Parry and Bennetts's (1998) warning that it would be a mistake to focus only on the part of the population who has a heavier consumption of alcohol, as international research points to alcohol associated problems as not limited to heavy drinkers. Any prevention strategy should thus be targeted at the student population as a whole rather than at a select group. This said however, it should not detract from most of the prevention focus being aimed at the population of moderate to heavier drinkers who are more at risk of suffering the consequences of alcohol misuse.

From the prevention perspective a strong recommendation for future research is that a longitudinal study should be undertaken. If it is not practically possible to follow the drinking patterns of students over a period of their first to fourth year, it is in the best interest of all concerned that the present research is repeated at regular intervals. A much higher percentage of the student population should ideally be included in such studies. Consideration should therefore be given to the in-class completion method successfully used by Engs (1996) in similar survey research.

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APPENDIXES**APPENDIX A: ALCOHOL QUESTIONNAIRE****STUDENT ALCOHOL QUESTIONNAIRE 2000**

1. Age: _ _ _ years
2. Gender: (Draw a circle around the applicable letter.)
- Female a
 Male b
3. Population group:
- Black a
 Coloured b
 Indian c
 White d
4. Your first language:
- Afrikaans a
 English b
 German c
 Xhosa d
 Other e
5. Your current residence as student:
- University residence a
 Other university accommodation b
 Private accommodation in Stellenbosch c
 Private accommodation outside Stellenbosch d
6. Year of study:
- First year a
 Second year b
 Senior undergraduate years c
 Post graduate years d
7. Are you presently employed?
- No a
 Yes, part-time b
 Yes, full-time c
8. What is your average academic performance?
(*Make a cross in the one box that is most applicable.*)

| 0-39 | 40-49 | 50-59 | 60-74 | 75+ |
|------|-------|-------|-------|-----|
| | | | | |

At what age did you use the following substances for the first time?
(Mark only one age group for every substance.)

| | Never used/ | 7-13y/ | 14-18y/ | 19-21/ | 22-25y/ | 26y+ | | |
|-------------|-------------|--------|---------|--------|---------|------|---|---|
| | (| a | b | c | d | e | f |) |
| 9. Tobacco | | a | b | c | d | e | f | |
| 10. Alcohol | | a | b | c | d | e | f | |
| 11. Dagga | | a | b | c | d | e | f | |
| 12. Cocaine | | a | b | c | d | e | f | |

| | Never used/ | 7-13y/ | 14-18y/ | 19-21/ | 22-25y/ | 26y+ | | |
|---------------------------|-------------|--------|---------|--------|---------|------|---|---|
| | (| a | b | c | d | e | f |) |
| 13. Amphetamines/ Ecstasy | | a | b | c | d | e | f | |
| 14. Steroids | | a | b | c | d | e | f | |
| 15. Acid/ LSD | | a | b | c | d | e | f | |
| 16. Other illegal drugs | | a | b | c | d | e | f | |

How often have you used the following substances during the past year?
(Mark only one of the following possibilities for each substance.)

- | | |
|-----------------------------------|-----------------------------|
| a. Not used | e. More than once per month |
| b. Once during the year | f. Once per week |
| c. More than once during the year | g. More than once per week |
| d. Once per month | h. Almost every day |

| | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|
| 17. Tobacco | a | b | c | d | e | f | g | h |
| 18. Alcohol | a | b | c | d | e | f | g | h |
| 19. Dagga | a | b | c | d | e | f | g | h |
| 20. Cocaine | a | b | c | d | e | f | g | h |
| 21. Amphetamines/Ecstasy | a | b | c | d | e | f | g | h |
| 22. Steroids | a | b | c | d | e | f | g | h |
| 23. Acid/ LSD | a | b | c | d | e | f | g | h |
| 24. Other illegal drugs | a | b | c | d | e | f | g | h |

How often do you think the average student on your campus uses:
(Mark only one of the following possibilities for each substance.)

