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THE RELATIONSHIP BETWEEN LEVEL OF ALCOHOL INTAKE AND
SCORES ON THE SHORT MICHIGAN ALCOHOLISM SCREENING
TEST AND ACADEMIC PERFORMANCE

A THESIS
Presented to
the Graduate Faculty
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of the Requirements for the Degree
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College Student Personnel

by
Mark A. Morris
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ABSTRACT

The purpose of this study was to determine the relationship between (1) level of alcohol intake, and (2) scores on the Short Michigan Alcoholism Screening Test (SMAST) and the Academic Performance of University Wisconsin-La Crosse Freshmen. A questionnaire was mailed to a random sample of 156 students who resided on campus and whose ACT scores could be obtained. Tabulation of the questionnaire gave each individual a SMAST score and allowed each respondent to be grouped as an Abstainer, Infrequent, Light, Moderate, or Heavy alcohol user.

Nine null hypotheses were developed using available variables. Pearson's r technique indicated no significant correlation ($p < .01$) between SMAST scores and Predicted GPA (based on ACT data), Attained GPA (cumulative Grade Point Average at the end of Semester II, 1982-83), or Discrepancy Score (numerical difference between Attained GPA and Predicted GPA). Analysis of variance indicated no significant differences in Mean Predicted GPA, Mean Attained GPA, or Mean Discrepancy Score among Abstainers, Infrequent, Light, Moderate, and Heavy alcohol users. When groups were subgrouped according to sex, no significant differences were indicated. None of the proposed hypotheses were rejected by the data. No significant relationship could be determined between level of alcohol intake or scores on the SMAST and the Academic Performance of University Wisconsin-La Crosse Freshmen.

CHAPTER ONE
INTRODUCTION

From the inception of the first colleges in North America "alcoholic sociability was a regular and assumed part of influential and nearly all other shades of society" (Warner, 1970, p. 46). Warner (1970) refers to a 1903 study of Eastern colleges and universities that concluded that 90% of Freshmen and 95% of Seniors drank, that 35% of those studied were viewed as heavy drinkers and that 15% were considered "drunkards". Evidence indicates that alcohol use is still an assumed and accepted part of the college and university community (Ingalls, 1978, 1982).

Over the last twenty-five years, an increasing amount of literature has emerged regarding patterns of alcohol consumption among college students. Much of the literature is intended to get some measure of the frequency and circumstances under which students drink alcohol. The focus of the literature seems to be prevention and education, with an emphasis on responsible, informed alcohol usage among students (NIAAA, 1976).

Realizing that alcohol use has become an assumed and accepted part of the university community, this study sought to determine the relationship, if any, between alcohol usage and the academic performance of college Freshmen.

Statement of the Problem

This study posed two research questions. First, is there a relationship between the development of alcohol-related problems, as measured by the Short Michigan Alcoholism Screening Test (SMAST) (Selzer, Vinokur, & Van Rooijan, 1975), and a college student's ability or inability to perform academically at predicted levels? Secondly, is there a relationship between level of alcohol intake, the frequency and/or quantity with which college students consume alcohol, and one's ability or inability to perform academically at predicted levels? This study involved a prediction of overall Grade Point Average (GPA) based on American College Testing Program (ACT) data; then a comparison of Predicted GPA to Actual or Attained GPA. The congruity between Predicted GPA and Attained GPA, for the purpose of this study, was the measure of academic performance. The intention of the study was to determine the relationship, if any, between the variables: level of alcohol intake and alcohol-related problems and the academic performance of University of Wisconsin-La Crosse Freshmen.

Importance of the Study

Alcoholism and alcohol-related problems have reached alarming proportions in the United States. The Department of Health, Education, and Welfare (HEW, 1978) reports that there are as many as 10 million adult problem drinkers in the United

ASSUMPTION

Independent
 dependent
 limit only
 U-W students

States. Nearly one person in five reports that someone close to them drinks too much. HEW (1978) also reported that, "In men, heavier drinking is highest in the 18 to 20 age group" (p. 31). This is particularly relevant to the young population which is the focus of this study.

The social, medical, emotional, and personal complications surrounding this country's alcohol problem are myriad. The United States Department of Health and Human Services (HHS), in their 1980 report on Alcohol and Health, indicated that alcohol is associated with up to 64% of all traffic fatalities, 50% of all fatalities due to falling, and up to 80% of all suicides. Losses to society in terms of lost production, health and medical costs, public welfare costs, and costs to the criminal justice system are estimated at \$42 billion per year (HHS, 1980).

Concentrating on American colleges and universities, the National Institute on Alcohol Abuse and Alcoholism (1976) conducted a national survey of colleges and universities. They found that from 71-96% of the college students they surveyed drank. At some universities as many as 10% of the study population "drinks everyday or nearly everyday" (NIAAA, 1976).

A recent survey conducted by The Chronicle of Higher Education (Ingalls, 1982) indicated that most college and university administrators are aware of and responding to alcohol problems within the campus community. The Chronicle's 1981 survey of 181 Deans of Student Affairs reported that 68.5% of all colleges and universities in this random sample have programs to

educate their students about alcohol. Forty-four percent have programs to treat abusers. Overall, 16.1% of the student population was viewed by the Deans as drinking "excessively". The figure for Midwestern public universities was 21.3%. Finally, 72.2% of the Midwestern colleges they surveyed reported an increase in the last five years in "requests for help with alcohol problems" (Ingalls, 1982).

It is known that alcohol use and abuse is a national problem from which the campus community is not immune. It is also known that the great majority of students drink in light to moderate amounts without complications (Kuder & Madson, 1976). There are, however, indications that a substantial minority of students drink heavily, particularly males (Kaplan, 1979). As many as one-third of the students who do drink may have developed problems related to that drinking (NIAAA, 1976).

The present study asks: Is there a significant, verifiable relationship between the excessive or problematic use of alcohol, and an inability to perform academically at expected levels? An affirmative answer to that inquiry has extensive implications for student affairs professionals, students, and faculty alike.

If a significant, predictable connection between alcohol usage and academic performance can be demonstrated, the first step should be to study the dynamics of that connection. Once the dynamics of this connection are better understood, programs can be developed to deal with the problem. Academic performance is important to academic success and student persistence. A

preoccupation with alcohol may result in low grades, low motivation, improper study habits, and a waste of human talent. This is a concern to all student affairs professionals.

It is also essential to realize that the alcohol problems of youth may not be of a transient or situational nature. Fillmore (1975), in his 20-year follow-up study of Straus and Bacon's (1953) ground breaking study of college problem drinking, found a predictable, significant relationship between specific problem drinking behaviors as a student, and alcohol-related problems as an adult. Academic performance may be an early victim of a persisting and debilitating sickness.

Review of Related Literature

A review of the literature indicates a paucity of research regarding the specific relationships between (1) level of alcohol intake and academic performance, and (2) scores on the SMAST and academic performance.

