

CAMPUS DRINKING:
PSYCHOLOGICAL AND PERSONALITY FACTORS
AS CORRELATES OF
UNIVERSITY STUDENTS' DRINKING

by

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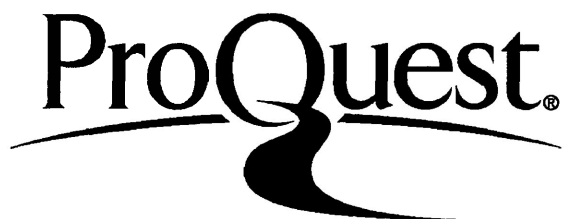
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ABSTRACT

The present study addressed the frequency and quantity of alcohol consumption among 100 freshmen and 100 senior students representing various faculties at Lakehead University. Results suggested female students' alcohol consumption was more frequent, but not greater in quantity, than male students'. Freshmen were heavier consumers of alcohol than seniors. Reasons for drinking, and the kind of alcohol preferred differed between the sexes. More freshmen than seniors reported they missed class and their grades were affected as a result of their drinking, and that they were nearly always to always drunk when they drank. Anxiety was found to be associated with the frequency, but not the quantity, of alcohol consumption among male and female students. Finally, depression was not found to be associated with students' alcohol consumption patterns.

The issue of increasing alcohol consumption among adolescents and university students has been a subject of extensive research for some time especially in the sixties and seventies. In the nineties, recent media coverage has brought trends in college drinking to the fore once more. For example, a survey conducted by the Addiction Research Foundation in 1988 was reported by the local Chronicle-Journal (June 10, 1990) which looked at the rising number of drinks consumed by university students in Ontario. It reported the average number of drinks consumed weekly by students was 12 as compared to 6 by those in the general population. Furthermore, the article stated that 20% of Ontario students consumed 5 or more drinks per sitting in 1989 compared to 9.5% for Ontario adults in the general population (ages 18 to 29).

Various consequences were documented regarding students' alcohol consumption. Cunningham examined the impact of student drinking on university campuses in a W5 National News Program which aired on May 27, 1990. He

reported that within the student population, 40% suffered from hangovers, 15% missed class, and three out of every ten students had experienced problems because of their drinking. Engs (1977) had earlier observed that hangover and missing class due to drinking were common occurrences among students. Wechsler and McFadden (1979) found college students were drinking frequently and heavier than the previous generation and they were intoxicated more often as well.

Findings such as these have shown increases in the amount of alcohol consumed by university students. A study which compared drinking trends among college students in 1969 and 1973 found an 8% increase in alcohol use (Koppling, Greenfield & Wong, 1979, cited in Hamilton, 1985). Further, Hamilton (1985) cited the National Institute on Alcohol Abuse and Alcoholism (1974) which estimated that 1 out of 20 college students had a drinking problem.

Estimates of the prevalence of drinking by

university students indicated that between 80% and 95% of students used alcohol regularly (Barnes & Welte, 1983; Koch-Hattem & Denman, 1987; Wechsler & McFadden, 1979; Wechsler & Rohman, 1981). Among this group, heavy drinking (consuming more than 5 drinks at any one sitting) was reported by 16%-25% of students (Barnes & Welte, 1983; Engs & Hanson, 1985; Wechsler & McFadden, 1979). Beer appeared to be the preferred choice for males (Engs, 1977; Saltz & Elandt, 1986), and wine for females (Harford et al., 1983).

As many as half of all college students on some campuses get drunk at least 12 times per year, and perhaps, 1 out of every 15 as often as once a week (Finn, 1979). Also, it has been found that between 38% and 77% of students drink at least once a week while an estimated 4% or 5% engage in daily drinking (Barnes & Welte, 1983; Wechsler & McFadden, 1979). The proportion of college students who drink at least once a year, however, ranged between 79% and 96% (Kraft, 1988). One can see much research has focused on the nature and scope of

university students' alcohol problems. These studies concluded that the size of the problem on campus is huge (Bloch & Ungerleider, 1988).

Finally, it has long been established that drinking is a part of university life. In fact, drinking by college students is a frequent event (Kraft, 1988). For instance, most social events (dances, frosh/senior week, wine and cheese socials, sporting events, etc.) are organized around alcohol consumption. Major breweries such as Anheuser-Busch in the States, Labatt or Molson in Canada sponsor social events. Jeff Healey's concert held at Lakehead University on September 13, 1991 was one such example.

Researchers have investigated various factors (age, gender, parental drinking habits, psychological, social, religious, socioeconomic, education level, cultural, and geographical in nature) that may influence and help to explain alcohol consumption by university students. The present study will focus on the psychological variables

of anxiety and depression, the personality variable of introversion/extroversion, and the demographic variables of sex and education level.

PSYCHOLOGICAL VARIABLES

Anxiety

According to Craighead, Kazdin and Mahoney (1981), anxiety refers to "a complex and variable pattern of behavior which occurs in response to internally (cognitively) or externally (environmentally) produced stimuli" (p. 206). An anxiety state can influence one's drinking behaviors. Indeed, Smart (1968) obtained evidence to support the positive relationship between student anxiety and drinking frequency. The belief that alcohol consumption may help to relieve one's anxiety or tension may account for the widespread occurrence of moderate social drinking (Williams, 1966). Beck (1983) concluded that drinking tends to be used by students to

cope with stress and anxiety (Schwartz, Burkhart & Green, 1978) and as a means of being sociable. Therefore, most students drink to relieve anxiety (Deardorff et al., 1975), to get high and to feel good (Fago & Sedlacek, 1975, Horowitz & Sedlacek, 1973, cited in Hamilton, 1985; Hughes & Dodder, 1984).

Stress-inducing or anxiety-provoking situations such as social gatherings and educational demands such as giving a speech or presentation, examinations, etc. can elicit anxiety. University students are particularly affected by educational demands. Mascalò (1979), Saltz and Elandt (1986) reported that college students attribute their drinking to the relief of anxiety caused by college stress. Additionally, Forsyth and Hundleby (1987) found students who drink to reduce anxiety in social situations report an improvement in their social performance. Finally, students report that drinking improves social, mental and emotional functioning (Rohsenow, 1982a).

Depression

Depression is defined as a "mood disorder characterized by pervasive dysphoria. Depending on the severity of this negative mood, dysfunctional thoughts and overt behavior as well as physiological complaints may be present" (Craighead, Kazdin & Mahoney, 1981, p. 223-224). Beck (1967) in his book, Depression: Causes and Treatments identifies the chief complaints of depression as an unpleasant emotional state resulting in changed attitudes toward life characterized by somatic symptoms of a specifically depressive nature. Depressed individuals tend to withdraw from social interaction and pleasant activities and are often visibly distraught.

According to the reinforcement theory, alcohol serves to minimize the experience of negative emotional states such as depression and the reduction of these feelings reinforces the drinking response (Cockerham, Kunz & Lueschen, 1989; Conger, 1956; Kepner, 1964; Kingham, 1958). As a result, the probability of

subsequent drinking will increase (Cappell & Herman, 1972; Deardorff et al., 1975).

