Personality, Alcohol Use and the Mediating Role of Alcohol-Related Protective Behavioural Strategies among College Students

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Title

Personality, Self-Esteem and the Mediating Role of Alcohol-Related Protective Behavioural Strategies among College Students
Abstract

The aim of this study is to determine whether the relationship between personality and alcohol use are mediated by protective behavioural strategies (PBS). Data was obtained using the PBS Scale (Martens et al., 2005) along with the Big Five Inventory (John & Srivastava, 1999) among an Irish college population. Results from a quantitative study consisting of a sample size of 125 showed that (a) gender differences do exist in relation to alcohol consumption and PBS use, and (b) that conscientiousness/ agreeableness and alcohol use are partially mediated by the use of PBS. It is anticipated that through research on PBS it may become helpful to include the concept of PBS into alcohol intervention programs with college students.
1.0 Introduction

The stereotype of the Irish drunk is not an uncommon typecast and has shaped the widespread impression of alcohol misuse in Ireland. While stereotypes are often based on images that are generally wrong and discriminatory, it is important to recognise some truth to the real problems of the misuse of alcohol. In the past decade alcohol consumption has risen rapidly in Ireland, with Irish adults currently among the highest consumers of alcohol in Europe (Department of Health and Children, 2004). In 2009, average alcohol consumption was 11.3 litres per adult, twice the average in 1960 (Alcohol Action Ireland, n.d.), with four out of five adults reporting binge drinking in the national survey of health and lifestyles in Ireland. (Morgan et al. 2009).

College is one of the best times of most people’s lives, moving away from home, finding new friends, learning new things, making memories. It’s all part of the experience, challenging and exciting. Drinking and partying has also become an important part in the social aspects of college life, and is a good way of getting out there and meeting new people. However, it’s when life becomes all play and no work that the games stop been fun. In today’s society, drinking alcohol is posing more and more of an issue among our college population.

1.1 Binge Drinking

There are many reasons as to why students drink; to be social, for pleasure, when concerned or trouble, when depressed, anxious, worried, lonesome or simply just to relax. Of considerable concern is the fact that many college students engage in heavy drinking regularly. There is debate on what actually defines the term binge drinking. However, the World Health Organisation (2006) defines it as having 6+ standard drinks on one single drinking occasion.
A standard drink measures the amount of alcohol, not the amount of liquid you're drinking - because it's the alcohol content that is most important to track (Drink Aware). One standard drink equates to 10 grams of pure alcohol, i.e. ½ pint of beer, a small glass of wine, or a single measure of a spirit. Worryingly the national lifestyle survey, SLAN, states that almost one-quarter of young people (24%) aged 18-29 reported drinking 9 or more standard drinks on a typical drinking occasion, (Morgan et al. 2009). Another point of worry is the fact that the college lifestyle and attitudinal national, (CLAN), survey has placed this percentage much higher. In this report it was found that over 61% of males and 44% of females reported participating in binge drinking sessions at least weekly (Hope, Dring & Dring, 2005). Also a study on alcohol consumption among students in University College Cork found an emerging trend showing females binge drinking at least as often as their male counterparts, (McEnroe, 2010). This is another new development which is also a cause of worry. In an interview by the British pop singer Jessie J, she announced her shock at the behaviour of college students at a recent event in one of Ireland’s most recognised universities. She was dismayed at the drunkenness displayed at the gig, such as girls lying unconscious on the ground with others so drunk they couldn’t stand upright.

"Just came off stage at trinity ball. Probably one of the hardest gigs to date. To see so many people so drunk they couldn't even stand. Girls unconscious and (students were) literally trampling on each other. It wasn't easy." (Horan, 2011).

Irish singer ‘Bressie’ hit back with the comment “Welcome to Ireland”, which highlights the fact that consuming alcohol to this extent is now the norm among college students in Ireland, while emphasising the need for new research on protective strategies to enable more responsible drinking.
The figures emphasised above show that binge drinking to this extent is fast becoming the norm among college students. It also highlights the importance of conducting research on alcohol consumption to understand why individuals drink. By carrying out research into the area of alcohol use and PBS use it is hoped that it may become helpful to include the concept of PBS into alcohol intervention programs with college students in order to cut down on the rising epidemic of binge drinking throughout college campuses in Ireland.

1.2 Negative Alcohol-Related Consequences

As would be expected, and of additional concern, there is a mass of problems that often result as an effect of excessive alcohol use. This is particularly prevalent among college students, who are often more vulnerable to the experimentation of alcohol substances, (Novacek, Raskin & Hogan, 1991, as cited in Sullivan & Risler, 2002), and who often drink to such an extent that, as such, they partake is more risk taking behaviour, risking their mental, emotional and physical health. The CLAN report showed that some of the more common negative consequences experienced as a result of binge drinking included regretting things said or done after drinking (62%), feeling the effects of alcohol while at class/work (50%), missing school/work days (44%) and harming studies/work (28%), (Hope et al, 2005). As well as this, students are more likely to have money troubles, to get into fights and have unprotected sex, (Wray, Simons, & Dvorak, 2011). In a survey by the Crisis Pregnancy Agency (2007) it was found that 20% of participants under the age of 25 said that alcohol has contributed to them having unprotected sex in the past.

The Health Research Board (HRB), (Kelly, 2011), has stated that 672 deaths from alcohol related poisoning/ overdose occurred between 2004 and 2008, and that 2/3 of these were male. ‘Drinking games’, e.g. Kings, are becoming ever more popular in today’s drinking age, especially among college students, and can have a serious affect on a person’s well being. They
make everyone drink too much, too fast, and can have seriously dangerous consequences. The Irish Times reports the case of 26 year old Graham Parish, who died from acute alcohol poisoning resulting from a nights heavy drinking where he consumed 10 measures of spirits in a pint glass in one go during a ‘drinking game’, (Kane, 2011). The HRB also found that 3336 deaths of alcohol dependent people in the same period were from medical causes as a result of alcoholism, such as liver disease. Younger alcoholics in the age group 24-35 were found to be the most susceptible to liver disease (Kelly, 2011). Since 2007, the male rate of deliberate self harm in Cork has doubled, with the rate among females showing an increase of 35%. This is almost 2 ½ times the national rate, and the misuse and abuse of alcohol as been cited as one of the factors involved, (Ring, 2011).

Alcohol is also a key contributory factor in the increase of sexually transmitted diseases among young people in Kerry and Cork over the past 10 years (Browne, 2011). In the space of 10 years, there has been a 700% increase in cases of Chlamydia in Ireland (Think Contraception). Misuse of alcohol is a major concern in many aspects. According to the Irish Examiner (O’ Keeffe 2011), the misuse of alcohol was directly related to 70,000 crimes last year, an increase of 5000 alcohol related crimes compared to six years previous. Additionally, alcohol is also believed to be a factor in ½ of homicides, ½ of adult sex abuse cases and 1/3 of domestic violence cases. As well as this it has been reported that 1 in 5 men have been pushed, hit or assaulted as a result of someone else’s drinking, (Condon, 2011). In a press release from the Houses of the Oireachtas, it was also put forward that due to the low cost selling of alcohol, people can now become addicted to alcohol for less than €10 a week. The Minister of State for Primary Care Roisin Shortall has proposed that Irish people have an unhealthy relationship with alcohol and the time is right to tackle it, (O’ Keeffe, 2011).
1.3 Protective Behavioural Strategies and Alcohol Use

Protective behavioural strategies (PBS) are a relatively new area of interest concentrating on the issue of heavy drinking among college students. Its focal point is on two things; reducing the amount of alcohol consumed and reducing those negative consequences experienced as an association to alcohol and is a factor which can be taught to students, (Borden, Martens, McBride, Sheline, Bloch, & Dude, 2011, Delva, Smith, Howell, Harrison, Wilke, & Jackson, 2004, Martens, Ferrier, Sheehy, Corbett, Anderson & Simmons, 2005). PBS are therefore defined as being actions which people use to cut down on the amount of alcohol they consume in order to avoid these negative consequences as a result of drinking (Martens, Taylor, Damann, Page, Mowry, & Cimini, 2004). That is, PBS are active strategies used by students to limit alcohol related negative consequences. These strategies include using a designated driver, alternating alcoholic and non alcoholic drinks, avoiding mixing different types of alcohol and leaving the bar at a pre-determined time.

