RELATIONSHIPS AMONG AND BETWEEN ALCOHOL CONSUMPTION RATES, ALCOHOL EXPECTANCIES, AND EARLY RECOLLECTIONS AMONG THREE GROUPS OF COLLEGE MALES

DISSERTATION

Presented to the Graduate Council of the University of North Texas in Partial Fulfillment of the Requirements For the Degree of

DOCTOR OF PHILOSOPHY

By

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Denton, Texas

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Extensive documentation exists which firmly establishes the high use rates and disastrous consequences of alcohol consumption by university students. Use rates for this population have been linked to attitudes toward alcohol consumption, especially alcohol expectancies. Research to date on alcohol expectancies has shown differences in expectancies among various groups. However much of this research has been conducted without a theoretical basis, accomplishing little in explaining how beliefs and drinking behavior are related.

The investigation was designed to explore the relationships among and between early recollections and alcohol expectancies and to explore how the contents of early recollections function in relation to expectancies in terms of alcohol consumption patterns among three groups of college males (student-athletes, fraternity men, and independents). The content of individuals' early recollections was analyzed and compared to expectancies and consumption rates for each of the three groups. The study addressed seven hypotheses regarding alcohol consumption rate comparisons, comparisons of consequences experienced as a result of alcohol consumption, comparisons of alcohol expectancies, and comparisons of reported content of early recollections. Multiple
regression analysis was utilized to test the extent to which select early recollections and alcohol expectancy scores contributed to the explained variance in alcohol consumption patterns.

Results demonstrated that early recollections contributed to the understanding of expectations of the effects of alcohol within specific groups on campus. Combined with alcohol expectancies, early recollections contributed to the explained variance in alcohol consumption patterns. Based on the results of the study it was recommended that Adlerian theory be used as a basis for understanding alcohol abuse and in planning prevention programs.

This study recommended further research combining alcohol expectancies, early recollections, and a social interest measurement to determine a more complete theoretical model of alcohol consumption patterns. Further investigation of the effectiveness of theoretically based prevention activities aimed at specific target groups focusing on underlying issues was also recommended.
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In 1994, the Center on Addiction and Substance Abuse at Columbia University (CASA) published a report by the Commission on Substance Abuse at Colleges and Universities substantiating a commonly held belief, that “binge drinking is the number one substance abuse problem in American college life” (Commission on Substance Abuse at Colleges and Universities, 1994, p. i). The report goes on to state that “what was once regarded as a harmless ‘rite of passage’ has in the 1990's reached epidemic proportions” (Commission on Substance Abuse at Colleges and Universities, 1994, p. i). In a national study involving 59,539 students enrolled at 125 four-year colleges conducted by the Office of Measurement Services at the University of Minnesota for the U.S. Department of Education, 92% of students responded positively to current use of alcohol while 23% reported drinking at least three or more times per week. The percentage of students who reported binge drinking, having had five or more drinks at one sitting in the last two weeks, was 44%. Thus, almost half of the respondents in this national survey admitted to having a “binge drinking” episode within the last two weeks (U.S. Department of Education, 1994).

Other research confirms the percentage of binge drinkers as well as relating students' drinking habits to harmful consequences which interfere with the students' having a positive college experience (Wechsler, Austin, & DeJong, 1996; Wechsler, Dowdall,
Davenport, & DeJong, 1996; Wechsler, 1995). Health issues, crime, and poor academic performance have all been linked to alcohol abuse (Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994). One university reports that cases of alcohol poisoning have doubled over the past decade. Nationally, emergency room admissions for alcohol poisoning have increased by 15% in college campus communities (Celis, 1991). Ninety percent of hazing accidents that result in death have been shown to be related to alcohol abuse (Eigen, 1991). Ninety-five percent of violent crime on campus has proved to be alcohol-related (Student Right-to-Know and Campus Security Act, 1990). Eighty percent of all vandalism on campus has been related to alcohol abuse (Eigen, 1991). Alcohol has been implicated in as many as 41% of academic problems and 28% of all dropouts (Anderson, 1992). One of the most comprehensive national studies shows that grade point average is negatively correlated with the average number of drinks consumed per week (Presley, Meilman, & Lyerla, 1991; Presley, Meilman, Cashin, & Lyerla, 1996). The CASA report goes on to state that “excessive alcohol use on campus is a primary factor in almost all rapes, assaults, unprotected sex and resulting STDs, acts of vandalism, and ‘accidental’ deaths, not to mention racial conflict and violence” (Commission on Substance Abuse at Colleges and Universities, 1994, p. 23).

Additionally, the CASA report found that abusive drinking by some students has a substantial ripple effect on the entire campus community. The Harvard National Study, conducted in 1993, found that at “high-binge” schools (schools where more than half the student body are classified as “binge drinkers”) nine out of ten students living on campus reported having suffered some ill effect, such as fights, assaults, and property damage,
because of others’ drinking, and nearly 70% had had their studying or sleep interrupted (Wechsler, 1995). By increasing medical costs, crime rates, and decreasing academic performance, binge drinking has been shown to damage a college’s reputation and prestige, thus affecting the bottom line. The 1994 edition of Money Guide: Best College Buys Now advises that prospective students and their parents should favor colleges and universities that actively attempt to prevent alcohol abuse. As college tuition increases, consumers are becoming more cautious about how their money is spent and are placing more demands on college administrators to control alcohol abuse and its effects.