Research on the relationship between alcohol consumption and depression produced conflicting findings. Within the college population, there was a modest but consistent relationship between depression and the misuse of alcohol (Brown & Munson, 1987). Indeed, a number of studies concluded that students who drank did so to prevent and alleviate negative emotions such as depression (Berkowitz & Perkins, 1986; Noel & Lisman, 1980; Schoenfield, 1967). However, Ratliff and Burkhart (1984) found that many college students drank to amplify positive affect rather than to compensate for negative affective states. Finally, depression has been found to be most consistently associated with a higher incidence of alcohol abuse and alcohol related problems among university students (Brown & Munson, 1987; Orford, Waller & Peto, 1974; Ratliff & Burkhart, 1984).

Leonard (1974) reported there were two primary and

serious weaknesses in studies which looked at the association between alcohol consumption and depression. The first involved confusion in the measurement of depression (overt versus covert depressive behaviors). The second involved how the measure of depression could be linked to increased alcohol use among young people when the manifestations of depression tend to shift according to the increase in alienation, isolation and alcohol use. A third weakness noted by Noel and Lisman (1980) found that many researchers equate suicide (attempted and/or completed) with depression and alcohol use. Suicide was found to be a weaker index of depression than was commonly assumed (Leonard, 1974).

PERSONALITY VARIABLES

Extroversion/Introversion

Extroversion or introversion is measured or assessed in terms of "the quantity and intensity of interpersonal

interaction, activity level, need for stimulation and capacity for joy" (Costa & McRae, 1985, p 2). Extroverts are typically said to be sociable, active, talkative, person-oriented, fun-loving, optimistic, and affectionate (Costa & McRae, 1985), approachable and to have a need for affirmation from others (Kroeger & Thuesen, 1988). In contrast, one would expect introverts to possess characteristics opposite to those of extroverts. However, Costa and McRae (1985) stated that introverts should be seen as reserved rather than unfriendly, independent rather than submissive, and even-paced rather than sluggish. Furthermore, the introverts tend to shy away from asserting themselves in social situations such as when they have to express opinions (Massey, 1981).

Orford, Waller and Peto (1974) contended that the extroverted person would spend more time and money in the pursuit of social goals, and in so doing, would have more opportunity for drinking. Therefore, it may be assumed that the extroverted individual anticipates more physical and social pleasure and more relaxation-tension reduction

from increased alcohol consumption than their introverted peers (Brown & Munson, 1987). One might expect the extrovert to drink more than the introvert.

Sociability has been cited as the primary motivation for drinking among college students (Geshwind, 1980; Kaplan, 1979; Looney, 1976; Saltz & Elandt, 1986; Shore et al., 1983). Hence, drinking takes place primarily in groups (Thompson, 1989) and with friends (Beck & Summons, 1985). This motivation has been shown to be of far greater influence than most other factors when looking at why university students drink (Berkowitz & Perkins, 1986). Two reasons may account for such an effect. First, students are typically away from their families for the first time. Second, students are experiencing a significant life transition (Berkowitz & Perkins, 1986).

GENDER DIFFERENCES

Gender has been found to correlate relatively

consistently with alcohol consumption among university students (Beck, 1983; Engs, 1977; Fondacaro & Heller, 1983; Gliksman, 1988; Harford, Wechsler & Rohman, 1983; Wechsler & Rohman, 1981). Eighty percent of university students who are drinkers tend to be male with 78% of these being frequently and heavily intoxicated (Engs, 1977; Wechsler & Rohman, 1981). However, the rate of alcohol consumption among college women has been increasing (Schnur & MacDonald, 1988). Nearly three times as many college women in 1982 as in 1974 rate themselves as heavy drinkers (Engs & Hanson, 1985). Furthermore, the prevalence of heavy drinking among college women is between 11 and 21% (Schnur & MacDonald, 1988).

Gender differences in drinking styles have also been documented. College men tend to consume more alcohol (Gliksman, 1988; Knupfer & Room, 1964). Males are also more likely to be defined as alcohol abusers (Beck, 1983), and to experience more alcohol-related problems (Gliksman, 1988). Berkowitz and Perkins (1986) found that men tend to drink greater quantities but not necessarily

more often. However, Glikzman (1988) argued that men did drink more often.

Koch-Hattem and Denman (1987) found that gender conflict, defined as "conflict about one's sex role orientation" (p. 182), was influential in the amount of alcohol consumed by the university student. Femininity conflict was defined as a "conflict resulting from a woman who viewed herself less feminine than her ideal" (p. 182), and was positively related to alcohol abuse by females. Affiliation conflict defined as "conflict resulting from a man who viewed himself as less dominant and affectionate than his ideal" (p. 182), and was positively related to alcohol abuse by males (Koch-Hattem & Denman, 1987). Alternately, a woman who was comfortable with her femininity or a man who was comfortable with his affiliative traits tend not to abuse alcohol. Chomak and Collins (1987) supported this result with their finding that heavy drinking was positively associated with masculine role behaviors. That is to say, feminine females and males were lighter drinkers than masculine

females and males. Only masculine males proved to be heavier drinkers when masculine males and females were compared (Chomak & Collins, 1987). That is to say, heavy drinking females do not "fit" the stereotypic view (traditional females do not consume alcohol in large quantities) of the traditional female group (Johnson, 1989).

Additionally, Budd and Spencer (1984) found significant differences in male and female intentions to drink. That is, men tend to drink according to normative social pressure. Such pressure evolved from the expectation from their peers for males to drink alcohol in large quantities and preclude any attitudes the individual male may have towards alcohol consumption. Women, on the other hand, seem to base their intentions to drink almost entirely on their attitudes toward drinking and their current affective state. Females tend to ignore the general social pressure they may experience regarding their consumption of alcohol.

Finally, sex and age were the two variables which accounted for the greatest proportion of the variance in drinking patterns and drinking problems among university students (Clark, 1977; Martin & Casswell, 1987). Males and females differed in their pattern of alcohol consumption with males in the 18-25 years age group consuming more alcohol more often than their female peers (Thorner, 1986). This age group coincided with the age group of university students used in the present study and various cited research on college students drinking patterns.

EDUCATION LEVEL

Beck (1983) stated that the year in college was also related to symptoms of drunkenness, with lower year students being more likely to have gotten drunk within the past 6 weeks. Various studies found that the number of times drunk decreased with academic advancement. For instance, drinking patterns change with progression

through academic levels such that higher academic advancement was related to lower levels of alcohol consumption (Harford, Wechsler & Rohman, 1983; Wechsler & McFadden, 1979). Finally, Gibbons et al. (1986) found that among seniors, those who put in longer hours of study (6 or more hours per week) were more likely to drink less (3 or less drinks per week) when compared to seniors who studied less hours per week.

The frequency and quantity of alcohol consumed is also related to placement in class. Students who placed in the top 33% of their class reported less frequent drinking in all contexts (Harford, Wechsler & Rohman, 1983). More than half (52%) of those with failing (below C) averages are found to be heavy drinkers (Bloch & Ungerleider, 1988), and they tend to experience more drinking problems (Gliksman, 1988).