Several studies have reported a link between the use of PBS and a decrease in negative alcohol related consequences. In a study conducted among 1,043 undergraduates on the relationship between PBS and drinking consequences it was found that the most common negative consequences for both male and females included doing something they later regretted, engaging in unprotected sex and experiencing academic problems, (Delva et al., 2004). The study also shows that those who engaged in more types of PBS more often were less likely to experience alcohol related negative consequences. However, important gender differences were also uncovered. It was discovered that females were more likely to report over reliance on PBS, and the relationship between PBS and negative consequences was stronger for females. This can be reasoned by women’s need for self protection against the threat of sexual assault, and are
more likely to socialise in groups, thereby strengthening the need routine of protecting each other. As well as this, in another study of 4,154 students, it was found that the relationship between binge drinking and alcohol related problems was stronger for those low versus high on PBS use, (Borden et al., 2011). While Delva et al. (2004) showed that PBS use was directly associated with fewer alcohol related negative consequences Borden et al. (2011) go further to show that PBS use is also associated with a weaker association between alcohol use and negative consequences. This supports the protective aspect of PBS.

Other studies have extended the research examining alcohol related PBS by showing that, for women, more frequent use of strategies is associated with experiencing fewer sex related alcohol negative consequences, and that this relationship is mediated by reduced number of drinks during sexual behaviour, (Lewis, Rees, Logan, Kaysen, & Kilmer, 2010). Similarly, it was found that depressive symptoms were directly associated with alcohol related negative consequences but not with alcohol use, and that PBS partially mediated the relationship between depressive symptoms and alcohol related negative consequences, (Martens, Martin, Hatchett, Fowler, Fleming, Karakashian, & Cimini, 2008). As well as this, Lawrence, Abel, and Hall, (2010) hypothesised that alcohol consumption of male students would be significantly different from female students, and that the use of PBS of male students would differ from female students. However, they found no differences in gender, but in ethnicity instead, with results indicating that European Americans are significantly more likely that African Americans to use altering drinking behaviours. Furthermore, Lewis, Patrick, Lee, Kaysen, Mittman, and Neighbours, (2011), examined the relationship between and within person relationships among PBS, alcohol consumption and related negative consequences during the 21st birthday week. They used a sample of undergraduate participants who turned 21 during three academic semesters including
only those who reported consuming at least one drink during the 21st birthday week. This study demonstrates that manner of drinking PBS were consistently associated with reduced drinking and less alcohol related negative consequences at both between and within person levels suggesting that these PBS may be especially useful to focus on with students as they allow students to participate in drinking but in a less harmful way, i.e. avoiding ‘drinking games’, avoiding drinking shots of hard liquor etc.

1.4 Self-Esteem and Alcohol Use

Other factors which lead to alcohol consumption among undergraduate college students include extroverted personality, increased anxiety, emotional immaturity and low self esteem. Vaillant and Scanlan (1996) suggest a significant finding for self esteem and alcohol consumption for male and female students would indicate that students under the influence of alcohol have the belief that alcohol will increase their feeling of well being. In a study by McNair, Carter and Williams, (1988) examining the union of alcohol use and self esteem on risky sexual behaviour and perceptions of risk for male and female college students, it was found that for low drinking students those with higher self esteem reported greater condom use, while women and students low in self esteem indicated greater perceptions of risk for themselves and their partners. In another study by Williams and Corrigan (1992) it was found that adult children of alcoholics had lower self esteem and were more socially anxious than normal. Also, in relation to the health of the student, the CLAN survey found that a higher number of students who drank alcohol but did not binge drink on a regular basis were more satisfied with their health and perceived their general health as excellent or very good in comparison to regular binge drinkers (Hope et al, 2005). However, there was no difference in quality of life or perceived mental health.
1.5 Personality and Alcohol Use

Ruiz, Pincus, and Kelly (2003) found that

“The personality profile associated with drinking in college students appears to be someone who is disinhibited and interpersonally engaged but with tendencies to treat others in an abrasive and manipulative manner and prone to experiencing negative affect related to interpersonal relationships”.

Personality is defined as being the distinctive and relatively enduring ways of thinking, feeling and acting that characterizes a person’s responses to life situations, (Passer & Smith, 2007, p. 442). Although we may sometimes regard ourselves as being ‘like’ another person or even the polar opposite, being totally ‘unlike’ or different, personality is very much an individual and personal entity, unique in a sense from person to person. Each of us is (1) what all humans are, (2) what some other humans are and (3) what no other human in the history of the world has been, is, or will be, (Kluckhon & Murray, 1953 as cited in Passer & Smith, 2007, p. 63). It is a constant factor throughout a person’s life span, rarely changing. What this means is that when put in a situation, we will act the same way every time, even in varying circumstances.

Personality is now looked at as being a possible explanation of drinking motives, and certain characteristics have been identified as being risk factors for the misuse and abuse of alcohol. Using the Five Factor Model of personality, the personality factors most consistently related to alcohol abuse are high neuroticism, low conscientiousness and low agreeableness (Flory et al. 2002).

1.5.1 Neuroticism

Neuroticism is one of the Big Five factors of personality and is composed of six facets; anxiety, angry hostility, depression, self-consciousness, impulsiveness and vulnerability (Costa
& McCrae, 1992, as cited in Flory, 2002). Individuals with high levels of neuroticism are prone to feeling angry, hostile, worried, emotional and insecure. They are also more likely to express distress, discomfort and dissatisfaction across a range of situations (Gunthert, Cohen & Armeli, 1999, as cited in Taylor, 2009 p. 175). Neuroticism is also reliably associated with chronic pain (Ramirez-Maestre, Lopez-Martinez & Zarazaga, 2004, as cited in Taylor, 2009, p. 253).

Furthermore, those who score high in neuroticism are also more prone to heavy drinking (Frances, Franklin & Flavin, 1986, as cited in Taylor, 2009, p. 175) and are also at increased risk for arthritis, diabetes, kidney/liver disease and ulcers (Goodwin, Cox & Clara, 2006).

Consequently, those high in this trait have a tendency to dwell on the negative, are hypersensitive to criticism and are subject to feelings of self-doubt and isolation.