- | | |
|-----------------------------------|-----------------------------|
| a. Not used | e. More than once per month |
| b. Once during the year | f. Once per week |
| c. More than once during the year | g. More than once per week |
| d. Once per month | h. Almost every day |

| | | | | | | | | |
|--------------------------|---|---|---|---|---|---|---|---|
| 25. Tobacco | a | b | c | d | e | f | g | h |
| 26. Alcohol | a | b | c | d | e | f | g | h |
| 27. Dagga | a | b | c | d | e | f | g | h |
| 28. Cocaine | a | b | c | d | e | f | g | h |
| 29. Amphetamines/Ecstasy | a | b | c | d | e | f | g | h |
| 30. Steroids | a | b | c | d | e | f | g | h |
| 31. Acid/ LSD | a | b | c | d | e | f | g | h |
| 32. Other illegal drugs | a | b | c | d | e | f | g | h |

If you do not consume any alcoholic beverages, you may skip questions 33 to 77 and continue from question 78.

33. The average amount of money spent weekly on alcohol is: R_____

**To what extent do you consume the following types of alcoholic drinks?
(Mark one option with every kind of alcoholic beverage.)**

| | Often (a) | Sometimes b | Rarely c | Never d) |
|-------------------|----------------------|------------------------|---------------------|---------------------|
| 34. Beer | a | b | c | d |
| 35. Cider | a | b | c | d |
| 36. Wine | a | b | c | d |
| 37. Whiskey | a | b | c | d |
| 38. Brandy | a | b | c | d |
| 39. Liqueur | a | b | c | d |
| 40. Shooters | a | b | c | d |
| 41. Other spirits | a | b | c | d |

Where are you most likely to buy/drink most of your alcohol?
(Mark one option on every occasion).

| | Often (a) | Sometimes b | Rarely c | Never d) |
|-------------------|----------------------|------------------------|---------------------|---------------------|
| 42 Pubs | a | b | c | d |
| 43. Clubs | a | b | c | d |
| 44. Liquor stores | a | b | c | d |
| 45. Koshuis clubs | a | b | c | d |
| 46. Restaurants | a | b | c | d |

On which days do you normally drink alcoholic beverages (a day being the whole 24 hours). (Mark the day/s with an "X". If you normally have no drinks on a particular day, write in an "O").

| 47 Monday | 48 Tuesday | 49 Wednesd ay | 50 Thursday | 51 Friday | 52 Saturday | 53 Sunday |
|--------------|---------------|---------------------|----------------|--------------|----------------|--------------|
| | | | | | | |

54. On an occasion when you consume alcoholic drinks, how many drinks do you usually have? (Choose only one of the options.)

- | | |
|-----------------------------|---|
| a. One or two drinks | a |
| b. Three or four drinks | b |
| c. Five to seven drinks | c |
| d. Eight to ten drinks | d |
| e. Eleven to fifteen drinks | e |
| f. Sixteen or more drinks | f |
| g. Not applicable | g |

55. Think back over the last two weeks. How many times have you had 5 (men)/ 4 (women) or more drinks in one sitting? (Choose only one of the options.)

- | | |
|------------------------|---|
| a. None | a |
| b. Once | b |
| c. Twice | c |
| d. Three to five times | d |
| e. Six to nine times | e |
| f. 10 or more times | f |

I am more likely to consume 5 (men)/ 4 (women) drinks or more in a row on the following occasions? (Mark all the possible items that are applicable.)

- | | |
|---|----------|
| 56. During the first week of a semester | Yes / No |
| 57. During carnival week | Y / N |
| 58. During exams | Y / N |
| 59. At student functions (e.g. Henne/Hanedinee, Huisdans) | Y / N |
| 60. At student parties (e.g. birthdays) | Y / N |
| 61. After sport events | Y / N |
| 62. During holidays | Y / N |
| 63. On weekends | Y / N |

Over the past year, have you experienced any of the following?