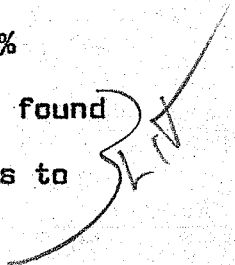
There is a considerable amount of literature detailing the quantity and frequency with which college students consume alcoholic beverages. Straus and Bacon (1953), in their study of 17,000 students from twenty-seven colleges and universities, found that 39% of Freshman males consumed alcohol two or more times per month in "moderate to large amounts". Overall, the authors found, "Less than one-half students drink more than once a month; fewer than a fifth of the men and a tenth of the women drink more than once a week" (p. 117). Straus and Bacon (1953)

identified 6% of the males and 1% of the females as having an identifiable drinking problem. Straus and Bacon (1953) did not attempt to relate quantity and frequency or the development of drinking problems to academic performance. They did, however, conclude that "problems associated with drinking are directly correlated with both amounts of alcohol consumed and frequency of drinking" (p. 115).

Hanson (1974), in his study of thirty-seven colleges and universities, found 80% of the males and 73% of the females he surveyed drank, this compared to 77% and 61% respectively for Straus and Bacon (1953). Bibler, Hashway, and Annick (1980) found nearly 50% of males and 17.6% of females on campus consuming alcoholic beverages at least three times a week. Bibler et al. also found that almost 12% of the men and 3% of the women are drinking "nearly everyday", and that 26.7% of the males and 7.4% of the females admit to getting drunk at least once a week. Chen, Dosch, and Cychosz (1982) conducted a study at the University of Wisconsin-La Crosse regarding the impact of an Alcohol Awareness Week on the drinking behaviors and attitudes of students. According to the criteria of this study, Chen et al. identified 13% of the subjects as heavy drinkers (15 or more drinks per week).

Wright and Moore (1982) found that 8.9% of the male and 3.3% of the female undergraduates they surveyed admitted to a drinking problem. Referring again to Ingalls' (1982) article in The Chronicle, Deans of Student Affairs at public 4-year colleges indicated that 7.6% of the students they come in contact with are

"in need of treatment" for their alcohol problems.

Probably the most recent study of the drinking habits and problems of college students is the preliminary report (Ingalls, 1983) of a study done by Ruth C. Engs and David J. Hanson. This study indicates that the proportion of students who drink has apparently leveled off over the last eight years. Also, the percentage of students considered heavy drinkers (consume six or more drinks at a sitting, more than once a week) has risen slightly to 17.2% of all respondents. Among Freshmen, 76.1% drink, and 23.1% drink heavily. Relatedly, Engs and Hanson found that the lower a student's GPA, the more likely he or she is to be a heavy drinker. 

Though there are now indications that the drinking patterns of university students have somewhat stabilized (Ingalls, 1983), most recent literature seems to indicate that students are drinking in greater percentages, with more frequency, in greater quantities, and with more resulting problems than they were at the time of Straus and Bacon's 1953 study. It is also important to note that the literature consistently indicates that males tend to drink more frequently, in greater amounts, and with more resulting problems than females.

No literature was obtained on the use of the SMAST among university students. Cannel and Favazza (1978), however, modified the Michigan Alcoholism Screening Test (MAST) (Selzer, 1971), the instrument from which the SMAST was derived, to screen students at two Midwestern universities regarding their drug and

alcohol usage. Cannel and Favazza (1978) found that at a large state university (Campus A), 25% of those surveyed scored 5 or more points, while at a small liberal arts college (Campus B), 22% scored 5 or more points. Those who scored more than 5 points were "felt to have some difficulty" with alcohol and/or drugs. Cannel and Favazza made no attempt to link MAST scores to academic performance.

Hinrichs and Haskell (1978) in their study of the drinking patterns of a small liberal arts college, single out Freshmen for special mention. They found that "those Freshmen who drink consume considerably more than upperclassmen who drink" (p. 560). Freshmen are also more likely to leave a party feeling "smashed" than are upperclassmen. Hinrichs and Haskell noted that 23.8% of Freshman males report drinking eight or more beers at a party. While 13% of all respondents agreed "that their sleep or study is frequently or more often disturbed as a result of the drinking of others" (p. 561), 21.6% of Freshmen agreed, and 27.1% of Freshmen males.

In a study closely related to the present one, Finnel and Jones (1975) undertook to study the effect of marijuana and alcohol usage on academic performance. They classified respondents into 4 groups: abstainers; users of marijuana but not alcohol; a user of alcohol but not marijuana; and a user of both. Mean aptitude scores were then calculated from ACT data for each group, and expected GPA's predicted. Finnel and Jones did find significant differences in aptitude among the four groups, but

found no significant differences between expected and actual GPA for any of the groups. Regarding the use of alcohol, they conclude that "the moderate use of alcohol had no adverse effects on academic performance of students involved in the study" (p. 20). Finnel and Jones did not utilize the SMAST or any similar test to discern a relationship between test scores and academic performance. Nor did they specifically analyze the relationship between level of alcohol intake and academic performance.

Rivers in a 1981 study analyzed the relationship between the use of six categories of drugs - including alcohol - and academic success. His cross-sectional study of an urban campus found no significant differences on three measures of academic achievement among occasional, frequent, and nonusers of the six identified drug categories. Regarding alcohol he states that "the investigation showed no relationship between the use of alcohol and academic performance." However, he states an insignificant number of respondents were classified as "frequent users" for that category to be analyzed statistically.

When college students are specifically asked if their drinking interferes with their schooling, small percentages do respond affirmatively. When Kuder and Madson (1976) asked if drinking interfered with school (i.e. missing class) 12% of those surveyed responded positively. When Hinrichs and Haskell (1978) inquired as to "the usual consequences of drinking", 5.9% of all respondents admitted their drinking led to a "failure to prepare for class", 3.9% admitted "skipping class". Among Freshmen the

figures were 4% and 3% respectively. Referring to Engs and Hanson's preliminary inquiry (Ingalls, 1983), 18.4% of students admitted missing class because of a hangover; 4.1% admitted alcohol use had caused them to receive a lower grade. Finally, Chen, Dosch, and Cychosz (1982), in their study of the impact of an Alcohol Awareness Week on college students, indicated that nearly a quarter of the students in their random sample admitted they had missed class as a consequence of their drinking. Relatedly, 10% of those surveyed prior to the Alcohol Awareness Week indicated they had received a lower grade as a consequence of their drinking.

A survey of the literature indicates that most students drink and that a considerable minority may drink excessively. Some students also are experiencing alcohol-related problems, and admit that their alcohol use had interfered to some degree in their academic pursuits. None of the literature reviewed demonstrated a significant relationship between level of alcohol intake, as determined by the frequency or amount of alcohol consumed, and academic performance. No literature was found regarding a possible relationship between scores on the Short Michigan Alcoholism Test and academic performance.

Assumptions and Hypotheses

The following assumptions were made by this study:

1. It was assumed that the SMAST retains its reliability and validity when applied to a population for whom many of the

symptomology or complications of a drinking problem may have only begun to emerge. It also must be remembered that the SMAST is a screening device and not a diagnostic instrument.