In a sample of 378 young adults examining the association between alcohol use disorders and psychological distress over an 11 year period, Jackson and Sher (2003) found that neuroticism was a common predictor of both alcohol use disorders and psychological distress. Similarly, in a study of 200 students who had used alcohol in the past year which investigated the relationships between five-factor model domains and facets and drinking and alcohol-related problems, it was found that high levels of neuroticism were associated with an increased level of drinking (Ruiz et al 2003). Neuroticism is also associated with higher levels of depression and anxiety which in turn have been linked with alcohol abuse. Thus, for neurotic individuals, drinking is a means of coping with negative emotions (Hussong, 2003). Hussong (2003) also reports that those with high levels of neuroticism drink more frequently than their peers. It is likely that the common immediate goal is to alleviate psychological distress via the use of alcohol. In conclusion, neuroticism is widely linked with a variety of health related variables, including alcohol abuse.
1.5.2 Conscientiousness

Conscientiousness is another of the Big Five personality factors and is also composed of six facets: competence, order, dutifulness, achievement-striving, self-discipline and deliberation (Costa & McCrae, 1992, as cited in Flory, 2002). Individuals with high levels of conscientiousness are considered to be dependable, careful, thorough, responsible, organised, hardworking, achievement orientated, co-operative and perseverant (Barrick & Mount, 1991, as cited in LePine & Van Dyne, 2001). Conscientiousness has also been found to moderate the stress-illness relationship. In a study by Friedman et al. (1995) it was found that those who were highly conscientious were more likely to live to an old age. This could be due to the fact that highly conscientious people may more reliably practice good health habits and are more successful in avoiding situations which could be harmful to them (Hampson, Goldberg, Vogt & Dubanoski, 2006, as cited in Taylor, 2009, p. 179). In a longitudinal study of a birth cohort (Caspi et al, 1997), researchers used the Multidimensional Personality Questionnaire (MPQ) once participants reached 18 years of age to assess personality traits in relation to health risk behaviours such as alcohol dependence and unsafe sex. Results showed that high levels of conscientiousness were associated with less risky sexual behaviour, lower rates of violent crime and with lower rates of alcohol use. Likewise, in longitudinal study of 481 participants Flory et al (2002) found that symptoms of alcohol abuse were associated with low conscientiousness. Similarly, Trull and Sher (1994) and Martin and Sher (1994) both found that individuals who met the criteria for alcohol use disorders were introverted and less conscientiousness.
1.5.3 Agreeableness

The third and final personality trait that will be looked at is agreeableness, another of the Big Five personality factors. Similar to neuroticism and conscientiousness, agreeableness is also made up of six facets; trust, straightforwardness, altruism, compliance, modesty and tender mindedness. Individuals who are agreeable are commonly seen as being likable, friendly, courteous, trusting, good-natured and tolerant (Barrick & Mount 1991, as cited in LePine & Van Dyne, 2001). They are more likely to engage in teamwork and have higher quality interpersonal skills. Flory et al (2002) found that symptoms of alcohol abuse were associated with low scores on agreeableness. Similarly, Martin and Sher (1994) also examined the relationship between alcohol use disorders and personality and discovered that individuals with alcohol use disorders were found to be more neurotic and less agreeable than those in never diagnosed groups.

1.6 The Current Study

Alcohol consumption is posing more and more of an issue among our college population. Drink Aware is one such organisation who has produced survival guides that contain helpful tips on surviving college and nights out as well as numerous campaigns in order to combat this situation. For example, their ‘rethinking our drinking’ campaign is a TV advertisement which aims to promote personal re-appraisal of drinking behaviour. It centres on a series of ‘funny’ drunken moments caught on CCTV with audience laughter, which ends with the viewer being asked “Still think it’s just a laugh?” As well as organisations like Drink Aware, universities and colleges across Ireland are starting their own campaigns. In the University of Limerick students have designed projects to generate awareness of the positive effects of a responsible approach to drinking and the negative effects of over consumption, e.g. “Who do you become when you
drink?” (Drink Aware). Campaigns like these are aimed at reducing the amount of alcohol that students and the public are consuming and help to promote responsible drinking.

Protective behavioural strategies (PBS) are a relatively new area of interest concentrating on this issue. Its focal point is on two things; reducing the amount of alcohol consumed and reducing the negative consequences experienced as an association to alcohol. PBS can play an important role in combating the issue of student drinking and are factors which could be taught to students through educational interventions. Although we have learned from previous research that certain personality characteristics can influence alcohol usage, little is known about how or why this relationship exists. And, moreover, while it has also been established that the use of PBS is associated with a decrease in alcohol consumption and subsequent negative alcohol related consequences, (Martens et al 2004, 2005) it is not known what predicts an individual’s use of PBS in the first place. Following a review of the relevant literature, several studies were found to examine PBS among an American population (Lewis et al., 2010; Lewis et al., 2011); however it was found that research exploring the use of PBS in moderating alcohol consumption amongst an Irish student population is limited. Therefore, the aim of this study is to determine whether the relationships between personality characteristics and alcohol use are mediated by the use of PBS. Based on previous studies, the following hypothesis will be tested for.

1.7 Main Hypothesis

**Hypothesis One:** it is hypothesized that alcohol consumption of male students will be significantly higher from female students and that use of PBS among male students will differ to their female counterparts, that is, there will be gender differences.
**Hypothesis Two:** it is expected that PBS will mediate the relationship between neuroticism and alcohol use in that individuals with higher levels of this trait will use fewer PBS while consuming more alcohol than their peers with lower levels of neuroticism.

**Hypothesis Three:** it is predicted that PBS will mediate the relationship between conscientiousness/agreeableness and alcohol use in that those with high levels of conscientiousness/agreeableness will use more PBS while consuming alcohol than peers who are less conscientious/agreeable.

**Hypothesis Four:** it is also expected that there will be differences in self esteem levels and alcohol use.

The study also hopes to show that PBS will moderate the relationship between binge drinking and negative alcohol related consequences. That is, those who have higher usage of PBS will report lower negative alcohol related consequences, compared to their peers who don’t use such behaviours. As a final point, it is intended to identify types of PBS students engage in when consuming alcohol and the frequency to which students use these strategies. It is hoped that the results of this study will yield socially and clinically valuable information which may be useful in combating the problem of heavy drinking among college students. It is also anticipated that through research on PBS it may become helpful to include the concept of PBS into alcohol intervention programs with college students.
2.0 Method

2.1 Materials

Data was gathered using a purposely devised questionnaire which included questions on demographic information, (age, gender, year in college), as well as The Daily Drinking Questionnaire, Rutgers Alcohol Problem Index, The Protective Behaviours Strategies Scale, The General Health Questionnaire, The Rosenberg Self Esteem Questionnaire and The Big Five Inventory. Overall, one hundred and thirty-five questionnaires were drawn up and used. Four of these were not fully completed and so excluded, and a further six were excluded due to the fact that the participants did not drink alcohol. In total, one hundred and twenty-five questionnaires were completed. Data collected from completed questionnaires were analysed using SPSS version 18. Pens/pencils were also used.

2.1.1 Demographics Questionnaire

The purpose of a demographics questionnaire was to find out such information as age, gender, year in college, type of course (undergraduate or postgraduate), whether it was a part time or full time course and the geographic location of the participant (rural or urban). Participants were also asked if they had consumed alcohol within the last six months.