- | | |
|---|-------|
| 64. Taking alcohol often in larger amounts or over a longer period than was intended. | Y / N |
| 65. A need for increased amounts of alcohol to become intoxicated or achieve the desired effect. | Y / N |
| 66. A persistent desire in cutting down or controlling your alcohol use. | Y / N |
| 67. Difficulty in cutting down or controlling your alcohol use. | Y / N |
| 68. Trying to avoid using alcohol for a determined period of time. | Y / N |
| 69. Spending a great deal of time in obtaining alcohol, using it or recovering from its effects. | Y / N |
| 70. Reducing or giving up social, occupational or recreational activities because of alcohol use. | Y / N |
| 71. Using alcohol despite knowledge of a psychological or physical problem likely to be caused or exacerbated by alcohol. | Y / N |
| 72. Drinking before going to a party? | Y / N |
| 73. That you needed a drink or two just to relax? | Y / N |
| 74. Regularly drinking more than your friends? | Y / N |
| 75. Falling asleep after drinking without knowing how you got to bed? | Y / N |
| 76. Had a bad conscience after drinking? | Y / N |
| 77. Taking a drink or a beer the day after a party? | Y / N |

Have you ever experienced any of the following?

Never/sometimes/ often
a b c

- | | | | |
|---|---|---|---|
| 78. Driven a car after having had several drinks? | a | b | c |
| 79. Driven a car when you were drunk? | a | b | c |
| 80. Ever been a passenger in a car with a drunk driver? | a | b | c |
| 81. Ever been arrested for driving while intoxicated.? | a | b | c |

| | <i>Never/sometimes/ often</i> | | |
|---|-------------------------------|---|---|
| 82. Ever become nauseated and vomited from drinking? | a | b | c |
| 83. Had a hangover due to drinking? | a | b | c |
| 84. Not remembered what happened while you were drinking? | a | b | c |
| 85. Done something after drinking which you later regretted? | a | b | c |
| 86. Damaged property, pulled a fire alarm or other such actions after drinking? | a | b | c |
| 87. Gone to class while still drunk? | a | b | c |
| 88. Missed a class because of a hangover? | a | b | c |
| 89. Not prepared well for a test/ exam as a consequence of drinking too much? | a | b | c |
| 90. Missed a test or examination because of heavy drinking? | a | b | c |
| 91. Had a physical illness caused by drinking? | a | b | c |
| 92. Got into a fight after drinking? | a | b | c |
| 93. Been hurt or injured after or during drinking? | a | b | c |
| 94. Physically hurt somebody during or after drinking? | a | b | c |
| 95. Been in trouble with the police? | a | b | c |
| 96. Been in trouble with the university or residence authorities? | a | b | c |
| 97. Lost a job because of drinking? | a | b | c |
| 98. Been involved in some type of accident after drinking? | a | b | c |
| 99. Been criticized by someone else because of drinking? | a | b | c |
| 100. Thought on occasion that you might have a drinking problem? | a | b | c |
| 101. Been pressurized by your friends/peers/fellow-students to drink alcohol? | a | b | c |
| 102. Pressurized friends/peers/fellow-students to drink alcohol? | a | b | c |

How would you respond to the following statements?

| | |
|---|----------|
| 103. I am responsible for deciding to drink alcohol or not. | Yes / No |
| 104. At a party, if I don't want to drink any alcohol, I don't. | Y / N |
| 105. Drinking alcohol improves my social confidence. | Y / N |
| 106. Alcohol helps me feel bold and act without inhibition. | Y / N |
| 107. I usually drink when I am with my friends. | Y / N |
| 108. I drink in order to be accepted by my friends. | Y / N |
| 109. Alcohol helps me calm my nerves. | Y / N |
| 110. I drink to relieve academic pressure. | Y / N |
| 111. I drink to relieve emotional pressure. | Y / N |
| 112. Drinking improves my sexual performance. | Y / N |
| 113. Are you involved in sport? | Y / N |
| 114. Are fitness and health important to you? | Y / N |
| 115. Do you participate in sport more than once a week? | Y / N |
| 116. Would you consider yourself a religious person? | Y / N |
| 117. Do you attend a religious meeting more than once a month? | Y / N |
| 118. Does your religion forbid the use of alcohol? | Y / N |
| 119. Do your moral values influence how much you drink? | Y / N |
| 120. Are you sexually active? | Y / N |

121. Have you engaged in unsafe sex practices after drinking? Y / N
 122. Have you been taken advantage of sexually by another person during or after drinking? Y / N
 123. Have you taken advantage of another person sexually during or after drinking? Y / N

Campus situation on alcohol and drugs:

(Choose one of the three options.)