2. It is also assumed that responses to Part I of the questionnaire used in this study (see Appendix C) relating to level of alcohol intake, and Part II of the questionnaire, which is the SMAST, are separate variables. There is no intention to use the two variables interchangeably, or to assume a relationship between level of alcohol intake and the development of alcohol problems.

3. It is assumed that it is not a respondent's specific alcoholic beverage preference that is important, but the quantity and frequency with which he/she consumes alcohol.

Null Hypotheses

Two research questions were used to guide this study:

(1) What is the relationship between the quantity and/or frequency of alcohol consumed and academic performance? (2) What is the relationship between the development of alcohol-related problems, as measured by the SMAST, and academic performance? From these research questions the following null hypotheses were proposed:

1. There will be no significant relationship between scores on the SMAST and Predicted GPA.

2. There will be no significant relationship between scores on the SMAST and Attained GPA.

3. There will be no significant relationship between scores on the SMAST and Discrepancy Scores.

4. For that group identified as having a problem with alcohol (3 or more points on the SMAST), there will be no significant difference between the Discrepancy Scores of those In Treatment and those not In Treatment.

5. There will be no significant differences in Mean Predicted GPA among Abstainers, Infrequent, Light, Moderate, and Heavy drinkers.

6. There will be no significant differences in Mean Attained GPA among Abstainers, Infrequent, Light, Moderate, and Heavy drinkers.

7. There will be no significant differences in Mean Discrepancy Scores among Abstainers, Infrequent, Light, Moderate, and Heavy drinkers.

8. When Abstainers, Infrequent, Light, Moderate, and Heavy groups are subgrouped according to sex, relationships between variables will be unaffected.

9. For those respondents who drink at least once a week, there will be no significant relationship between number of drinks and Discrepancy Scores.

Definition of Terms

Predicted or Expected GPA -- an estimate of a college student's Overall GPA based on ACT scores and reported High School grades. This estimate is arrived at using the ACT's "Computational Table for the Prediction of Overall GPA".

Attained GPA -- actual or achieved Overall GPA, that GPA

finally recorded in the Registrar's Office.

Academic Performance -- congruity of Predicted GPA and Attained GPA, a measure of a student's ability to achieve at predicted levels, reflected in Discrepancy Scores.

Discrepancy Scores -- numerical difference between Attained GPA and Predicted GPA. A negative difference indicates achievement below expected levels. A positive difference indicates achievement above expected levels.

The SMAST -- the Short Michigan Alcoholism Screening Test. A 13 item test designed to screen for alcohol problems. The SMAST consists of items 1-13 in Part II of the questionnaire used in this study (Appendix C).

Abstainer -- student who drinks less than once a year or not at all (HEW, 1978).

Infrequent Drinker -- student who drinks less than once a month but at least once a year (HEW, 1973).

Light Drinker -- student who drinks more than once a month but less than 4 drinks per week.

Moderate Drinker -- student who drinks 4 to 13 drinks per week (HEW, 1978).

Heavy Drinker -- student who drinks 2 or more drinks per day or 14 or more drinks per week (HEW, 1978).

In Treatment -- refers to a student who has indicated that he/she is presently seeing a counselor or therapist, or is involved in group therapy or Alcoholics Anonymous.

One Drink -- one 12 oz. beer; one 5 oz. glass of wine; one mixed drink or shot.

CHAPTER TWO

METHOD

This study examined the relationship between (1) the development of alcohol-related problems, as measured by the Short Michigan Alcoholism Screening Test (SMAST), and academic performance, and (2) the frequency and/or quantity of alcohol consumption and academic performance. *independ*

Subjects

The subjects of this research consisted of 60 male and 96 female undergraduates enrolled full-time at the University of Wisconsin-La Crosse during Semester II of the 1982-83 academic school year. The 159 subjects were a 15% random sample from a Freshman population of approximately 1,000 who resided in UW-La Crosse residence halls and for whom ACT scores were available. The random sample was generated by UW-La Crosse's Computer Center. Three of the subjects selected by the computer were not living on-campus and were therefore omitted from the survey. All 156 of the remaining subjects were single. They came from a variety of geographic areas, mostly within the state of Wisconsin. Age range of subjects was from 17 to 20 years old, with the majority being 18 or 19. *III*
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One-hundred and ten of the 156 students surveyed responded to the survey, for a return rate of 70%. One respondent had

altered his code and another had not completed the questionnaire. Both were excluded from tabulations. Additionally, ACT scores were not reported for two respondents. They also were excluded from final tabulations. There were 106 usable responses. Of the 106 usable responses 41 were males and 64 females. Males composed 38.5% of the original sample and 39% of respondents. Females composed 61.5% of the original sample and 61% of respondents.

Research Design

The purpose of this study was to determine if a definable relationship exists between (1) frequency and/or quantity of alcohol consumed and academic performance, and (2) scores on the SMAST and academic performance.

The primary independent variables used in this study were (1) the scores on the SMAST and (2) the frequency and quantity items of the survey instrument whereby students were grouped as Abstainer, Infrequent, Light, Moderate, or Heavy. The sex of the respondent and whether or not one is In Treatment for a drinking problem are additional independent variables.

The dependent variables consisted of Predicted GPA, Attained GPA, and academic performance as measured by Discrepancy Scores.

The internal validity of the research design is open to some question. There are a variety of factors which have been shown to have some predictive validity regarding academic performance. These include socio-economic status, study habits, teacher and

student attitudes, and various personality and demographic variables (Lavin, 1965). It is assumed that randomization has controlled to a large extent the confounding effects of these variables.

The ability to generalize from this study should be limited to similar subjects in similar circumstances. This study concerned Freshmen who live in residence halls at a middle-sized, public, Midwestern university which requires Freshmen to live on-campus.

It is important to examine the use of ACT data to predict Overall GPA. Correlations between ACT scores and GPAs have been found to be significant at the .01 level (Rowan, 1978), with multiple correlations in the .50-.59 range (Rowan, 1978; Funches, 1965). Correlation coefficients are highest in the earliest semesters and tend to drop off as a student advances in college (Rowan, 1978).

The ACT formula utilized to predict GPA in this study was obtained from "The ACT Standard Research Service Report: Summary Analysis 1981-82 Freshmen". This report is specifically designed and applicable to University of Wisconsin-La Crosse Freshmen. Predictions were based on two multiple correlation formulas which utilized 4 ACT scores (T index) in combination with 4 reported High School grades (H index). The combination of T and H indexes yielded a correlation coefficient (R) of .575.

Instrumentation

The questionnaire used in this study consisted of two parts (see Appendix C). Part I consisted of two questions whereby students were grouped as an Abstainer, Infrequent, Light, Moderate, or Heavy alcohol user. Part II consisted of 14 items, items 1-13 compose the SMAST and item 14 was added for hypothesis testing.

Part I of the questionnaire consisted of two questions. The first question and response options were developed by the author to get some measure of the frequency of alcohol use over a specified period of time. An affirmative response to any of the options assisted in grouping each respondent as an Abstainer, Infrequent, Light, Moderate, or Heavy drinker.