2.1.2 Daily Drinking Questionnaire, (Collins, Parks & Marlatt, 1985)

The Daily Drinking Questionnaire (DDQ) is a measure of an individual's typical pattern of drinking alcohol over the previous thirty day period. It asks individuals to indicate how many drinks they have typically consumed on each day of the week. The Daily Drinking Questionnaire is commonly used in alcohol studies with college students.
2.1.3 Rutgers Alcohol Problem Index, (White & Labouvie, 1989)

The Rutgers Alcohol Problem Index (RAPI) is a twenty-three item measure that assesses the extent of problems experienced as a result of consuming alcohol. Participants are asked how many times they have experienced each of the twenty-three problems during a particular time period, which is six months for the purposes of the present study. Responses are scored on a Likert scale ranging from zero (never) to four (more than ten times).

2.1.4 Protective Behaviours Strategies Scale, (Martens et al, 2005)

The Protective Behavioural Strategies Scale (PBSS) is a relatively new instrument comprising of fifteen items. The scale is further made up of three subscales: Stopping/Limiting Drinking, (e.g. determine not to have a set number of drinks), Manner of Drinking, (e.g. avoid mixing different types of alcohol), and Serious Harm Reduction, (e.g. use a designated driver). Participants are asked to indicate using a six-point scale, which ranges from one (never) to six (always), the degree to which they have engaged in the fifteen indicated behaviours while they were actively consuming alcohol.

2.1.5 General Health Questionnaire, (Goldberg, 1992).

The twelve item General Health Questionnaire (GHQ-12) was used for the purpose of this study. It is a widely used instrument intended to screen for general psychiatric morbidity. It is a self report questionnaire comprising six items that are positive descriptions of mood states (e.g. felt able to overcome difficulties) and six that are negative descriptions of mood states (e.g. felt like a worthless person). Each statement has four possible answers; less than usual, no more
than usual, rather more than usual or much more than usual, and responses score zero to three respectively.

2.1.6 Self Esteem Questionnaire, (Rosenberg, 1965).

The Rosenberg questionnaire is a widely used measure of self-esteem. This scale is a ten item Likert Scale with items answered on a four point scale, strongly agree to strongly disagree. It consists of statements related to overall feelings of self worth. The scale ranges between zero to thirty. Scores between fifteen and twenty-five are considered normal, while scores below fifteen suggest low self esteem.

2.1.7 Big Five Inventory, (John & Srivastava, 1999).

The Big Five Inventory (BFI) is a forty-four item questionnaire designed to assess the five commonly recognized factors of personality: Openness (ten items), Conscientiousness (nine items), Extraversion (eight items), Agreeableness (none items) and Neuroticism (eight items). Each of the items is scored on a five point scale ranging from one (disagree strongly) to five (agree strongly). Items on the BFI are short phrases e.g. I am someone who is talkative; I am someone who tends to be lazy and so on.

2.2 Participants

Questionnaires were directly given to a sample of college students. All students were currently enrolled in either full time or part time courses in Dublin Business School. Permission to collect data was obtained from module lecturers. Participants were guaranteed confidentiality and anonymity, and were told that they could withdraw from the study at any time. The total number of participants (n=125) was made up of forty-three males (n=43) and eighty-two females.
(n=82). Ages of the participants ranged between eighteen and forty-nine, with the mean age being twenty-five (n=25). Statistics also showed that fifty of these participants were in first year (n=50), fifty were in second year (n=50) and twenty-five were in final year (n=25). It was also found that forty participants were in part-time education (n=40), while eighty-five were in full-time education (n=85). Furthermore, fifty participants were enrolled in a postgraduate course (n=fifty), while the remaining seventy-five were enrolled in an undergraduate program (n=75). In addition, the geographic location of the participants was made up of forty living in rural areas (n=40), and eighty-five were living in urban areas (n=85).

2.3 Design

Due to this being a quantitative research method approach, the research carried out will be structured and statistically based. It will take a non-experimental approach. A correlational design is therefore most suited to this research study. Predictor variables include age, gender, self-esteem, general health and personality. Criterion variables include protective behavioural strategies and alcohol consumption.

2.4 Procedure

Once the research proposal was approved, permission was sought from module lecturers of first, second and final year programs to administer booklets to classes. A time and date was arranged with lecturers and questionnaires were then administered to both full time and part time classes in Dublin Business School. The researcher gave a brief outline of the nature of the study and each participant was instructed to read the introduction page of the questionnaire booklet. Care was also taken to ensure that ethical considerations were met by fully informing the participant of their guaranteed confidentiality and anonymity. Participants were also informed of
their right to withdraw from the study at any time. The researcher also stated that there was no right or wrong answers and stressed the importance of being open and honest. Instructions were also given with each questionnaire on how to answer the statements. Each questionnaire booklet also contained a final page with telephone numbers and email addresses for the organisation Samaritans, which the participant may have found useful if they had been affected in any way by the questions asked. Contact details for the researcher were also provided should the participant require further information on the study. Once the questionnaires were completed they were placed in an envelope and kept closed until ready for analysis. Participants were thanked for their time in taking part in the study, and were assured confidentiality. The questionnaire booklet took approximately fifteen to twenty minutes to complete, and participation was done on a voluntary basis. No problems or concerns were encountered which may have affected the research. Incomplete questionnaires totalling four were discarded. A further six questionnaires were discarded where the participant did not drink alcohol.

2.5 Data Analysis

An independent t-test will be used to test for gender differences in alcohol consumption and PBS use. An ANOVA will also be used to test for differences between PBS use and year in college. Bivariate correlations will be carried out to look for associations between the variables. Following this, a partial correlation will be carried out to test for a meditational effect between alcohol consumption, PBS and the personality traits neuroticism, conscientiousness and agreeableness. To further test this meditational effect, multiple regressions will also be carried out on the variables. Finally the relationship between self esteem and alcohol use will be tested using bivariate correlations.
3.0 Results

Out of a total sample of one hundred and thirty five, ten students were eliminated for one of two reasons: they either indicated that they had not had an alcoholic beverage during the previous six month period or they failed to provide responses to a large number of questions on the questionnaires used. Once these cases were deleted, one hundred and twenty five cases with complete data remained. Descriptive statistics and inferential statistics were conducted using SPSS (version 18). Means, standard deviations, maximum and minimum scores as well as range were all calculated on the variables. Mahalanobis was also calculated for each variable and it indicated that there were no cases considered to be outliers. Results of the analysis are outlined below.

3.1 Descriptive Statistics:

In relation to alcohol, it was found that the mean age of the first drink of alcohol was fifteen (n=15.10). Overall, participants reported a mean maximum number of drinks consumed on a single occasion over the past 30 days as 8.15 (SD_6.257), 1.40 heavy episodic drinking episodes in the previous 2 weeks (SD_1.581), and a RAPI score of 11.94 (SD_13.268)

3.2 Hypothesis One:

It is hypothesized that alcohol consumption of male students will be significantly higher from female students and that use of PBS among male students will differ to their female counterparts, that is, there will be gender differences.
3.2.1 T-Test Analysis

An independent t-test found that there were significant gender differences in terms of alcohol consumption and use of PBS, with males consuming more than females, \( t (123) = 2.215, p = 0.29 \) and females using more PBS than males across all three subscales, Limiting/Stopping Drinking, \( t (123) = -3.584, p = 0.01 \), Manner of Drinking, \( t (123) = -4.366, p = .000 \) and Serious Harm Reduction, \( t (123) = -6.791, p = .000 \). Males also experienced more negative alcohol related consequences compared to their female counterparts \( t (123) = 2.215, p = 0.29 \). This supports the first hypothesis. Furthermore, an ANOVA found no significant differences in alcohol consumption existed in relation to class year (i.e., first, second or final year), \( F (2,125) = .167, p > .05 \).