Most studies report that males' and females' alcohol consumption decreased with progression through academic levels. However, some studies found females' use of

alcohol decreased while males' use increased with year in college (Saltz & Elandt, 1986). One explanation given is that older women (meaning seniors in their final undergraduate university level) typically become absorbed in planning and preparing for their future (i.e. choosing a major, establishing a relationship, and becoming career-goal directed), and only those who are ill-prepared for this would drink more seriously to cope with the anxiety inherent in such choices (Schnur & MacDonald, 1988). Why does male consumption increase with year in college? Perhaps, the increase is due solely to gender, that is, males typically consume alcohol in larger quantities. Therefore, progression through year in college is irrelevant for males.

CONCLUSION

Much research has been conducted concerning alcohol consumption among university students. The prevalence of student drinking, the college environment, education

level, gender, factors of anxiety, depression, and extroversion/introversion are common themes in much of the research. Results indicated that drinking on campus was on the rise, especially when alcohol was socially sanctioned, easily accessible, and a frequent activity. Many university students used alcohol as a means of alleviating anxiety inherent in college life. Findings regarding depression were mixed in that some authors maintained there was a relationship between depression and the increase in alcohol consumption among university students while others did not. Extroverts were shown to be more socially motivated, therefore, they were more likely to have more opportunity for drinking than their introverted counterparts. Hence, the probability of their using alcohol increased. Males and females were said to differ in their drinking styles. Males consumed more alcohol more frequently than females overall. Finally, academic advancement resulted in decreased alcohol consumption among university students especially for students who placed in the top 33% of their class, for senior students who studied longer, and for senior

females who were absorbed in preparing and planning for their future.

THE PRESENT STUDY

The present study was directed toward investigating the frequency and quantity of alcohol consumption by university students as a function of their gender, university year, anxiety, depression, and introversion or extroversion. Alcohol beverage preference and the consequence of students' drinking were explored as well. The hypotheses, enumerated below, were generated from the literature for this study:

- 1) the high anxious student will consume alcohol more heavily than the low anxious student,
- 2) the high anxious student will consume alcohol more frequently than the low anxious student,
- 3) the more depressed student will consume alcohol more heavily than the less depressed student,
- 4) the more depressed student will consume alcohol more

- frequently than the less depressed student,
- 5) the extroverted student will consume alcohol more frequently than the introverted student,
 - 6) the extroverted student will consume alcohol more heavily than the introverted student,
 - 7) males will consume alcohol more frequently than females,
 - 8) males will consume alcohol more heavily than females,
 - 9) freshmen students will consume alcohol more frequently than senior students,
 - 10) freshmen students will consume alcohol more heavily than senior students.

The operational definitions for this study are described below to facilitate interpretation and understanding of the result. These definitions include:

- High anxious student: the student scoring above the 55th percentile on the State Trait Anxiety Inventory (STAI) (Speilberger et al., 1983)
- Average anxious student: the student scoring between 46th and 54th percentile on the STAI

- Low anxious student: the student scoring below the 45th percentile on the STAI
- More depressed student: the student scoring 16 and above points (moderate - severe) on the Beck Depression Inventory (BDI) (Beck, 1978)
- Less depressed student: the student scoring 10 to 15 points (mild level) on the BDI
- Normal depressed student: the student scoring 0 to 9 points on the BDI
- Introverted student: the student who scored 12 or less on his/her Eysenck Personality Inventory (EPI) (Eysenck & Eysenck, 1968)
- Extroverted student: the student who scored 13 and above points on his/her EPI
- Freshmen: a person enrolled in the first year of a four year program in a university/college
- Senior: a person enrolled in the last year of a four year program at in a university/college

The following operational definitions, adapted from Finn (1979), were employed to catergorize a student on the

basis of his/her drinking pattern.

- Abstainer: a person who drinks at most once a year or not at all
- Light drinker: a person who drinks at least once a week, but not more than 1 to 3 drinks at any one time or occasion
- Moderate drinker: a person who drinks at least once a week more than 3, but not more than 6 drinks at any one time or occasion
- Heavy drinker: a person who drinks at least once a week, and more than 7 drinks at any one time or occasion.

METHOD

Subjects:

A total of 200 respondents participated in this study, comprising 50 male and 50 female students from each of the two categories, Freshmen (17 to 20 years old) and Seniors (23 to 26 years old). Direct classroom participation was requested of students after permission

by individual professors from various disciplines within the university was given. Such procedures would ensure that a wide variety of students were sampled. Potential subjects were drafted from classes of first and fourth year courses.

Measures:

1) Beck Depression Inventory (BDI, Beck, 1978, see Appendix A) This is a 21 item , self-report measure of the severity of depression. Scores may vary as a function of physical and emotional stress with the subject's sense of situational helplessness (MacMurray et al., 1987). As well, the scale's psychometric properties have been well documented (MacMurray et al., 1987). The BDI score ranges and associated degrees of depression are:

0 to 9	normal
10 to 15	mild depression
16 to 19	mild-moderate
20 to 29	moderate-severe depression
30 to 63	severe depression

2) Eysenck Personality Inventory (EPI, Eysenck & Eysenck, 1968, see Appendix B) From this 57 item questionnaire where individuals respond either by "YES" or "NO", scores can be derived for both extroversion and neuroticism (anxiety). These two variables are considered to be the two most important dimensions of personality (Eysenck & Eysenck, 1968; Orford, Waller and Peto, 1974).

3) State Trait Anxiety Inventory (STAI, see Appendix C) The latest revision (1979), Form Y, was updated by Spielberger, Gorsuch, Lushene, Yagg and Jacobs (1983). It is a paper and pencil test composed of 40 items, half of which tap into state anxiety while the other half measures trait anxiety. State anxiety refers to reactions or processes taking place at a given time and level of intensity, while Trait anxiety refers to individual differences in reactions (Spielberger et al., 1983). It can be administered in about 20 minutes. A study by Johnston and Hackman (1977) correlated the STAI with the Multiple Affect Anxiety Adjective Checklist (Zuckerman & Lubin, 1965) as well as with Lorr et al.'s (1967) anxiety

measures to assess for concurrent validity. They concluded that the STAI is a useful measure of anxiety as it correlates highly with both of these scales. For this reason, and because the STAI is easily administered, scored and interpreted, the STAI (State anxiety) was chosen as the anxiety measure in the present study.

4) An alcohol consumption questionnaire: This 27 item measure, see Appendix D, was developed for this study to measure the quantity (in terms of number of the drinks consumed per occasion), frequency (in terms of the number of drinking occasions per week), attitudes of students concerning their patterns of alcohol consumption, and consequences of their drinking. Its contents were based on Smart et al.'s (1975) questionnaire and also included items from Killorn's (1982) and Jones' (1989) studies of students' alcohol consumption.

Procedure:

Phase I:

Lakehead University Ethics Committee approved the present

research. The experimenter obtained permission from professors of first and fourth year courses to permit the recruitment of subjects for the study. The experimenter then arranged a convenient time to speak with the students.