- | | Yes/ No / Uncertain | | |
|---|---------------------|---|---|
| | a | b | c |
| 124. Do you believe your campus is concerned about the prevention of drug and alcohol use? | a | b | c |
| 125. Does your campus have alcohol and drug policies? | a | b | c |
| 126. If so, are they enforced? | a | b | c |
| 127. Does your campus have a drug and alcohol prevention program? | a | b | c |
| 128. Are you actively involved in efforts to prevent drug and alcohol use problems on your campus? | a | b | c |
| 129. Does your university have strict enough rules regarding alcohol and drug usage? | a | b | c |
| 130. Do you believe your university provide enough alcohol and drug education? | a | b | c |
| 131. Does your university provide counseling for someone with alcohol or drug problem? | a | b | c |
| 132. Are drugs, other than alcohol easy to buy at university? | a | b | c |
| 133. Do your residence/ house/ flat members drink more alcohol than members of other residences/houses/ flats do? | a | b | c |
| 134. Do you think someone in your residence/ house/flat has problems because of drinking? | a | b | c |
| 135. Does your residence have strict enough rules regarding alcohol use? | a | b | c |
| 136. If so, are they enforced? | a | b | c |
| 137. Has any of your parent's (or stepparent's) drinking ever caused you any problems? | Yes/No | | |
| 138. Do you ever wish that one or both of the parents (stepparents) would drink less? | Y / N | | |
| 139. Have you ever felt scared or angry because one of your parents (stepparents) was not able to stop drinking? | Y / N | | |
| 140. Do parents or siblings have a problem with alcoholism? | Y / N | | |
| 141. Do your parents approve of your drinking? | Y / N | | |

Do you agree or disagree with the following statements?

- | | | | | |
|--|--------------------------------|---|---|---|
| | <i>Strongly disagree</i> | a | | |
| | <i>Disagree to some extent</i> | b | | |
| | <i>Agree to some extent</i> | c | | |
| | <i>Strongly agree</i> | d | | |
| 142. Most students drink too much. | a | b | c | d |
| 143. People have more fun when are they drinking. | a | b | c | d |
| 144. People are more aggressive when they're drinking. | a | b | c | d |
| 145. Alcoholics can't control their drinking. | a | b | c | d |
| 146. People get depressed after drinking. | a | b | c | d |
| 147. You can't be an alcoholic if you only drink beer. | a | b | c | d |
| 148. To get rid of a hangover, drink the next morning. | a | b | c | d |

- 149. It is dangerous to drink and drive. a b c d
- 150. It is unsafe for a female person to get drunk
in unknown company. a b c d
- 151. It is dangerous to accept a drink from a person
you don't know. a b c d
- 152. People risk harming them when they drink too much. a b c d
- 153. Other students' drinking interrupts my studying. a b c d
- 154. Other students' drinking makes me feel unsafe. a b c d
- 155. Other students' drinking intrudes on/ messes up
my physical living space. a b c d
- 156. Other students' drinking prevents me from enjoying events
(for example sports, social events, and parties). a b c d
- 157. Other students' drinking affects my involvement in
sport teams or other organized groups. a b c d
- 158. Other students' drinking does not interfere with my life. a b c d

Do you have any further commentary on (a) alcohol use or abuse on campus, (b) how to deal with it or (c) on the present questionnaire?

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Please put the questionnaire in the envelope provided and post it back to us or deliver it directly to us at the Division for Clinical Psychology, 49 Victoria Street.

THANK YOU FOR YOUR PARTICIPATION