3.3 Hypothesis Two/Three

Second, it is expected that PBS will mediate the relationship between neuroticism and alcohol use in that individuals with higher levels of this trait will use fewer PBS while consuming more alcohol than their peers with lower levels of neuroticism.

Thirdly, it is predicted that PBS will mediate the relationship between conscientiousness/agreeableness and alcohol use in that those with high levels of conscientiousness/agreeableness will use more PBS while consuming alcohol than peers who are less conscientious/agreeable.

3.3.1 Bivariate Correlations

Bivariate correlations were calculated between each pair of quantitative variables with the values presented in Table 1. The relationship between neuroticism and alcohol use and between neuroticism and PBS was found to be non-significant. This was an unexpected finding.
and was contrary to previous research that has demonstrated a relationship between these two variables (Ruiz et al., 2003). However, all other correlations were found to be significant. The correlation between conscientiousness and alcohol use was -.251, while that between agreeableness and alcohol use was -.178. In addition, the correlation between alcohol use and PBS was significant across all three subscales; Limiting/Stopping Drinking ($r = -.371, p < 0.01$), Manner of Drinking ($r = -.247, p < 0.01$) and Serious Harm Reduction ($r = -.460, p < 0.01$), which is also consistent with prior findings that the use of PBS is associated with lower levels of alcohol use (Benton et al., 2003; Delva et al; 2004; Martens et al., 2004, 2005). Also significant were the correlations between agreeableness and all 3 PBS scales; Limiting/Stopping Drinking ($r = .265, p < 0.01$), Manner of Drinking ($r = .302, p < 0.01$) and Serious Harm Reduction ($r = .318, p < 0.01$) and between conscientiousness and the PBS subscale Manner of Drinking ($r = -.232, p < 0.01$). These results suggest that conscientiousness and agreeableness are associated with the increased use of PBS.

### 3.3.2 Partial Correlations

Partial correlations were carried out on the data to test for a mediating effect between personality, PBS and alcohol use. It was hoped that if the variables of personality and alcohol use correlated substantially with PBS, then the partial correlation between them may be much smaller than the original correlation.

Because there was no relationship between neuroticism and alcohol use, there was no effect to mediate, thus the second hypothesis was not supported. However, results show that the original value between conscientiousness and alcohol use of -.251 was reduced to -.180, ($r_{\text{partial}} = -.18, p < 0.01$), while the original value between agreeableness and alcohol use of -.178 was
reduced to -.02, \( r_{\text{partial}} = -.02, p < 0.01 \). This suggests that the original correlation was driven by PBS providing support for the third hypothesis.

### 3.3.3 Multiple Regressions

Multiple regressions were used to test whether protective behavioural strategies were a predictor of alcohol consumption. The results of the regression indicated that predictors explained 21\% of the variance \( R^2 = .21, F (3, 121) = 12.18, p < .001 \). Specifically, it was also found that the PBS subscale ‘Manner of Drinking’ significantly predicted alcohol use \( \beta = .362, p = .000, 95\% \text{ CI} = \text{Lower: -.477; Upper: -.147} \). This is in line with previous studies (Lewis, 2011) who found that manner of drinking PBS were consistently associated with reduced drinking and less alcohol related negative consequences at both between and within person levels suggesting that these PBS may be especially useful to focus on with students as they allow students to participate in drinking but in a less harmful way, i.e. avoiding ‘drinking games’, avoiding drinking shots of hard liquor etc.

### 3.4 Hypothesis Four

It is expected that there will be differences in self esteem levels and alcohol use.

### 3.4.1 Bivariate Correlations

Bivariate correlations were calculated between self esteem and alcohol consumption, and self esteem and PBS use. Results show that there was no significant relationship between self esteem across all three subscales of PBS. Results also indicate that there was no significant relationship between self esteem and alcohol consumption. Therefore, the fourth hypothesis of this study was not supported.
### 3.5 Table 1: Summary of Bivariate Correlations between PBS, Personality Variables and Alcohol Use

<table>
<thead>
<tr>
<th></th>
<th>Serious Harm Reduction</th>
<th>Manner of Drinking</th>
<th>Limiting/Stopping Drinking</th>
<th>Neuroticism</th>
<th>Agreeableness</th>
<th>Extraversion</th>
<th>Conscientiousness</th>
<th>Openness</th>
<th>Alcohol Use</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Serious Harm Reduction</strong></td>
<td>-</td>
<td>.387**</td>
<td>.488**</td>
<td>.076</td>
<td>.318**</td>
<td>.084</td>
<td>.089</td>
<td>-.006</td>
<td>-.247**</td>
</tr>
<tr>
<td><strong>Manner of Drinking</strong></td>
<td>.387**</td>
<td>-</td>
<td>.553**</td>
<td>.188</td>
<td>.302**</td>
<td>-.121</td>
<td>.232**</td>
<td>.180</td>
<td>-.460**</td>
</tr>
<tr>
<td><strong>Limiting/Stopping Drinking</strong></td>
<td>.488**</td>
<td>.553**</td>
<td>-</td>
<td>.203*</td>
<td>.265**</td>
<td>-.068</td>
<td>.070</td>
<td>.092</td>
<td>-.371**</td>
</tr>
<tr>
<td><strong>Neuroticism</strong></td>
<td>.076</td>
<td>.188*</td>
<td>.203*</td>
<td>-</td>
<td>-.239**</td>
<td>-.403**</td>
<td>-.300**</td>
<td>.057</td>
<td>-.061</td>
</tr>
<tr>
<td><strong>Agreeableness</strong></td>
<td>.318**</td>
<td>.302**</td>
<td>.265**</td>
<td>-.239**</td>
<td>-</td>
<td>.049</td>
<td>.287**</td>
<td>.091</td>
<td>-.178</td>
</tr>
<tr>
<td><strong>Extraversion</strong></td>
<td>.084</td>
<td>-.121</td>
<td>-.068</td>
<td>-.403**</td>
<td>.049</td>
<td>-</td>
<td>.038</td>
<td>-.011</td>
<td>.190</td>
</tr>
<tr>
<td><strong>Conscientiousness</strong></td>
<td>.089</td>
<td>.232**</td>
<td>.070</td>
<td>-.300**</td>
<td>.287**</td>
<td>.038</td>
<td>-</td>
<td>.148</td>
<td>-.251**</td>
</tr>
<tr>
<td><strong>Openness</strong></td>
<td>-.006</td>
<td>.180*</td>
<td>.092</td>
<td>.057</td>
<td>.091</td>
<td>-.011</td>
<td>.148</td>
<td>-</td>
<td>-.087</td>
</tr>
<tr>
<td><strong>Alcohol Use</strong></td>
<td>-.247**</td>
<td>-.460**</td>
<td>-.371**</td>
<td>-.061</td>
<td>-.178*</td>
<td>.190*</td>
<td>-.251**</td>
<td>-.087</td>
<td>-</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed)**

*Correlation is significant at the 0.05 level (2-tailed)*
4.0 Discussion

4.1 Interpretation of Findings

The purpose of the current study was to examine the relationships between PBS, personality characteristics, and alcohol use. Specifically, it was expected that PBS would mediate the relationship between neuroticism and alcohol use in that individuals with higher levels of neuroticism would use fewer PBS while drinking and would consume more alcohol than their peers with lower levels of this trait. It was also expected that PBS would mediate the relationship between conscientiousness, agreeableness and alcohol use in that those with high levels of conscientiousness and agreeableness would use more PBS and consume less alcohol than their non-conscientious/less agreeable peers. It was also hypothesised that alcohol consumption of male students would be significantly higher from female students and that use of PBS among male students would differ to their female counterparts, that is, there would be gender differences. Finally, it was hypothesised that there would be a relationship between self-esteem and alcohol use, that is, those lower in self esteem would consume more alcohol than those who have higher self esteem. Following an analysis of the data, it was found that two of the four hypotheses were supported. In addition, a positive association between alcohol use and PBS was also found. However, the relationship between neuroticism and alcohol use was found to be insignificant, which was unexpected as it is contrary to results found in previous studies (Frances, et al., 1986, as cited in Taylor, 2009, p. 175, Ruiz et al 2003, Hussong 2003).