Phase II:

Students were informed of the nature of the study and that participation was strictly on a voluntary and confidential basis. The package of measures was handed to those who volunteered to participate. Subjects were asked to answer all questions very accurately and honestly. The experimenter took care to ensure confidentiality of subjects' responses by assigning an alpha-numerical code to each test package and removing the personal information sheet from the package. After completion (approximately 35 minutes), the experimenter collected the package and thanked the respondents for their participation.

Phase III:

All Beck Depression Inventories were scrutinized especially for indications of suicidal ideation (item 9 - suicidal thoughts). This was done because the experimenter assumed responsibility for "risk of harm" to subjects who participated. Any respondent who scored other than zero on these two items was contacted by the experimenter for further evaluation as to the seriousness of such responses. Appropriate recommendations were given. These included contacting Dr. Melnyk of the Psychology Department who would further assess the need for therapy or refer the students to various resources in the city.

Phase IV:

Data was analyzed using the SPSS 4.1 system at Lakehead University. Statistics such as cross-tabulations of all variables and drinking patterns; chi-square analyses and analyses of variance (ANOVA) were conducted.

RESULTS

Frequency of alcohol consumption among students

The data for frequency of alcohol consumption are summarized by first presenting the frequency distribution, and then ANOVA analyses of the psychological variables (anxiety and depression) as they interact with gender and year of education. Introversion or extroversion was not pursued because 98% of the students were extroverts according to their Eysenck Personality Inventory (EPI).

Frequency distribution by gender and year of education

The present study showed the majority of students reported consuming alcohol. The frequency of their drinking ranged from less than once a week to four or more times a week. Table 1 summarizes the difference in frequency of alcohol consumption between males and females, freshmen and senior students. Chi-square

analyses indicated a significant difference for gender but not year.

Table 1

Frequency of alcohol consumption of students by gender and year of education.

Frequency	Gender		X ²	Year		X ²
	M	F		Fr	Sen	
does not apply	7	6		7	6	
Less than once a week	34	20		27	27	
once a week	22	14		24	12	
2 or 3 times a week	2	1		1	2	
4+ times a week	35	59	11.95*	41	53	5.94

Note. N = 200.

*p<.05

Coding for data: does not apply = 0, less than once a week = 1, once a week = 2, 2 or 3 times a week = 3, 4+ times a week = 4

Consumption frequency by gender, year and anxiety level

Table 2 shows the results of a 2x2x3 analysis of variance

using frequency of alcohol consumption as the dependent variable with gender, year in university and levels of anxiety (STAI scores) as the independent variables. The results indicated a significant main effect for sex $F(1, 188) = 9.93, p < .01$, such that female students consumed alcohol more frequently ($M = 2.87$) than male students ($M = 2.24$).

Table 2

Results of analysis of variance for the frequency of alcohol consumption by gender, year of education, and levels of anxiety.

Sources	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Sex (A)	1	20.101	9.932	.002**
Year (B)	1	2.915	1.441	.232
STAI (C)	2	.782	.387	.680
A x B	1	1.416	.700	.404
A x C	2	6.076	3.002	.052*
B x C	2	.728	.360	.698
A x B x C	2	2.445	1.208	.301
Error	188	2.024		

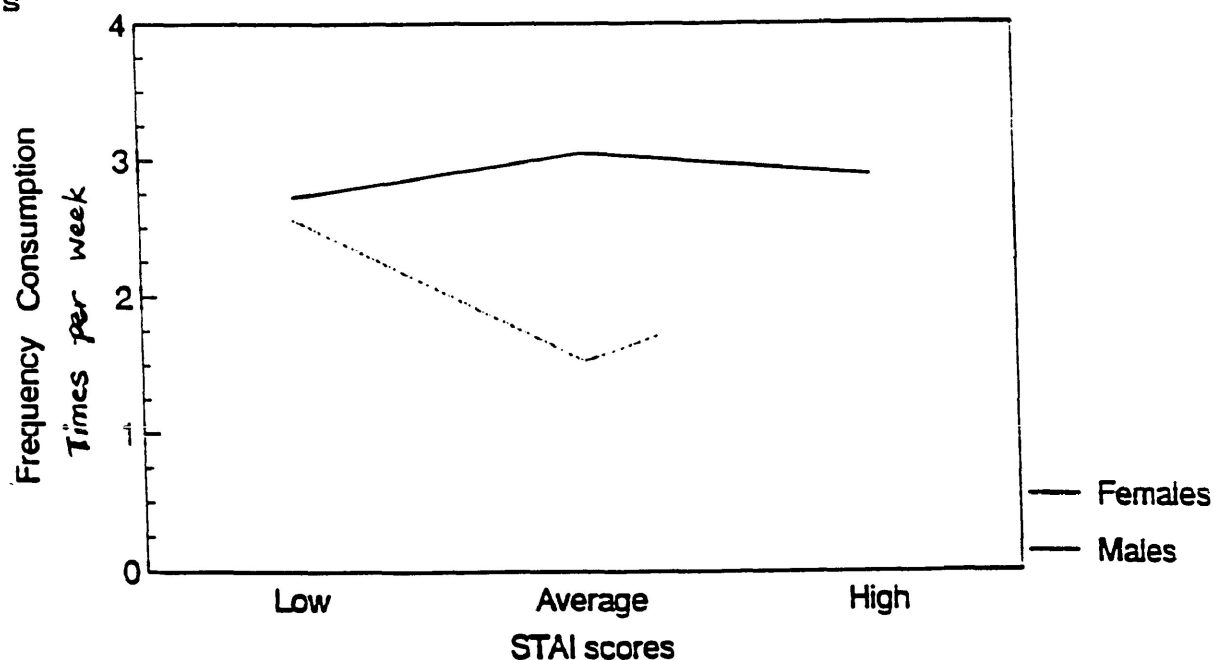
Note. $N = 200$.

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

The significant interaction for STAI and sex, $F(2, 188) = 6.076$, $p < .05$, was further investigated using a oneway analysis of variance with frequency of alcohol consumption as the dependent variable and gender and levels of anxiety as the independent variables. Student-Newman-Kuels analysis revealed that the significant interaction primarily arose because males who experienced an average level of anxiety drank less frequently than males and females who experienced other levels of anxiety as shown in Figure 1.

Figure 1.

Consumption frequency according to gender and anxiety levels



A supplementary Chi-square analysis revealed that 62% of seniors versus 34% of freshmen scored in the high anxious range $\chi^2(2, N = 200) = 18.66, p < .01$. Hence, senior students tend to be more anxious than freshmen students overall.

Consumption frequency by gender, year and depression level

The majority of both sexes scored within the normal level on the Beck Depression Inventory (i.e. non-depressed). Sixteen percent of males and 24% of females scored within the mildly depressed level, and 7% of both males and females scored in the moderate to severe level of depression. Table 3 shows the results of a 2x2x3 analysis of variance using frequency of alcohol consumption as the dependent variable with gender, year in university and severity of depression (Beck Depression Inventory (BDI) scores) as the independent variables. The significant main effect for sex was found (i.e. females consumed alcohol more frequently than males) but there

were no other significant effects.