The second question in Part I, also developed by the author, aimed at determining the quantity or amount of alcohol an individual usually consumes when he/she does drink. Responses to this question further assisted in grouping individuals as Light, Moderate, or Heavy drinkers.

Short Michigan Alcoholism Screening Test (SMAST)

Items 1-13 in Part II of the questionnaire consisted of the SMAST. The SMAST was derived from the Michigan Alcoholism Screening Test (MAST) (Selzer, 1971). The MAST is a 25 item test which is frequently used as a screening test among a variety of populations (Favazza & Pirus, 1974; Moore, 1975; Selzer, Vinokur, & Van Rooijen, 1975). In order to develop the SMAST, Selzer, Vinokur, and Rooijen (1975) used a step-wise regression procedure

to select 13 MAST items "that significantly improved the prediction of the dependent variable, which was alcoholic or nonalcoholic" (Selzer et al., 1975, p. 123). Selzer et al. were trying to develop an effective, short, self-administered, easily scorable version of the original 25 item MAST.

Selzer, Vinokur, and Van Rooijen (1975) in their analysis of the validity and reliability of both the MAST and the SMAST conclude, the SMAST "may be substituted for the MAST as a screening test" (p. 123). They report Reliability Coefficients alpha for the SMAST of .76, .78, and .93 for three different populations. They also indicate that the validity of the SMAST is high. The authors indicate Product-Moment correlations of .83 in one group and .94 in another. Validity coefficients were "slightly better than those of the original MAST" (p. 125). The authors also report that validity coefficients were not affected by denial or by the age of the subject.

Suggested scoring on the SMAST is as follows: One option on each item of the SMAST is scored one point while the other option is scored zero. The maximum number of points is 13, the minimum is 0. Subjects scoring 0 or 1 point are considered "nonalcoholics"; those scoring 2 points are considered "possibly alcoholic"; and those scoring 3 or more points are considered "alcoholic". Selzer et al. warn that the SMAST is a screening device and "the screening may include many 'false positives'" (p. 125).

Zung (1975) in his item analysis of the MAST found that overall the internal validity of the MAST was good. He notes that

the most "nondiscriminating items" in the MAST were those "pertinent to populations with severe alcoholic symptomology" (p. 131). Three of the four items which Zung mentions as lacking discriminatory powers have been excluded from the SMAST. The exclusion of items relating to more severe alcoholic symptomology may make the SMAST a more appropriate instrument for use among a young population, which may not have developed the more severe complications characteristic of the later stages of alcoholism (Jacobson, 1976, chap. 13).

It is important to note that although Selzer et al. (1975) refer to the SMAST as a screening device for alcoholism, other authors in this context (Cannel & Favazza, 1978; Zung, 1975) use "problem drinking" interchangeably with alcoholism. For the purposes of this paper the SMAST has been considered as an instrument that discriminates between adjustive and problem drinkers.

Item number 14 was attached to the SMAST in Part II of the questionnaire used in this study (Appendix C). Item 14 asked if a student was presently seeing a counselor or therapist, or was involved in group therapy or Alcoholics Anonymous. It was felt that some attempt should be made to discriminate between those students who manifested a drinking problem and were under some kind of treatment, and those students who have alcohol problems but were under no treatment.

Procedure

Once the survey instrument was designed and the particular population under study was defined, the next step was to have a random sample generated. A random sample was generated by UW-La Crosse's Computer Center. An initial mailing of a survey instrument (Appendix C), a cover letter (Appendix A), and a preaddressed envelope was sent to the campus address of each subject as provided by the Computer Center. Each survey was coded with a four digit number so that responses on the questionnaire could later be compared and correlated to ACT data for each particular student. A corresponding number was placed next to each subject's name on the computer print-out. The students were requested to return the completed survey in the preaddressed envelope either by delivering it to the Housing Office or returning it via Campus Mail. The initial mailing was made on May 6th, 1983. After one week, returned surveys were collated and those students who had not responded were sent another cover letter (Appendix B), again accompanied by a coded questionnaire and a preaddressed envelope. The second mailing was made on May 13.

At the completion of the semester all respondents' surveys were tabulated. Part I of the survey was used to group respondents according to alcohol intake. Those groupings were labeled Abstainer, Infrequent, Light, Moderate and Heavy. Items 1-13 in Part II of the survey were tabulated giving each respondent a SMAST score.

With authorization from the Registrar's Office, ACT Test Scores and High School Averages were obtained from the Computer Center for survey respondents. Utilizing ACT data and ACT's 1981-82 "Computational Table For Predicting Overall GPA", an overall GPA was predicted for each individual within each group. Means and Standard Deviations for Predicted GPA were computed. Also, Predicted GPAs were correlated with SMAST scores.

Subsequently, each respondent's Attained overall GPA was obtained from the Computer Center. Attained Means and Standard Deviations were computed for each group. Also, Attained GPA was correlated with SMAST scores.

Finally, each respondent's Predicted GPA was subtracted from his or her Attained GPA, yielding a Discrepancy Score. A negative difference indicated an inability to achieve at predicted levels and a zero or positive score indicated achievement at or above predicted levels. To simplify statistical analysis, a constant was later added to the Discrepancy Score so that all scores were positive in value.

Discrepancy Score Means and Standard Deviations were then calculated for the groups Abstainer, Infrequent, Light, Moderate, and Heavy. Discrepancy Scores were also correlated with the SMAST score of each respondent.

Data Analysis

Four statistical procedures were used to analyze data and test hypotheses. First, Pearson's Product Moment Correlation was

used to test the relationship between SMAST scores, Predicted GPA, Attained GPA, and Discrepancy Scores. Analysis of variance was used to determine significant differences in Mean Attained GPA, Mean Predicted GPA, and Mean Discrepancy Scores for the groups Abstainer, Infrequent, Light, Moderate and Heavy. To further analyze results, multiple t-tests were performed among variables. Lastly, in order to obtain additional information males and females were compared using chi-square as a statistical technique.

The significance level that was chosen for rejection of the null hypotheses was .01.

Delimitations

In narrowing the focus of this paper the following population was chosen: Freshmen who resided on-campus at the University of Wisconsin-La Crosse during Semester II of the 1982-83 academic school year and for whom ACT scores were available. This population was also selected because the correlation between ACT scores and GPA lessens as a student progresses through the university. The Freshman population was the most appropriate to examine using the particular methodology of this study. This research is limited to the particular population selected for study.

CHAPTER THREE

RESULTS AND DISCUSSION

The purpose of this study was to determine if there was a significant relationship between level of alcohol intake and the development of alcohol-related problems, as measured by the Short Michigan Alcoholism Screening Test (SMAST), and academic performance. Nine null hypotheses were proposed. This chapter is divided into eight sections in order to address these hypotheses and present the results of this inquiry.

Null Hypotheses 1-4

Hypotheses 1-3 were based on the relationship between scores on the Short Michigan Alcoholism Screening Test and (1) Predicted GPA, (2) Attained GPA and (3) Discrepancy Scores.