4.1.1 Gender differences in Alcohol Consumption and PBS Use

Previous studies illustrate an emerging trend of females’ binge drinking at least as often as their male counterparts (McEnroe, 2010), while the college lifestyle and attitudinal national,
(CLAN), survey suggests that 61% of males and 44% of females report participating in binge drinking sessions at least weekly (Hope, Dring & Dring, 2005). In line with these findings, the present study shows that males consume more alcohol than females, while females use more PBS than males across all three subscales, limiting/stopping drinking, manner of drinking and serious harm reduction. It also found that males experience more negative alcohol related consequences compared to their female counterparts. Thus, the first hypothesis of the study was supported. Several factors may explain such gender differences. For females, it can be reasoned by their need for self protection against the threat of sexual assault. They are also more likely to socialise in groups, thereby strengthening the routine of protecting each other. For males, engaging in protective behaviours may be viewed by peers as being weak or as a lacking of masculinity, and so for this reason males may opt not to use PBS to control their drinking. These gender differences in the use and possible meaning and context of protective behaviours deserve further study to understand the perceptions surrounding PBS.

4.1.2 PBS as a mediator between Neuroticism and Alcohol Use

The relationship between neuroticism and alcohol use was found to be insignificant, which was unexpected as it is contrary to results found in previous studies (Frances, et al., 1986, as cited in Taylor, 2009, p. 175, Ruiz et al 2003, Hussong 2003), and as the relationship between neuroticism and alcohol use was not significant, there was no test of mediation carried out as there was no effect to mediate. Therefore, the second hypothesis in this research study was not supported. Previous studies suggest that neuroticism is associated with higher levels of depression and anxiety which in turn have been linked with alcohol abuse. Thus, for neurotic individuals, drinking is a means of coping with negative emotions (Hussong, 2003). However, an explanation for the lack of a relationship between neuroticism and alcohol use, and neuroticism
and PBS use, may be that individuals who are considered neurotic may have other means by which to cope with negative emotions. Endler and Parker (1990, as cited in Zeidner & Endler, 1996, p. 412) found that neuroticism is correlated with increased emotion focused coping in both men and women. McCrae and Costa (1986, as cited in Zeidner & Endler, 1996, p. 412) also provide evidence for a link between neuroticism and emotion orientated coping. For example, instead of consuming alcohol, individuals high in neuroticism may talk to friends, or use exercise in order to overcome negative emotions.

4.1.3 PBS as a mediator between Conscientiousness and Alcohol Use

Although there was a significant relationship between conscientiousness and alcohol use, PBS only partially mediated this effect. Conversely, even though the mediation effect of PBS on the relationship between conscientiousness and alcohol use was not as strong as it was between agreeableness and alcohol use, it was observed all the same and the third hypothesis of the study was supported. There are several reasons why this mediation effect was weaker. One possible explanation could be that individuals with high levels of conscientiousness are considered to be dependable, careful, responsible and organised. They take fewer risks and are more cautious than those less conscientious. This would suggest that they may not need to use PBS in order to control their drinking as they are less likely to be involved in heavy drinking compared to their peers. As discussed previously, a study by Caspi et al. (1997) found that high levels of conscientiousness are associated with lower rates of alcohol use.

4.1.4 PBS as a mediator between Agreeableness and Alcohol Use

The results of this study suggest that PBS mediates the relationship between agreeableness and alcohol use, as the relationship between these two variables became
insignificant once the third variable, PBS, was added. This is in line with previous studies such as Flory et al. (2002) who found that symptoms of alcohol abuse were associated with low scores on agreeableness; therefore higher scores on agreeableness would be associated with lower amounts of alcohol use. Consequently, the third hypothesis was supported.

4.1.5 Self Esteem and Alcohol Use

The relationship between self esteem and alcohol consumption, and self esteem and PBS use was found to be insignificant, thus the fourth and final hypothesis of the study was not supported. Previous studies have shown a link between low levels of self esteem and alcohol use. Andrews and Duncan, (1997, as cited in Taylor, 2009, p. 121) found that adolescents who abuse substances (such as drugs and alcohol) typically have low self esteem. However, contradictory studies have also shown that those who use alcohol report higher self esteem, and that that higher self-esteem results in greater alcohol use. Vaillant and Scanlan (1996) suggest that students under the influence of alcohol have the belief that alcohol will increase their feeling of well being, while Steele and Josephs, (1990, as cited in Taylor, 2009, p. 123) found that alcohol does reliably improve self esteem. Therefore, while this in study found no significant relationship it is not unusual to find conflicting views in regards to self esteem and alcohol consumption. Further research into the area is warranted.

4.1.6 Negative alcohol-related consequences and PBS Use

The most common negative alcohol related consequences experienced by both males and females included; not being able to do homework or study, missing out on other things because too much money was spent on alcohol, neglecting responsibilities, noticing a change in personality, missing a day (or part of a day) of school or work, suddenly finding themselves in a
place they could not remember getting to. The most common protective strategies used by both males and females included: using a designated driver, avoiding drinking games, knowing where their drink has been at all times, avoiding ‘out-drinking’ others and making sure to go home with a friend.

Results of this study show a positive relationship between negative alcohol related consequences and PBS use, that is, as more PBS were employed, fewer negative consequences were experienced. Results also indicate that the more protective strategies used, the lower the amount of alcohol consumed. These findings have important implications for prevention, specifically, that interventions should focus on enhancing the behaviours students are most likely to favour.

4.2 Implications of Research

The results of this study have several important implications for those working with college students. Previous studies have shown a direct link between neuroticism and alcohol use (Ruiz et al 2003), conscientiousness and alcohol use (Caspi et al, 1997), and agreeableness and alcohol use (Martin and Sher, 1994), and the relationship between PBS and alcohol use has also been established in several studies (Delva et al, 2004). However, little is known about how or why the relationship between personality and alcohol use exists, and it is also not known what predicts an individual’s use of PBS in the first place.

In attempt to reduce the amount of alcohol consumed by college students, as well as the negative alcohol-related consequences students experience as a result of heavy drinking, educational interventions which focus on specific teaching of PBS should be availed of. The results of this study highlighted the fact that those who are high in conscientiousness and
agreeableness are more likely to use higher amounts of PBS while consuming alcohol, while their peers who are higher in neuroticism are less likely to use PBS. As a result, these educational interventions should be tailored to meet the specific needs of the individual. For example, it has been established that those high in conscientiousness are dependable, careful, and responsible, and are therefore more likely to be already using at least some protective strategies when consuming alcohol. Thus, instead of teaching these individuals about PBS it may be of more use to reinforce their behaviours and remind them of ways to drink more responsibly. On the other hand those who score high in neuroticism are more likely to be prone to heavy drinking and so the benefits of PBS and how to use them correctly may need to be stressed to the latter individuals. Interventions that target the protective behaviours that students are more likely to use may be more consistent with existing norms and thus more effective for students.