Table 3

Results of analysis of variance for the frequency of alcohol consumption by gender, year of education and level of depression

Source	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Sex (A)	1	19.466	9.355	.003**
Year (B)	1	3.567	1.714	.192
BDI (C)	2	.140	.067	.935
A x B	1	.187	.090	.764
A x C	2	1.052	.506	.604
B x C	2	.997	.479	.620
A x B x C	2	2.235	1.074	.344
Error	188	2.081		

Note. N = 200.

**p<.01

Quantity and types of alcohol consumption among students

The types of alcoholic beverage preferred by males and

females, freshmen and seniors are graphically presented in Figure 2. Males typically prefer beer while females typically prefer hard liquor. The most notable difference between freshmen and seniors was hard liquor which was preferred more by freshmen. Wine is the least preferred alcoholic beverage among students in this study.

Figure 2

Choice of alcoholic beverage according to gender and year

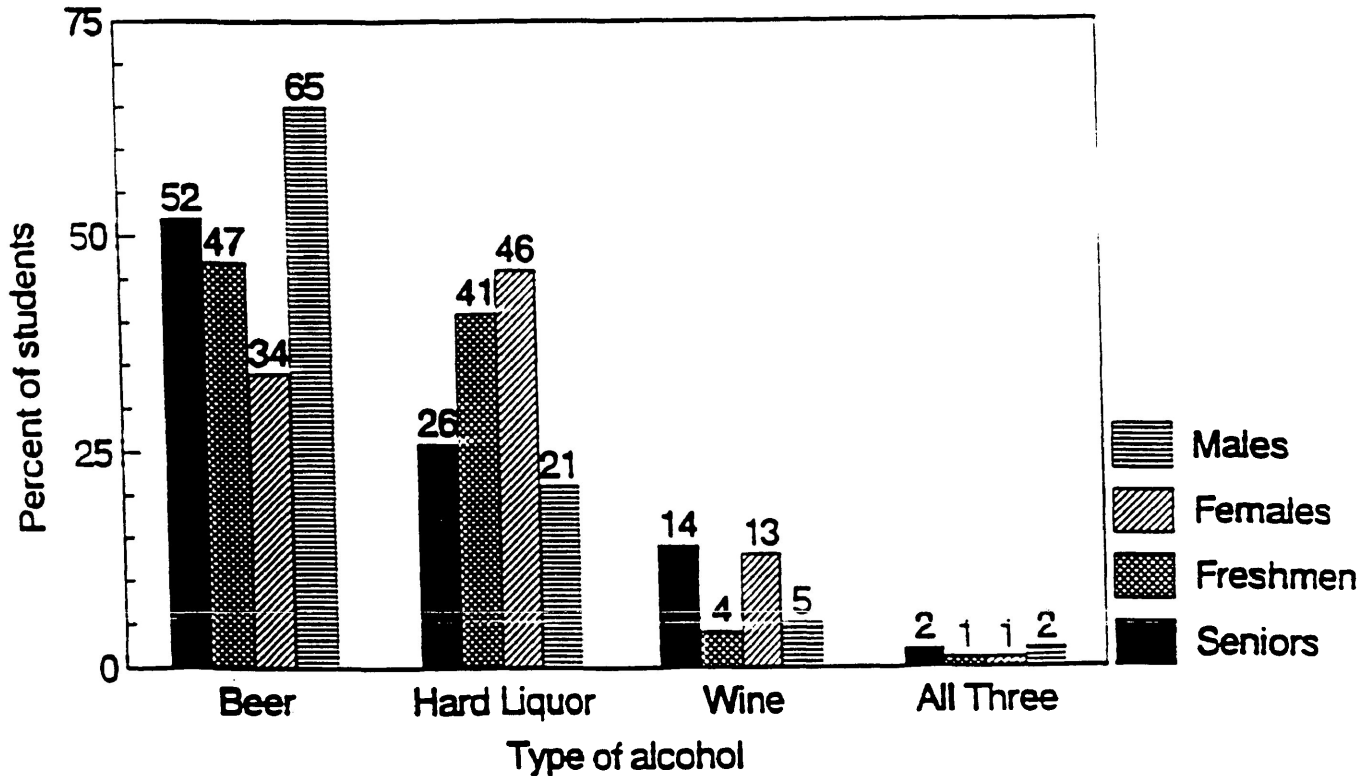


Table 4 summarizes the quantity and type of alcoholic beverage preferred by male and female, freshmen and senior students in the present study. The consumption rate among the majority of students ranged from 1 to 7 or more drinks per occasion. The results of Chi-square analyses for quantity by gender and year of education are also presented in Table 4 for each type of alcoholic beverage. Significant results point to the following:

- 1) more males than females consuming heavier amounts of beer (7 or more drinks)
- 2) more females than males not consuming beer
- 3) more seniors than freshmen consuming a modest amount (1 to 3 drinks) of beer
- 4) more freshmen than seniors consuming heavier amounts of hard liquor (4 to 7 or more drinks).

Table 4

Quantity and type of alcoholic beverage consumed by male and female, freshmen and senior students

Alcohol type	Quantity consumed per occasion	Gender			Year		
		M	F	X ²	Fr	Sen	X ²
Beer	Not applicable	15	42		32	25	
	1-3 drinks	35	32		22	45	
	4-6 drinks	24	22		28	18	
	7 or more drinks	26	4	29.14**	18	12	12.13**
Hard Liquor	Not applicable	33	32		26	39	
	1-3 drinks	31	35		28	38	
	4-6 drinks	22	23		30	16	
	7 or more drinks	13	10	.65	16	7	11.89**
Wine	Not applicable	58	51		60	49	
	1-3 drinks	38	38		32	44	
	4-6 drinks	3	10		6	7	
	7 or more drinks	1	1	4.22	2	0	5.08

Note. N = 200.

**p<.01

Consumption quantity by gender, year and anxiety levels

Table 5 shows the results of a 2x2x3 analysis of variance using quantity of alcohol consumed (data collected from question # 9 of the 27 Item Alcohol Consumption Questionnaire) as the dependent variable with gender, year in university and anxiety levels (STAI scores) as the independent variables. The results indicated a significant main effect for sex $F(1, 188) = 8.984, p < .01$ such that male students consumed alcohol in greater quantity ($M = 1.87$) than did female students ($M = 1.51$). As well, there was a significant main effect for year $F(1, 188) = 13.106, p < .01$ indicating freshmen drank alcohol in greater quantity ($M = 1.94$) than seniors ($M = 1.46$). No other significant effects were found.

Table 5

Results of analysis of variance for the quantity of alcohol consumption by gender, year of education and anxiety levels

Source	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Sex (A)	1	6.419	8.984	.003**
Year (B)	1	9.364	13.106	.000
STAI (C)	2	.631	.883	.415
A x B	1	1.746	2.443	.120
A x C	2	.273	.382	.683
B x C	2	.505	.707	.494
A x B x C	2	1.242	1.242	.179
Error	188	.714		

Note. N = 200

**p<.01

Consumption quantity by gender, year and depression level

Table 6 shows the results of a 2x2x3 analysis of variance using quantity of alcohol consumed as the dependent variable with gender, year in university and levels of depression (BDI scores) as the independent variables. The analysis indicated a significant main effect for sex $F(1, 188) = 8.90, p < .01$ such that male students consumed more alcohol ($M = 1.87$) than did female students ($M = 1.51$). As well, there was a significant main effect for year $F(1, 188) = 14.68, p < .01$ in that freshmen drank more ($M = 1.92$) than did senior students ($M = 1.46$). No other significant effects were found.