Null Hypothesis 1 stated: There will be no significant relationship between scores on the SMAST and Predicted GPA. Pearson's Product Moment Correlation technique was used to test this hypothesis. A correlation coefficient of .002 indicated no relationship between SMAST scores and Predicted GPA (see Table 1).

Null Hypothesis 2 stated: There will be no significant relationship between scores on the SMAST and Attained GPA. Pearson's r was again used to test this hypothesis. A coefficient of .0117 indicated no relationship between variables (see Table 1). Null Hypothesis 2 was not rejected by the data.

Table 1

Pearson Correlation Coefficients and Levels of Significance

Variable	Attained GPA	Predicted GPA	Discrepancy Score
SMAST Score	r = .0117 p = .453	r = .0020 p = .492	r = .0133 p = .446

Null Hypothesis 3 stated: There will be no significant relationship between scores on the SMAST and Discrepancy Scores. Pearson's r was again utilized to analyze variables. A correlation coefficient of .0133 was obtained using this technique (see Table 1). It was concluded that no significant relationship exists between SMAST scores and Discrepancy Scores. Null Hypothesis 3 was not rejected by the data.

Null Hypothesis 4 stated: For that group identified as having a problem with alcohol (3 or more points on the SMAST), there will be no significant difference between the Discrepancy Scores of those In Treatment and those not In Treatment. Whether or not one was considered In Treatment depended on a subject's response to item 14 in Part II of the questionnaire used in this study (see Appendix C). Since none of the 106 subjects responded positively to that item, Null Hypothesis 4 could not be tested.

Null Hypotheses 5-8

Null Hypotheses 5-8 addressed the relationship between level of alcohol intake and the variables Predicted GPA, Attained GPA,

and Discrepancy Score. Responses to Part I of the survey instrument were used to group respondents as Abstainer, Infrequent, Light, Moderate, or Heavy drinker. Analysis of variance was the statistical technique used by the author to simultaneously compare sample means to determine if there was a significant difference within the data. The results of this analysis are presented in Table 2.

Table 2

F-ratios and Levels of Significance for Analysis of Variance Among Groups Abstainer, Infrequent, Light, Moderate and Heavy

Variable	F-ratio	Significance of F
Predicted GPA	1.041	.390
Attained GPA	1.274	.286
Discrepancy Score	0.392	.814

Null Hypothesis 5 stated: There will be no significant differences in Mean Predicted GPA among Abstainers, Infrequent, Light, Moderate, and Heavy drinkers. The analysis of variance technique yielded an F -ratio of 1.041 (see Table 2). The significance of F was .390 indicating no significant relationship among groups on this variable. Null Hypothesis 5 was not rejected.

Null Hypothesis 6 stated: There will be no significant differences in Mean Attained GPA among the groups Abstainer, Infrequent, Light, Moderate, and Heavy. Analysis of variance

yielded an F -ratio of 1.274 which was significant at the .286 level. Therefore, no significant relationship between variables could be determined. Null Hypothesis 6 was not rejected.

Null Hypothesis 7 stated: There will be no significant differences in Mean Discrepancy Scores among the groups Abstainer, Infrequent, Light, Moderate, and Heavy. Analysis of variance yielded an F -ratio of 0.392 with a significance of .814 (see Table 2). The data again failed to reject the Null Hypothesis.

Null Hypothesis 8 stated: When Abstainer, Infrequent, Light, Moderate, and Heavy groups are subgrouped according to sex, relationships between variables will be unaffected. Data from the analysis of variance technique indicated that when Abstainers, Infrequent, Light, Moderate, and Heavy drinkers are compared according to sex, variables remained unaffected. F -ratios of 1.294, 0.771, and 0.694 for the variables Attained GPA, Predicted GPA, and Discrepancy Score respectively were obtained. None of these F -ratios approached significant levels. Null Hypothesis 8 was, therefore, not rejected.

Null Hypothesis 9

Null Hypothesis 9 stated: For those respondents who drink at least once a week, there will be no significant relationship between number of drinks per week and Discrepancy Scores. This hypothesis was again tested using Pearson's r technique. Hypothesis 9 refers only to those groups identified as Moderate or Heavy. The remaining 3 groups did not have their alcohol

intake quantified on a per week basis. The obtained correlation coefficient of $-.1347$ indicated an inverse relationship between variables. As number of drinks per week rises the Discrepancy Score becomes smaller. This relationship between variables was significant at a $.084$ level. There was then some correlation, but not a significant ($p < .01$) correlation, between variables. Null Hypothesis 9 was not rejected by the data (see Table 3).

Table 3

Pearson Correlation Coefficients and Levels of Significance

Variable	Attained GPA	Predicted GPA	Discrepancy Score
Number of Drinks per Week	$r = .2430$ $p = .006$	$r = .2239$ $p = .011$	$r = -.1347$ $p = .084$

The statistical test of the 9 Null Hypotheses indicated that none was rejected by the data. Only Null Hypothesis 9 showed some relationship between variables ($p = .084$). The data as presented in these 9 Null Hypotheses indicated no relationship of significance ($p < .01$) between either level of alcohol intake and academic performance, or between scores on the SMAST and academic performance.

Supplementary Findings

There are several supplementary findings which may add clarity to the further understanding of the interaction of

variables used in this study. These supplementary findings will be addressed below.

Reconsideration of the variable number of drinks per week, which was utilized in Null Hypothesis 9, provides one with some important additional information. It was noted that as number of drinks per week increased the Discrepancy Score decreased, indicating a negative correlation between variables. The data also revealed a negative correlation between number of drinks per week and the variables Attained GPA and Predicted GPA (see Table 3). Attained GPA correlated with number of drinks per week at $-.2430$, which was significant at a $.006$ level. Predicted GPA correlated with number of drinks per week at $-.2239$, which was significant at a $.011$ level. This relationship indicated that as number of drinks per week increased Predicted GPA and Attained GPA tended to decrease.

The breakdown and presentation of the Means for the groups Abstainer, Infrequent, Light, Moderate, and Heavy also may be of some value (see Table 4). One of the findings of note is that among the 106 usable responses only two respondents were classified as an Abstainer. One of those classified as such had a particularly high SMAST score indicating he had perhaps drunk more heavily at one time but had severely restricted his intake of late. Because of the small number of subjects the Abstainer group is not a very useful group for statistical analysis. ✓

Table 4

Presentation of Group Means for the Variables SMAST Score, Attained GPA, Predicted GPA, and Discrepancy Score

Group	Mean SMAST Score	Mean Attained GPA	Mean Predicted GPA	Mean Discrepancy
Abstainer (A)	4.5000	2.5100	2.4450	.0650
Infrequent (I)	0.8000	2.9160	2.5060	.4100
Light (L)	0.8276	2.6790	2.3838	.2952
Moderate (M)	0.4667	2.5747	2.3193	.2553
Heavy (H)	1.2571	2.3177	2.2011	.1166
Total Population	0.9340	2.5493	2.3179	.2341

In the final tabulations, the Abstainer group composed 2% of subjects; the Infrequent group composed 10%; the Light group composed 28%; the Moderate group composed 28%; and the Heavy drinking group composed 32% of all subjects.