4.3 Limitations of the Study

As this research study was carried out as part of the partial requirements of an undergraduate degree, there were limitations to the study. The data in this study was collected using a convenience sample of college students in one college, Dublin Business School, and therefore may be biased. It was also a moderate sized sample and so may not give a true representation of alcohol use among college students. Also, the questionnaires used for collecting data all required the participants to self report on their behaviour. Although studies have generally shown that self-report data regarding alcohol use are reliable and valid, some individuals may exaggerate their answers while others may not answer the questions truthfully. As participants are informed of their confidentiality and given complete anonymity, this situation is hoped to be doubtful.
4.4 Future Research

It might be helpful to explore students’ motivations for using PBS. In some cases, students may consider the use of PBS as a justification for extreme drinking, for example, “I have a designated driver so I can get as drunk as I want and not worry about it”. Future research could also examine these relationships among samples of both college and non-college adults. In addition, students who experience more alcohol-related problems may be less likely to engage in protective behaviours. Longitudinal research is needed to understand the direction of this association and any causal pathway. Furthermore, while this study indicated an association between personality characteristics, PBS and alcohol use, research among an Irish population is limited and so it would be beneficial to replicate the study in order to clarify findings.

4.5 Conclusion

Currently in Ireland several universities and institutes of technology have implemented college alcohol policies in their campuses. Many of these establishments understand that while most students are of an age to buy and consume alcohol, there are several risks associated with heavy alcohol consumption, and the aim of these policies is to ensure that a healthy college environment is maintained while reducing alcohol consumption levels. In St Patrick’s College (St Patrick’s Alcohol Policy, 2004) notices advertising events that have an undue emphasis on the availability of alcohol, or access to free or cheap alcohol are not in keeping with the health-promoting principles underpinning the College Alcohol Policy and are so discouraged, in Trinity College Dublin (TCD) (Trinity College Dublin Alcohol Policy, 2002) advice on alcohol is routinely included in orientation talks to first-year students during Fresher’s Week, and the Students’ Union is encouraged to repeat such advice as part of its welfare activities during the course of the year while in National University of Ireland Galway (NUIG) (NUI Galway Alcohol
Policy, 2002) high-risk sale promotions, such as ‘drink until you drop’, pub crawls and drinking competitions are prohibited. Furthermore, the college and universities sports association of Ireland (CUSAI) (CUSAI Alcohol Policy, 2012) forbid the consumption of alcohol both during competition and in the vicinity of ongoing intercollegiate sporting competitions. As well as this, each institution also provides social support to those who are in need of it. Many of the student bodies (e.g. counselling services) play a key role in intervening with those who have a heavy drink problem and in providing support for them. Specific training is also offered in some college to tutors to be able to deal with alcohol related problems (such as poor academic achievements) and to provide students with brief interventions. Many colleges also encourage the referral of individuals with heavy drinking problems to appropriate support services and opportunities are sought which actively involve the student body in the development and delivery educational programmes on alcoholic issues.

Brief alcohol screening and intervention for college students (BASICS) is an educational course for students who want to explore their alcohol use and to learn moderation strategies to reduce negative consequences from drinking. The goals are aimed at reducing risky behaviours and negative consequences of drinking. It consists of two sessions which are one to one between student and a facilitator. During these sessions, the students alcohol consumption levels are looked at as well as related consequences, and students are taught how to keep a diary of their drinking habits. As well as this, students are given feedback based on their assessments. BASICS is aimed at the 18-24 age group as they are deemed to be more vulnerable to heavy drinking and to the associated negative consequences including academic problems, unprotected sex, money trouble and so on. The program was designed to help students make better alcohol use decisions and to promote reduced drinking. Studies have demonstrated that BASICS can help reduce
quantity and frequency of alcohol use, as well as negative consequences among college students. In a study of 449 undergraduates it was found that alcohol use decreased between baseline and 6 months. Participants also reported an increase in protective factors and in readiness to change alcohol-related behaviours, and a decrease in alcohol-related consequences, (Amaro, Reed, Rowe, Picci, Mantella & Prado, 2010). Furthermore, it is suggested that these differences were apparent two years after the intervention, suggesting that BASICS has a long term impact on college student drinking, (Dimeff, Baer, Kivlahan, & Marlatt, 2002). Protective behavioural strategies are an important component of this program and it is a course outline which could be implemented here in Irish colleges to great benefit.

In conclusion to this research study, two of the four hypotheses in this study were supported. The research carried out confirms that personality characteristics, especially conscientiousness and agreeableness, are associated with PBS and so the results of this study demonstrate socially and clinically valuable information which may be useful in combating the problem of heavy drinking among college students. Researchers should therefore continue to conduct studies in relation to protective strategies in order to gain a better understanding of PBS use among college students. It is also anticipated that through further research on PBS it may become helpful to include the concept of PBS into alcohol intervention programs with college students.
References

Alcohol Action Ireland (n.d.) *Overview of alcohol related harm-facts and statistics.*


Appendix 1

Demographics Questionnaire

The information below is used as a means of describing the sample as a whole and will not be used to identify you personally. Please circle the most appropriate answer to you.

Q1. How old are you? _______

Q2. What is your gender?
   Male
   Female

Q3. Have you used alcohol at any point during the last 6 months?
   Yes
   No

Q4. What is your year in college?
   1\textsuperscript{st} Year
   2\textsuperscript{nd} Year
   Final Year

Q5. What is your geographic location?
   Rural
   Urban
Appendix 2

The Daily Drinking Questionnaire

Please indicate the number of drinks that you typically consumed on each day of the week over the past 30 days, and how many total hours you spent consuming alcohol.

*A drink is considered a 12oz beer (i.e. most bottled or canned beer), a 5oz glass of wine (i.e. a regular sized glass of wine) or a 1.25 oz (one shot) drink of hard alcohol.

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
<th>Sunday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drinks:</td>
<td>Drinks:</td>
<td>Drinks:</td>
<td>Drinks:</td>
<td>Drinks:</td>
<td>Drinks:</td>
<td>Drinks:</td>
</tr>
<tr>
<td>Hours:</td>
<td>Hours:</td>
<td>Hours:</td>
<td>Hours:</td>
<td>Hours:</td>
<td>Hours:</td>
<td>Hours:</td>
</tr>
</tbody>
</table>

Q1. In the past 30 days, what is the most number of drinks you have had on any one occasion?

________________________

Q2. On that occasion, over how many hours did you consume alcohol?

________________________

Q3. In the past two weeks, how many times have you had 5 or more drinks in one sitting (if you are male), or 4 or more drinks in one sitting (if you are female)?

________________________

Q4. At what age did you have your first drink of alcohol?

________________________
Appendix 3

Rutgers Alcohol Problem Index

Different things happen to people when they are drinking alcohol, or as a result of their alcohol use. Some of these things are listed below. Please indicate how many times each has happened to you during the last 6 months while you were drinking alcohol, or as the result of your alcohol use. When marking your answers, use the following code:

- 0= never
- 1= 1-2 times
- 2= 3-5 times
- 3= 6-10 times
- 4= more than 10 times

How many times did the following things happen to you while you were drinking alcohol, or because of your alcohol use, during the last 6 months?