Table 6

Results of analysis of variance for the quantity of alcohol consumption by gender, year of education and depression level

Source	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Sex (A)	1	6.336	8.904	.003**
Year (B)	1	10.444	14.677	.000**
BDI (C)	2	.735	1.033	.358
A x B	1	2.106	2.959	.087
A x C	2	1.170	1.645	.196
B x C	2	.946	1.329	.267
A x B x C	2	.150	.210	.810
Error	188	.712		

Note. N = 200

**p<.01

Other findings

Table 7 summarizes the reasons given by students for their drinking. The most consistently discriminating reasons for gender and year in university were related to

"feeling at ease with the opposite sex", "bored or had nothing else to do", and "getting along better with others".

Table 7
Reasons cited by male and female, freshmen and senior students for their drinking

Reasons	Gender		X ²	Year		X ²
	M	F		Fr	Sen	
feel less self conscious	35	31	.36	37	29	1.45
feel at ease with opposite sex	27	10	9.58**	24	13	4.01*
anxious and uptight	13	11	.19	14	10	.76
friends' drink	34	22	3.57	27	29	.10
sociable to do so	63	56	1.02	63	56	1.01
makes me feel good	43	35	1.35	39	39	.00
bored/nothing else to do	24	8	9.52**	23	9	7.29**
good time	63	50	3.44	62	51	2.46
celebrate	74	71	.23	70	75	.63
relieve from worries and tensions	27	20	1.36	25	22	.25
lonely	4	0	4.08*	3	1	1.02
get along better with others	12	4	4.26*	13	3	6.67**
habit	16	8	3.03	12	12	.00
become popular	5	2	1.33	5	2	1.33
depressed	6	2	2.08	5	3	.52
sad	4	0	4.08*	2	2	.00

Note. N = 200

*p<.05

**p<.01

There were several other noteworthy results in students' responses to the drinking questionnaire. First, far more males (24%) appeared to lose consciousness than females (5%) $\chi^2(2, N = 200) = 15.05, p < .01$. Second, more freshmen (37%) tend to be nearly always to always drunk when they drank compared to 13% of seniors $\chi^2(3, N = 200) = 17.96, p < .01$. Third, far more freshmen (42% versus 13% of seniors) reported missing class $\chi^2(2, N = 200) = 22.18, p < .01$. Fourth, 44% of seniors versus 14% of freshmen achieved 80% and above or had a grade A average, while 35% of freshmen and 13% of seniors achieved 60 to 69 percent or had a grade C average $\chi^2(3, N = 200) = 26.67, p < .01$. Finally, the present study determined that 61% of freshmen versus 32% of seniors did their drinking on-campus, while only 12% of freshmen versus 36% of seniors drank off-campus. There was no significant difference between male and female students for on/off-campus drinking.

DISCUSSION

The results of the present study offered no support for hypotheses about the role of depression in drinking, nor for predicted differences in frequency of drinking for males versus females, freshmen versus seniors. Also, hypotheses about introversion/extroversion could not be tested because 98% of students were shown to be extroverts by their Eysenck Personality Inventory (EPI) scores. However, the results of this study did support the hypotheses about quantity of alcohol consumption for males versus females, freshmen versus senior students.

Contrary to other studies, the present study found females drank more frequently than males. This may be indicative of a change in drinking patterns among the sexes. For example, changing societal norms may have made it more acceptable for women to drink. Furthermore, the college environment may be conducive to frequent social drinking (Moos et al., 1976).

Research supports the present study's finding that males consume alcohol in greater quantity than females (Chomak & Collins, 1987; Engs, 1977; Gliksman, 1988; Knupfer & Room, 1964; Peterson, 1983; Rosenbluth et al., 1978; Saltz & Elandt, 1986). As a result, males tend to experience more alcohol-related problems such as losing consciousness more often than females, a consequence which was supported by the results of the present study.

Gender differences were also evident for the types of alcoholic beverage preferred. The present study determined that beer appeared to be preferred by males while hard liquor was preferred by females. Similar results were found by other researchers who investigated gender differences and alcoholic beverage preference among university students (Engs, 1977; Saltz & Elandt, 1986). Perhaps, this resulted from the media's promotion of beer as the "traditional" male drink, and hard liquor or wine as the female drink. Additionally, beer prices were less than hard liquor or wine per serving.

Therefore, males could consume more alcohol for less money.

Male and freshmen students drank to feel at ease with the opposite sex, to get along better with others, and because they were bored or had nothing else to do. It seemed that males and freshmen used alcohol to improve their social and emotional functioning. The most frequently noted reason females gave for their drinking was to celebrate (71%). It seemed females used alcohol to enhance their positive affective state.

Contrary to Rohsenow's conclusion (1982b), this study found that anxiety was associated with the frequency, but not the quantity, of alcohol consumption among male and female students. Perhaps, this may be due to the students' reliance on alcohol to cope with the ever increasing pressure of academia or to compete with their peers. The fact that the number of students exceeds the number of career positions available may account for the increased frequency of alcohol consumption among

students as well. The results of the present study did, however, support Rohsenow's (1982b) finding that depression was not associated with increased drinking, either the frequency or quantity, among university students.

Consistent with other research (Harford et al., 1983; Saltz & Elandt, 1986; Wechsler & McFadden, 1979), the present study found progression through academic levels resulted in a decrease in alcohol consumption among students. Seniors consumed less alcohol (1-3 drinks per occasion) and were considered to be light drinkers, while freshmen were considered to be moderate to heavy drinkers (4 to 7 or more drinks). Hence, it was not surprising to find more freshmen (37%) reported being nearly always to always drunk than seniors (13%) when they consumed alcohol. Four reasons may help to explain why freshmen are affected by their drinking: (1) freshmen typically drink alcohol in greater quantity than seniors, (2) more freshmen (42%) miss class as a result of their drinking than seniors (13%), (3) more freshmen (35%)

achieved grade C average than seniors (13%), and (4) more freshmen (56%) live on campus where alcohol is easily accessible (campus pub) and slightly cheaper (30 cents less per serving than that off campus).

It has also been speculated by previous researchers that freshmen consume more alcohol than senior students because it is their first time away from direct parental control, or an increase in alienation or loneliness. The present study found their drinking could be associated with the sociability, variable such as feeling at ease with the opposite sex and getting along better with others. Maturity and change in social status may have accounted for why senior students consumed less alcohol than freshmen. Seniors typically became more concerned with their grades in order to be more competitive in the job market, thus, they studied longer (Gibbons et al., 1986). Also, because they frequently gear themselves toward a career, drinking becomes a secondary activity for the senior students.