It should be noted in the examination of Table 4 that when Abstainers are excluded from consideration, the group identified as Heavy drinkers scored higher on the SMAST than any other group. Multiple T-tests performed on this variable indicate that the Heavy drinking group's SMAST score is significantly higher ($p < .01$) than the Moderate group. A T value of -2.82 was obtained. This has a two-tailed probability of $.006$.

Differences are also observed in the Means of the various groups in regard to the variable Attained GPA (see Table 4). The

group with the highest Mean Attained GPA is that group classified as Infrequent drinkers. Multiple T-tests were performed on the variable Attained GPA between groups. Although no significant differences ($p < .01$) were indicated by the data, there were substantial differences between the Mean Attained GPA of Infrequent drinkers and Heavy drinkers, and between Light drinkers and Heavy drinkers. T values were significant at .012 ($T = 2.62$) and .038 ($T = 2.12$) levels, respectively.

Again regarding Mean Predicted GPA, Table 4 indicates that Mean Predicted GPA is at its highest for the Infrequent group and at its lowest for the Heavy group. Multiple T-tests indicate that the differences between Infrequent drinkers and Heavy drinkers is significant at a .056 level ($T = 1.96$). The difference in Mean Predicted GPA between Light and Heavy drinkers is significant at a .064 level ($T = 1.89$).

When considering Discrepancy Scores, it is important to remember that a positive Discrepancy Score reflects achievement above predicted levels. The Mean Discrepancy Scores for all groups are positive, indicating all groups on average achieved above predicted levels. However, the H group had the lowest Discrepancy Score, indicating that that group may not be performing academically as effectively as the other groups. However, multiple T-tests indicated no significant difference among groups on this variable.

In order to obtain additional information, several chi-square analyses were also performed with the available data. Two

chi-square analyses were significant at a .05 level. When males were compared with females on whether they are categorized by this study as a Heavy drinker or as drinking Moderately or less, it was found Freshman males were significantly ($p < .05$) more likely to be classified as a Heavy drinker than were Freshman females. Out of 41 male respondents, 19 were grouped as Heavy drinkers. Out of the 65 female respondents, 16 were grouped as Heavy drinkers. A χ^2 value of 5.366 ($p < .05$) was obtained.

A chi-square analysis was also conducted comparing male and female respondents on whether they scored 2 or more SMAST points. If a .05 level of significance is accepted, this analysis indicated that Freshman males were significantly more likely than Freshman females to score two or more points on the SMAST. A χ^2 value of 4.356 was obtained, which exceeds a .05 level of significance.

The results of these two chi-square analyses indicated that Freshman males were significantly more likely to drink heavily and also significantly more likely to develop alcohol-related problems, as measured by the SMAST, than were Freshman females.

Some attention should also be directed toward the results of the Short Michigan Alcoholism Screening Test (SMAST) utilized in this study. The distribution of scores on this test is presented in Table 5.

Table 5
Distribution of SMAST Scores Among Respondents

SMAST Score	N	%
0	54	51
1	25	24
2	17	16
3	5	5
4	3	3
5	0	0
6	1	1
7	1	1
8 or more	0	0
Total	106	

According to the criteria set up by Selzer, Vinokur, and Van Rooijen (1975), those respondents scoring one point or less have no apparent alcohol problems. Those scoring 2 points have some possible problems, and those scoring 3 or more points have definite problems. According to this criteria, 75% of these respondents have no problems with alcohol. Sixteen percent have possible problems, and the remainder have developed definite drinking problems.

One final finding of this study reflects favorably on the methodology used. A correlation coefficient of .6107 was obtained between the variables Predicted GPA and Attained GPA. This correlation exceeds the .575 correlation coefficient which had been projected using ACT data. The .6107 correlation was signi-

cant at a .01 ($p < .01$) level of significance.

Discussion

In the overall consideration of the results of this study, it is important to note that although none of the null hypotheses was rejected at a .01 level of significance, there were indications of relationships between variables.

When Hypothesis 5, regarding Mean differences in Predicted GPA among the groups Abstainer, Infrequent, Light, Moderate, and Heavy, was analyzed using the T-test, there did appear to be a difference between Infrequent drinkers and Heavy drinkers. There also appears to be a greater than chance difference between Light and Heavy drinkers. The significance of the difference between the Infrequent group and the Heavy group is $p = .056$. The significance of the difference between the Light group and the Heavy group is $p = .064$.

Multiple T-tests reveal a corresponding difference exists between the same groups on the variable Attained GPA. The difference between the Infrequent and the Heavy groups is significant at a .012 level. The difference between the Light and Heavy groups is significant at a .038 level.

If the formula for the prediction of GPA used in this study is valid, it logically follows that a substantial difference in Predicted GPA between groups should also be reflected in Attained GPA. The findings are consistent with this conclusion.

How do these findings reflect on academic performance?

What is indicated is that there is apparently a fairly close congruity for all groups, regardless of alcohol intake, between Predicted GPA and Attained GPA. This congruity is reflected in the Pearson r correlation of .6107 between these two variables.

The nature of this study was such that academic performance should be reflected in Discrepancy Scores. The positive Mean Discrepancy Score of each group (see Table 4) indicates that all groups are achieving above predicted levels. The Heavy drinking group may not be achieving as effectively as the Infrequent, Light, and Moderate drinking groups, but they are achieving above predicted levels. Relatedly, neither the T-test nor an analysis of variance yielded any significant information indicating a connection between level of alcohol intake and academic performance, as reflected by Discrepancy Scores.

A relationship between scores on the Short Michigan Alcoholism Screening Test and academic performance was not established by any of the data. Therefore, no conclusions can be validly made regarding a relationship between the development of alcohol-related problems and an inability to perform academically at expected levels.

Although no connection can be made between SMAST scores and academic performance, some information of value was provided by the examination of the interaction of variables with SMAST scores. Multiple T-tests performed on Mean SMAST scores of the groups Abstainer, Infrequent, Light, Moderate, and Heavy indicated there

was a significant difference between the Mean SMAST score of those subjects in the Moderate drinking group and those in the Heavy drinking group. The obtained T-value of -2.82 was significant at a $.006$ level. If the SMAST score is an accurate reflection of alcohol-related problems, we may conclude that Heavy drinkers in this study are significantly ($p < .01$) more likely than Moderate drinkers to develop alcohol-related problems.

Hypothesis 9, which was not rejected by the data, dealt with the correlation between number of drinks per week and Discrepancy Scores. As indicated earlier, an inverse correlation was found between number of drinks per week and Discrepancy Score, Attained GPA, and Predicted GPA (see Table 3). As the number of drinks per week rises the Discrepancy tends to recede. If the Discrepancy Score is an accurate reflection of academic performance, we may conclude that academic performance tends to decrease with a corresponding increase in the amount of drinking per week. There does then seem to be a corresponding relationship, but not necessarily a causal relationship between variables. It also must again be noted that this relationship is not statistically significant ($p < .01$).