0 1 2 3 4 Not able to do your homework (or study)
0 1 2 3 4 Got into fights, acted bad, or did mean things
0 1 2 3 4 Missed out in other things because you spent too much money on alcohol
0 1 2 3 4 Went to work or school high or drunk
0 1 2 3 4 Caused shame or embarrassment to someone
0 1 2 3 4 Neglected you responsibilities
0 1 2 3 4 Relatives avoided you
0 1 2 3 4 Felt that you needed more alcohol than you used to use in order to get the same effect
0 1 2 3 4 Tried to control you drinking by trying to drink at only certain times of the day, or certain places
0 1 2 3 4 Had withdrawal symptoms, that is, felt sick because you stopped or cut down drinking
0 1 2 3 4 Noted a change in your personality
0 1 2 3 4 Felt that you had a problem with alcohol
| 0 1 2 3 4 | Missed a day (or part of a day) of school or work |
| 0 1 2 3 4 | Tried to cut down on drinking |
| 0 1 2 3 4 | Suddenly found yourself in a place that you could not remember getting to |
| 0 1 2 3 4 | Passed out or fainted suddenly |
| 0 1 2 3 4 | Had a fight, argument, or bad feelings with a friend |
| 0 1 2 3 4 | Had a fight, argument, or bad feelings with a family member |
| 0 1 2 3 4 | Kept drinking when you promised yourself not to |
| 0 1 2 3 4 | Felt you were going crazy |
| 0 1 2 3 4 | Had a bad time |
| 0 1 2 3 4 | Felt physically or physiologically dependent on alcohol |
| 0 1 2 3 4 | Was told by a friend or neighbour to stop or cut down on drinking |
Appendix 4

Protective Behaviours Strategies Scale

Please indicate the degree to which you engage in the following behaviours when using alcohol or "partying".

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Use a designated driver</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Determine not to exceed a set number of drinks</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3.</td>
<td>Alternate alcoholic and non-alcoholic drinks</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4.</td>
<td>Have a friend let you know when you have had enough to drink</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>Avoid drinking games</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6.</td>
<td>Leave the bar/party at a pre-determined time</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7.</td>
<td>Make sure that you go home with a friend</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8.</td>
<td>Know where your drink has been at all times</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9.</td>
<td>Drink shots of liquor</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10.</td>
<td>Stop drinking at a pre-determined time</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11.</td>
<td>Drink water while drinking alcohol</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12.</td>
<td>Put extra ice in your drink</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13.</td>
<td>Avoid mixing different types of alcohol</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14.</td>
<td>Drink slowly, rather than gulp or chug</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15.</td>
<td>Avoid trying to “keep up” or “out-drink” others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Appendix 5

General Health Questionnaire

We want to know how your health has been in general over the last few weeks. Please read the questions below and each of the four possible answers. Circle the response that best applies to you. Have you recently:

1. Been able to concentrate on what you’re doing?
   0. better than usual
   1. same as usual
   2. less than usual
   3. much less than usual

2. Lost much sleep over worry?
   0. not at all
   1. no more than usual
   2. rather more than usual
   3. much more than usual

3. Felt that you are playing a useful part in things?
   0. more so than usual
   1. same as usual
   2. less so than usual
   3. much less than usual

4. Felt capable of making decisions about things?
   0. more so than usual
   1. same as usual
   2. less so than usual
   3. much less than usual

5. Felt constantly under strain?
   0. not at all
   1. no more than usual
2. rather more than usual
3. much more than usual

6. Felt you couldn’t overcome your difficulties?
   0. not at all
   1. no more than usual
   2. rather more than usual
   3. much more than usual

7. Been able to enjoy your normal day to day activities?
   0. more so than usual
   1. same as usual
   2. less so than usual
   3. much less than usual

8. Been able to face up to your problems?
   0. more so than usual
   1. same as usual
   2. less so than usual
   3. much less than usual

9. Been feeling unhappy or depressed?
   0. not at all
   1. no more than usual
   2. rather more than usual
   3. much more than usual

10. Been losing confidence in yourself?
    0. not at all
    1. no more than usual
    2. rather more than usual
    3. much more than usual
11. Been thinking of yourself as a worthless person?
   0. not at all
   1. no more than usual
   2. rather more than usual
   3. much more than usual

12. Been feeling reasonably happy, all things considered?
   0. not at all
   1. no more than usual
   2. rather more than usual
   3. much more than usual
Appendix 6

Rosenberg Self Esteem Questionnaire

Below is a list of statements dealing with your general feelings about yourself.

If you strongly agree, circle SA.

If you agree with the statement, circle A.

If you disagree, circle D.

If you strongly disagree, circle SD.

1. On the whole, I am satisfied with myself.                      SA  A  D  SD
2. At times, I think I am no good at all.                          SA  A  D  SD
3. I feel that I have a number of good qualities.                 SA  A  D  SD
4. I am able to do things as well as most other people.            SA  A  D  SD
5. I feel I do not have much to be proud of.                      SA  A  D  SD
6. I certainly feel useless at times.                              SA  A  D  SD
7. I fell that I’m a person of worth, at least on an equal plane with others. SA  A  D  SD
8. I wish I could have more respect for myself.                   SA  A  D  SD
9. All in all, I am inclined to feel that I am a failure.          SA  A  D  SD
10. I take a positive attitude towards myself.                     SA  A  D  SD
Appendix 7

Big Five Inventory

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*? Please write a number next to each statement to indicate the extent to which you agree or disagree with that statement.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Disagree Strongly</td>
<td>Disagree a little</td>
<td>Neither agree nor disagree</td>
<td>Agree a little</td>
<td>Agree Strongly</td>
</tr>
</tbody>
</table>

**I am someone who:**

1. _____ Is talkative
2. _____ Tends to find fault with others
3. _____ Does a thorough job
4. _____ Is depressed, blue
5. _____ Is original, comes up with new ideas
6. _____ Is reserved
7. _____ Is helpful and unselfish with others
8. _____ Can be somewhat careless
9. _____ Is relaxed, handles stress well
10. _____ Is curious about many different things
11. _____ Is full of energy
12. _____ Starts quarrels with others
13. _____ Is a reliable worker
14. _____ Can be tense
15. _____ Is ingenious, a deep thinker
16. _____ Generates a lot of enthusiasm
17. _____ Has a forgiving nature
18. _____ Tends to be disorganized
19. _____ Worries a lot
20. _____ Tends to be lazy
21. _____ Is emotionally stable, not easily upset
22. _____ Is inventive
23. _____ Has an assertive personality
24. _____ Can be cold and aloof
25. _____ Perseveres until the task is finished
26. _____ Can be moody
27. _____ Values artistic, aesthetic experiences
28. _____ Is sometimes shy, inhibited
29. _____ Is considerate and kind to almost everyone
30. _____ Does things efficiently
31. _____ Remains calm in tense situations
32. _____ Prefers work that is routine
33. _____ Is outgoing, sociable
34. _____ Is sometimes rude to others
35. _____ Makes plans and follows through with them
36. _____ Gets nervous easily
37. _____ Likes to reflect, play with ideas
38. _____ Has few artistic interests
20. ______ Has an active imagination
21. ______ Tends to be quiet
22. ______ Is generally trusting
42. ______ Likes to cooperate with others
43. ______ Is easily distracted
44. ______ Is sophisticated in art, music, or literature