An overwhelming proportion of students were categorized as extroverted according to their Eysenck Personality Inventory (EPI). This could be a reflection of the proportion of extroverts in the university population. Thus, no comparisons could be made as to how personality (i.e. introversion/extroversion) would or would not affect the rate of students' alcohol consumption. Perhaps, if the EPI was used as a continuous rather than a categorical measure, a different result may emerge.

Several limitations to the current study could be remedied in subsequent research. For example, the failure to ensure that an equal number of both personality types were represented in the subject pool. One suggestion for future studies is to ensure there are ample numbers of both personality types in the subject pool. This could be achieved by preselecting subjects according to their personality types. A second matter concerns the use of the Beck Depression Inventory (BDI) which may not have been appropriate for this population. In a student group,

there would be fewer cases of students exhibiting severe depression, thereby limiting the ability to test hypotheses about depression and alcohol use (Forsyth & Hundleby, 1987). Perhaps, the Beck Depression Inventory is most useful in assessing clinical depression, therefore, it may not tap or flush out the transient mood that is more typical of college students. Possibly, a depression measure geared specifically to college students would be more useful.

In conclusion, drinking on campus continues to be prevalent among students. While it is not the aim of this study to offer a fool-proof method to solve such a pervasive problem (mentioned by the research cited), a few modest suggestions may be made. First, attitudes concerning alcohol consumption must be changed especially for the heavy consumption groups like males and freshmen as evidenced in the present study. Drinking needs to be understood in relation to the behavioral, motivational, and gender-related patterns as occurring within the unique social context of the college environment

(Berkowitz & Perkins, 1986). This may have to do with the manner of alcohol consumption rather than the overall consumption rate (Condon & Carmen, 1986). In order to target such groups, an alcohol education program proposed by Lenhart and Wodarski (1984) should be included as part of Frosh week. The program encompasses three areas: (1) increase students' knowledge about alcohol, (2) increase their ability to manage their alcohol intake (behavior control techniques), and (3) develop support systems which help maintain altered drinking behaviors (relaxation, assertiveness and problem-solving techniques) (p. 37). The last component may be especially helpful for those students who drink when they are experiencing anxiety or stress. A second suggestion concerns limiting the number of hours of operation and number of drinks within the establishment (pub). For example, serve alcohol only in the evening hours and utilize the legal limit of .08% blood alcohol level which would allow a student 2 drinks a night. In conjunction with this, a checks and balance system should be employed (token system, breathalyzer testing). A third suggestion

involves following the University of South Dakota's program where alcohol is forbidden on campus either in the pub or residence. A final suggestion is to replace beer served on campus with dealcoholized beer. Afterall, the tastes are similar and both major breweries manufacture these. Therefore, there would be no economic repercussions from such a change (sponsors for major university events would not be affected).

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Appendix A

Beck Depression Inventory



Date: _____

Name: _____ Marital Status: _____ Age: _____ Sex: _____

Occupation: _____ Education: _____

This questionnaire consists of 21 groups of statements. After reading each group of statements carefully, circle the number (0, 1, 2 or 3) next to the one statement in each group which **best** describes the way you have been feeling the **past week, including today**. If several statements within a group seem to apply equally well, circle each one. **Be sure to read all the statements in each group before making your choice.**

- 1 0 I do not feel sad.
- 1 1 I feel sad.
- 2 I am sad all the time and I can't snap out of it.
- 3 I am so sad or unhappy that I can't stand it.

- 2 0 I am not particularly discouraged about the future.
- 1 I feel discouraged about the future.
- 2 I feel I have nothing to look forward to.
- 3 I feel that the future is hopeless and that things cannot improve.

- 3 0 I do not feel like a failure.
- 1 I feel I have failed more than the average person.
- 2 As I look back on my life, all I can see is a lot of failures.
- 3 I feel I am a complete failure as a person.

- 4 0 I get as much satisfaction out of things as I used to.
- 1 I don't enjoy things the way I used to.
- 2 I don't get real satisfaction out of anything anymore.
- 3 I am dissatisfied or bored with everything.

- 5 0 I don't feel particularly guilty.
- 1 I feel guilty a good part of the time.
- 2 I feel quite guilty most of the time.
- 3 I feel guilty all of the time.

- 6 0 I don't feel I am being punished.
- 1 I feel I may be punished.
- 2 I expect to be punished.
- 3 I feel I am being punished.

- 7 0 I don't feel disappointed in myself.
- 1 I am disappointed in myself.
- 2 I am disgusted with myself.
- 3 I hate myself.

- 8 0 I don't feel I am any worse than anybody else.
- I am critical of myself for my weaknesses or mistakes.
- 2 I blame myself all the time for my faults.
- 3 I blame myself for everything bad that happens.

- 9 0 I don't have any thoughts of killing myself.
- 1 I have thoughts of killing myself, but I would not carry them out.
- 2 I would like to kill myself.
- 3 I would kill myself if I had the chance.

- 10 0 I don't cry any more than usual.
- 1 I cry more now than I used to.
- 2 I cry all the time now.
- 3 I used to be able to cry, but now I can't cry even though I want to.

- 11 0 I am no more irritated now than I ever am.
- 1 I get annoyed or irritated more easily than I used to.
- 2 I feel irritated all the time now.
- 3 I don't get irritated at all by the things that used to irritate me.

- 12 0 I have not lost interest in other people.
- 1 I am less interested in other people than I used to be.
- 2 I have lost most of my interest in other people.
- 3 I have lost all of my interest in other people.

- 13 0 I make decisions about as well as I ever could.
- I put off making decisions more than I used to.
- 1 I have greater difficulty in making decisions than before.
- 3 I can't make decisions at all anymore.

_____ Subtotal Page 1

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Appendix B

Eysenck Personality Inventory

EYSENCK PERSONALITY INVENTORY

FORM B

By **H. J. Eysenck**
and **Sybil B. G. Eysenck**

Name _____ Age _____ Sex _____

Grade or Occupation _____ Date _____

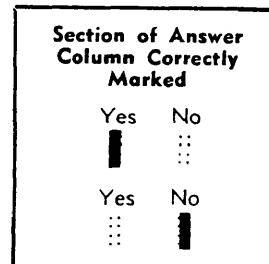
School or Firm _____ Marital Status _____

INSTRUCTIONS

Here are some questions regarding the way you behave, feel and act. After each question is a space for answering "Yes," or "No."

Try and decide whether "Yes," or "No" represents your usual way of acting or feeling. Then blacken in the space under the column headed "Yes" or "No."

Work quickly, and don't spend too much time over any question; we want your first reaction, not a long drawn-out thought process. The whole questionnaire shouldn't take more than a few minutes. Be sure not to omit any questions. Now turn the page over and go ahead. Work quickly, and remember to answer every question. There are no right or wrong answers, and this isn't a test of intelligence or ability, but simply a measure of the way you behave.