Regarding the variables Predicted GPA and Attained GPA we can conclude that as number of drinks per week rises the numerical value of both variables will recede. It is also important to again note that Predicted GPA and Attained GPA correlate with one another and that the correlation of both variables with a third is logical. The correlation between number of drinks per week

and Attained GPA was significant at a .01 level. This may lead one to conclude that the more an individual drinks the less likely he/she is to attain a high GPA. However, this relationship cannot be assumed as it is already known that those individuals with low Attained GPAs also tend to have lower aptitude as reflected in Predicted GPA.

Several chi-square comparisons between males and females were also conducted as part of this study. If relationships between variables are tested at a .05 level, it may be concluded from the data that males are significantly ($p < .05$) more likely to be categorized as a Heavy drinker than are females. Chi-square analysis also revealed that males were significantly ($p < .05$) more likely to have scored 2 or more points on the SMAST. These findings are consistent with those reported in the related literature section of this study. Males tend to consume alcohol in greater amounts and with more resulting problems than do females.

The related literature section of this study also reported on several studies examining the quantity and frequency with which students imbibe alcohol. How do the subjects of this study compare with other students regarding this area? Compilation of the results of the questionnaire used in this study indicated that 98% of respondents drank at least once a year, 60% of respondents drank at least once a week, and 32% of respondents drank heavily (14 or more drinks per week). Straus and Bacon (1953) had concluded that less than 20% of the men and 10% of

women they studied drank more than once a week. More recently, Ruth Engs and David Hanson (Ingall, 1983) have reported that in their nation-wide study, 76.1% of Freshmen drank, and 23.1% drank heavily. Chen et al. (1982) in their campus-wide study of University of Wisconsin-La Crosse undergraduates identified 13% of respondents as heavy drinkers (15 or more drinks per week). Hinrichs and Haskell (1978) had indicated that "those Freshmen who drink consume considerably more than upperclassmen who drink" (p. 560). The results of this inquiry, when compared with Chen et al.'s data, indicate findings consistent with Hinrichs and Haskell. Freshmen at UW-La Crosse appear to be drinking more than the national average, and also more than other undergraduates at UW-La Crosse. } 1.

The tabulation of SMAST scores indicated that 25% of respondents showed some indications of alcohol-related problems. This is consistent with the findings of Cannel and Favazza (1978). Cannel and Favazza (1978) used the MAST (Selzer, 1971) as a screening device for alcohol and drugs at a large state university and concluded that 25% of respondents had "some difficulty" with alcohol and/or drugs. Although Cannel and Favazza screened for both alcohol and drug related problems, their figures and those of this study indicate a similar level of problems.

The use of the SMAST in this study also revealed that nearly 10% of those surveyed showed definite alcohol problems. Wright and Moore (1982) reported that 8.9% of the males and 3.3% of the

females they surveyed admitted to a drinking problem. Engs and Hanson (Ingalls, 1983) also reveal in their preliminary report that 7.4% of those surveyed realize they have a problem with alcohol. The results of the SMAST tabulations indicated slightly more problem drinkers among UW-La Crosse Freshmen than were indicated by Wright and Moore (1982) or by Engs and Hanson (Ingalls, 1983).

Conclusions

The following conclusions have been drawn from the findings of this study:

1. The statistical test of Null Hypotheses 1-3 indicated no relationship between scores on the Short Michigan Alcoholism Screening Test and Attained GPA, Predicted GPA, or Discrepancy Score.
2. Null Hypothesis 4 was not testable.
3. The statistical test of Null Hypotheses 5-8 indicated that none could be rejected at a .01 level of significance. However, there does appear to be a greater than chance difference between Infrequent and Light drinkers and Heavy drinkers on the variables Attained GPA and Predicted GPA. That difference indicated that the Infrequent and Light drinkers tended to have higher Attained and Predicted GPAs.
4. Test of Null Hypothesis 9 indicated no significant relationship ($p < .01$) between number of drinks per week and Discrepancy Score. However, there is a significant negative

correlation between Attained GPA and Predicted GPA and number of drinks per week. As number of drinks per week rises, Attained and Predicted GPAs tend to fall.

5. Although the Heavy drinking group tended to perform less effectively than the Infrequent, Light, and Moderate drinking groups, the Mean Discrepancy Scores of all groups indicated all groups were achieving above predicted levels.

6. No significant relationship could be determined between level of alcohol intake and academic performance as measured by Discrepancy Scores.

7. The Heavy drinking group's Mean SMAST score is significantly higher ($p = .006$) than the Moderate drinking group's.

8. Chi-square comparisons of male and female subjects indicated that males were significantly ($p < .05$) more likely to be grouped as a Heavy drinker, and also significantly more likely to score 2 or more points on the SMAST than were females.

Recommendations

As a result of this study the following recommendations were made:

1. Data indicating Heavy drinkers tend to have lower Attained GPAs, lower Predicted GPAs, and lower Discrepancy Scores than other identified groups seems to indicate that this group may be more prone to academic difficulties and attrition. It is recommended this group be studied in this context.

2. The best method for studying the relationship between

patterns of alcohol consumption and academic performance seems to be a longitudinal study which would examine the nature and rate of changes among a selected group over the length of their college enrollment. Such a study is recommended.

3. High school students should be studied to determine if there is a relationship between patterns of alcohol or drug use and academic performance. An earlier pattern of alcohol or drug related problems may predate an individual's entrance to a university. An early pattern of alcohol or drug abuse may affect academic performance in high school, which in turn would alter the data by which university personnel form expectancies and make predictions regarding success or failure in college.

4. Freshman males are apparently drinking heavier and with more resulting problems than Freshman females. It is recommended this group receive special study to determine the nature and extent of these problems in comparison with upperclassmen of both sexes.

Limitations

This section will address the limitations of this study.

One problem encountered in the use of the Short Michigan Alcohol Screening Test was the apparent existence of "false positives." In other words, the SMAST may have mistakenly identified respondents as having a possible alcohol problem when in fact none existed. The analysis of the Abstaining and Infrequent drinking groups indicated that 4 of the 6 subjects

who were identified as having possible problems were so identified because of their responses to items 1 and 4 (see Appendix C) regarding the "normalcy" of their drinking. It might be concluded that these individuals felt they were abnormal because they did not drink frequently enough, rather than because they felt they drank too often, or to excess. Some data may also have been skewed by this misidentification. This also creates questions regarding the validity of the SMAST.

Also, as indicated earlier, there are a number of variables which are related to academic performance which were not researched by this study. Additionally, there are a number of variables which correlate with patterns of alcohol consumption which may have confounded the data. Control of these various personality, demographic, and environmental variables was attempted through the random selection of subjects.

The existence of drop-outs may also have affected this study. Perhaps those with alcohol-related problems, or those who drank heavily had dropped out of school prior to the implementation of this study. There may be a pre-selection process which narrowed the population of this study.

An additional concern is that alcohol abuse may have already affected high school grades and ACT scores of respondents prior to their college enrollment. This in turn would have affected this study's predictions regarding expected levels of performance. This study may have attempted to measure a phenomenon which had already taken place.

A final limitation of this study was the size of the sample. Although a 15% random sample was taken, the category Abstainer had only two respondents, and the category Infrequent had only one male respondent. A larger sample would have allowed for better analysis between and among variables.

CHAPTER FOUR

SUMMARY

The purpose of this study was to determine if there is a significant, verifiable relationship between (1) level of alcohol intake, and (2) scores on the Short Michigan Alcoholism Screening Test (SMAST) and the academic performance of University of Wisconsin-La Crosse Freshmen. The subjects of this research consisted of 60 male and 96 female undergraduates enrolled full-time during Semester II of the 1982-83 academic school year.

Subjects were mailed a two part questionnaire, tabulation of which allowed a respondent to be classified as an Abstainer, Infrequent, Light, Moderate, or Heavy alcohol user. Tabulation of the questionnaire also gave each student a SMAST score, which was a measure of a respondent's alcohol-related problems.

Academic performance was defined as the congruity between Predicted Grade Point Average (GPA) and Attained Grade Point Average. Predicted GPAs were determined through the use of ACT data. Overall GPA at the end of Semester II (1982-83) was obtained from the Registrar's Office. By subtracting Predicted GPA from Attained GPA a Discrepancy Score was also obtained. A negative Discrepancy Score indicated achievement below predicted levels. A positive Discrepancy Score indicated achievement above predicted levels.

Nine null hypotheses were developed using available variables. Pearson's r technique indicated no significant correlation ($p < .01$) between SMAST scores and Predicted GPA, Attained GPA, or Discrepancy Scores. Analysis of variance indicated no significant ($p < .01$) differences in Mean Predicted GPA, Mean Attained GPA, or Mean Discrepancy Score among Abstainers, Infrequent, Light, Moderate, and Heavy alcohol users. When groups were subgrouped according to sex, no significant differences were indicated. None of the nine proposed hypotheses were rejected by the data.

The evidence from this study indicated no significant relationship between level of alcohol intake or scores on the SMAST and the academic performance of Freshmen at the University of Wisconsin-La Crosse. However, there were significant ($p < .01$) indications that Heavy drinkers were more likely to evidence possible alcohol-related problems (2 or more points on the SMAST) than were Moderate drinkers. There were also consistent indications that the more a student drinks the lower his Attained and Predicted GPAs. Relatedly, although a Heavy drinking student's academic performance was not significantly affected by his alcohol intake, the data did seem to indicate that the more a student drinks the less effective his/her academic performance. Lastly, when Freshman males and females are compared, Freshman males are significantly ($p < .05$) more likely to be classified as a Heavy drinker, and also significantly ($p < .05$) more likely to evidence possible alcohol-related problems (2 or more points on the SMAST).

In conclusion it was suggested that the relationship between alcohol usage and academic performance receive a greater amount of study within the university setting and in high schools.

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APPENDIX A

Mark Morris
C/O Mike Holler
UW-L Housing Office

Dear Student,

I'm a graduate student doing a Master's Thesis relating to alcohol use and possible alcohol related problems at UW-La Crosse. You've been randomly selected to participate in a survey regarding such. I realize that you are very busy at the end of the semester, but completion of the survey should take you no more than 5 minutes. I need your help for this research project to succeed.

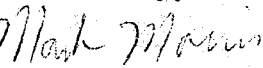
The survey consists of two parts. The first part asks you a couple of questions about the frequency and amount you drink. The second part asks if you've experienced any of a variety of alcohol related problems.

The survey has been coded so that data can later be tabulated in group form. Let me assure you of the confidentiality of your responses.

The problem is an important one and a good percentage of respondents is necessary to validate my research. Please complete the survey and either drop it in Campus Mail, or drop it off at the Housing Office. Please use the preaddressed envelope which has been provided.

Your cooperation is very much appreciated.

Sincerely,



Mark Morris

APPENDIX B

Mark Morris
C/O Mike Holler
UW-L Housing Office

Dear Student,

About a week ago you should have received a letter and a questionnaire from me regarding a research project that I'm working on as part of my Master's Thesis. The project relates to alcohol use and possible alcohol related problems at UW-La Crosse. As part of my research I'm administering a short questionnaire to a random sample of Freshman. You were one of those selected at random for this research project.

If you have already completed the prior questionnaire, please disregard this letter. If you haven't completed a questionnaire, please complete the enclosed questionnaire and return it to the Housing Office. A substantial amount of those surveyed must return the questionnaire to validate my research.

Completion of the survey should take no more than 5 minutes. The survey has been coded so that responses can later be tabulated in group form. Let me assure you of your confidentiality.

Please complete the survey and either drop it in Campus Mail, or drop it off at the Housing Office. Please use the preaddressed envelope.

I need your help for this research project to succeed. Thank you for your time and participation.

Sincerely,

Mark Morris

Mark Morris

MM

APPENDIX C

I would first like to determine how often, on the average, you drink alcohol. Please read through items a, b, c, and d and check that response which best characterizes the frequency with which you drink.

- a. If you drink less than once a year or not at all, place a check here.
- b. If you drink at least once a year but less than once a month, place a check here.
- c. If you drink at least once a month but less than once a week, place a check here.
- d. If you drink at least once a week place a check here and circle the number below which best indicates the number of times you do drink per week.

1 2 3 4 5 6 7 8 9 10 11 12 13

Assuming one 12 oz. beer = one drink; one 5 oz. glass of wine = one drink; and one mixed drink or shot = one drink. Please indicate how many drinks, on the average, you usually consume at one occasion.

- a. I don't drink
- b. 1 drink or less
- c. 2 drinks
- d. 3 drinks
- e. 4 drinks
- f. 5 drinks
- g. 6 drinks
- h. 7 drinks
- i. 8 drinks
- j. 9 or more drinks

PART II

Please respond with a Yes or a No to the following 14 questions. Check Yes if that item truthfully applies to you, No if it does not.

YES NO

1. Do you feel you are a normal drinker?
2. Does your wife/husband a parent or other near relative ever worry or complain about your drinking? ✓
3. Do you ever feel guilty about your drinking?
4. Do friends or relatives think you are a normal drinker?
5. Are you able to stop drinking when you want to?
6. Have you ever attended a meeting of Alcoholics Anonymous? ✓
If as a visitor or guest indicate No.
7. Has your drinking ever created problems between you and your wife/husband (girlfriend/boyfriend), a parent or other near relative?
8. Have you ever gotten into trouble at work because of your drinking?
9. Have you ever neglected your obligations, your family, your work, or your schooling for 2 or more consecutive days because of your drinking?
10. Have you ever gone to anyone for help about your drinking?
11. Have you ever been in the hospital because of drinking?
12. Have you ever been arrested for drunk driving, driving while intoxicated?
13. Have you ever been arrested, even for a few hours, because of other drunken behavior?
14. Are you presently involved in any treatment for a drinking problem (i.e. seeing a counselor or therapist, involved in group therapy or AA)?