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Appendix C

State-Trait Anxiety Inventory

SELF-EVALUATION QUESTIONNAIRE

Developed by Charles D. Spielberger
 in collaboration with
 R. L. Gorsuch, R. Lushene, P. R. Vagg, and G. A. Jacobs

STAI Form Y-1

Name _____ Date _____ S _____

Age _____ Sex: M _____ F _____ T _____

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel *right* now, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

VERY MUCH SO
 MODERATELY SO
 SOMEWHAT
 NOT AT ALL

- | | | | | |
|--|---|---|---|---|
| 1. I feel calm . . . | ① | ② | ③ | ④ |
| 2. I feel secure | ① | ② | ③ | ④ |
| 3. I am tense | ① | ② | ③ | ④ |
| 4. I feel strained . | ① | ② | ③ | ④ |
| 5. I feel at ease . . | ① | ② | ③ | ④ |
| 6. I feel upset | ① | ② | ③ | ④ |
| 7. I am presently worrying over possible misfortunes . . | ① | ② | ③ | ④ |
| 8. I feel satisfied | ① | ② | ③ | ④ |
| 9. I feel frightened . | ① | ② | ③ | ④ |
| 10. I feel comfortable . | ① | ② | ③ | ④ |
| 11. I feel self-confident | ① | ② | ③ | ④ |
| 12. I feel nervous | ① | ② | ③ | ④ |
| 13. I am jittery | ① | ② | ③ | ④ |
| 14. I feel indecisive | ① | ② | ③ | ④ |
| 15. I am relaxed | ① | ② | ③ | ④ |
| 16. I feel content | ① | ② | ③ | ④ |
| 17. I am worried | ① | ② | ③ | ④ |
| 18. I feel confused | ① | ② | ③ | ④ |
| 19. I feel steady | ① | ② | ③ | ④ |
| 20. I feel pleasant | ① | ② | ③ | ④ |



Appendix D

27 Item Alcohol Consumption Questionnaire

QUESTIONNAIRE

This questionnaire is being administered for the purpose of obtaining knowledge as to the drinking patterns of university students here at Lakehead University. Therefore, it would be greatly appreciated if you would respond **accurately** and **honestly** to the following questions.

Circle ONLY ONE answer for each of the following questions.

ALL INFORMATION GIVEN IS HELD IN STRICTEST CONFIDENCE.

THANK YOU FOR YOUR CO-OPERATION AND PARTICIPATION!!

1) Currently, I am a:

- a) Freshman - 1st year
- b) Sophomore - 2nd year
- c) Junior - 3rd year
- d) Senior - 4th year

2) My major is:

- a) Arts - (English, History, Philosophy, Psychology, Sociology, etc.)
- b) Business
- c) Science
- d) Nursing
- e) Forestry
- f) Engineering
- g) Education
- h) Other _____

3) Sex:

- a) Male
- b) Female

4) Current Age:

- a) 17 to 20 years old
- b) 21 to 22 years old
- c) 23 to 26 years old
- d) 27 years and over

- 5) Did you begin university
- a) Right after high school
 - b) At least one year after high school
 - c) Two years or more after high school
- 6) Did you drink alcohol regularly (i.e. weekly) before you attended university?
- a) Yes
 - b) No
- 7) Did you drink alcohol monthly before you attended university?
- a) Yes
 - b) No
- 8) Have you had a drink of alcohol in the past **THREE** months?
- a) Yes
 - b) No
- **NOTE:** For those who answered "NO" to **ALL** 3 questions (6, 7, and 8), GO to question 21. OTHERWISE, complete the rest.
- 9) Most of the time when you drink, how much do you drink on any one occasion?
- a) 1 to 3 drinks
 - b) 4 to 6 drinks
 - c) 7 or more drinks

10) How often do you drink?

- a) Once a week
- b) 2 to 3 times a week
- c) 4 or more times a week
- d) Less than once a week

11) How often do you get drunk when you drink?

- a) Never
- b) Seldom
- c) Half the time
- d) Nearly Always
- e) Always

12) When you do drink, what alcoholic beverages do you mostly drink?

- a) Beer
- b) Wine
- c) Hard liquor (i.e. whiskey, rum, vodka, gin, etc.)

13) *Disregarding any extreme experience, indicate the **TYPICAL** amount you drink of each of the following alcoholic beverages in any **ONE sitting or occasion.**

		D R I N K S		
		1-3	4-6	7+
beer - 1 glass equals 12 oz. bottle	YES/NO	()	()	()
wine - 1 glass equals 4 ozs.	YES/NO	()	()	()
liquor - 1 drink equals 1/1.5 shot	YES/NO	()	()	()

14) Who were you with the last time you drank?

- a) By myself
- b) With a date
- c) With a friend/friends (not a date)

15) Where do you most often drink?

- a) On campus pub
- b) On campus residence
- c) Off campus bar/lounge
- d) Off campus residence

16) Did you miss any class this semester or school year as a result of drinking?

- a) Yes
- b) No

17) Has drinking caused ANY problems for you in the following areas?

- | | |
|----------------------------|----------|
| a) School work/performance | YES / NO |
| b) With parents | YES / NO |
| c) With friends | YES / NO |
| d) With others | YES / NO |

18) Do you drink MORE ...

- a) Before exam period
- b) During exam period
- c) After exam period
- d) NO difference

19) Using the following scale:

Never 1

Seldom 2

Sometimes 3

Always 4

rate the following consequences from your drinking:

Hangover

Headache

Vomiting

Driving while/after consuming alcohol

Lose consciousness

20) Why do you think you drink?

Indicate with an X in the appropriate column the reasons that are most applicable to your drinking behavior.

*because I feel more at ease and less self conscious

*because I feel more at ease with the opposite sex

because I am anxious and uptight

*because my friends drink

because it is sociable

*because it makes me feel good

*because I am bored, there is nothing much else to do

to have a good time

to celebrate

*because I get relief from worries and tensions

because I am lonely

- _____ to get along better with others
- _____ *out of habit
- _____ because I become popular
- _____ because I am depressed
- _____ because I am sad

*Items with asterisk were taken from Killorn (1982).

21) When I am depressed, I drink ...

- a) more (amount)
- b) more often
- c) a + b
- d) less (amount)
- e) less often
- f) d + e
- g) NO difference

22) When I am anxious, I drink ...

- a) more (amount)
- b) more often
- c) a + b
- d) less (amount)
- e) less often
- f) d + e
- g) NO difference

23) Your **average** university grades for last semester were

- a) 80% and over (A)
- b) 70% to 79% (B)
- c) 60% to 69% (C)
- d) 50% to 59% (D)
- e) 49% and below (F)

24) How many subject(s) were:

- a) A - ____ (c) C - ____ (e) F - ____
- b) B - ____ (d) D - ____

25) Do majority of your close friends (ones you run around with most of the time) drink alcoholic beverages?

- a) Yes (b) No

26) If your friends drink, how often on average?

- a) Daily
- b) Once/twice a week
- c) Three or more times a week
- d) Rarely
- e) Never

27) Where are you currently living?

- | | ALONE | WITH OTHERS |
|-------------------------------------|--------|-------------|
| a) On campus | YES/NO | YES/NO |
| b) With parents' or relative's home | YES/NO | YES/NO |
| c) In apartment/house off-campus | YES/NO | YES/NO |

THANK YOU FOR YOUR PARTICIPATION