Most schools have taken action to curtail alcohol abuse, through policies that limit use and impose sanctions and/or prevention programs that support positive-health activities. More than 95% of institutions of higher education have initiated some type of substance abuse policies and prevention programs (Anderson, 1994). Prior to 1994, the U.S. Department of Education spent approximately $10 million per year in grants through the Fund to Improve Post-Secondary Education (FIPSE) for start-up costs to create programs to prevent substance abuse. Even though prevention programs have increased in number and have become more sophisticated in their efforts, student binge drinking has remained virtually unchanged (DeJong, 1996). While many programs have proved to be successful in increasing knowledge and awareness, attitudes and behaviors have remained the same. Although moderate success has been achieved by some of these programs, success has often been limited and difficult to prove. Even for the few projects that have demonstrated successful outcomes through proper evaluation, there is still no clear model or theory which universally guides campus efforts to control alcohol abuse (Austin, 1997).
Recently, research on alcohol use has placed much emphasis on expectancies being the mediator of the effects of alcohol. Studies have shown that the general population has many common beliefs concerning the effects of alcohol and that these beliefs influence behavior (Leigh, 1989; see Critchlow, 1986, for a review). Alcohol expectancies, beliefs about how individuals expect alcohol to affect them and others, have been linked to the initiation and maintenance of drinking behaviors for a cross section of the population (Maisto, Connors, & Sachs, 1981; Brown, 1985; Goldman, Brown, & Christiansen, 1987; Cooper, Russell, & George, 1988). Leigh (1989a) succinctly summarizes how expectancies influence drinking behavior:

> Briefly, the decision to initiate a drinking episode is assumed to be driven at least partly by the individual's belief that alcohol will serve certain functions or result in certain desirable consequences, such as relief from tension or enhancement of mood. Drinking behavior is then maintained by ongoing expectations of alcohol's ability to result in these desired outcomes. (p. 362)

However, according to Leigh (1989a), expectancy research has neglected to draw upon theory, either within the field of alcohol studies or outside of it.

The Individual Psychology of Alfred Adler has been suggested as a model to understand substance abuse (Steffenhagen, 1974, 1977, 1983; Hafner, Fakouri, & Labrentz, 1982; Cooley, 1983). Individual Psychology states that feelings and actions come after thought and that thought is based on beliefs which the individual interprets from experience. These interpretations provide the general direction the individual will take in attempting to reach private goals of how to significantly fit into society. Because
of feelings of inferiority, which are common, normal and functional, the individual is motivated to compensate in some creative way for those aspects of self which the individual believes are "less than." The individual believes that if the fictional goals were reached, fulfillment would be achieved. The striving for the fictional goals can be dichotomously broken down into either useful striving (of social concern) or useless striving (of personal interest) (Manaster & Corsini, 1982). The totality of these dynamics is referred to as the individual's unique style of life.

In order to get a picture of the individual's present life philosophy, Individual Psychology utilizes early recollections. Early recollections (ERs) serve to reinforce the individual's perception of self, the world, and the relationship between self and environment. According to Adler (Ansbacher & Ansbacher, 1956), memories are the reminders a person carries to be mindful of personal limitations and of the meaning to attribute to circumstances. Consequently, if early memories represent the interpretation of one's experience, then it follows that early recollections give hints and clues to one's beliefs about self, the world and one's place in that world. Through the use of early recollections one may gain an understanding of the beliefs underlying repetitive behavior patterns (Taylor, 1975), including alcohol consumption.

Thus, evidence shows that alcohol is a major problem among college students. Alcohol expectancies have proved to be mediating variables in the initiation and maintenance of drinking behaviors. It has also been demonstrated that the content of ERs represents an individual's beliefs about self, other, and the surrounding environment, whereas expectancies indicate beliefs about alcohol and the goals one is attempting to
reach through its use. It could be extrapolated from this information that ERs are related
to drinking behaviors and therefore could be useful in the prevention and treatment of
alcohol abuse on college campuses. Therefore, the current investigation focused on
exploring the possible links between alcohol consumption patterns, beliefs about the
effects of alcohol, and early recollections.

Statement of the Problem

The use and abuse of alcohol is a major problem on college campuses across
America. Students are experiencing harmful consequences as a result of alcohol
consumption such as injuries, disease, acquaintance rape, loss of relationships, and loss of
academic good standing. Despite efforts to prevent substance abuse on campus, the
prevalence of drinking and the negative consequences experienced as a result of abuse
remain relatively constant. Research exploring this phenomenon, while exhaustive in
scope, has neglected theory both from the field of alcohol studies and outside of it, making
interpretation and application difficult and inconsistent. Thus, from a theoretical point of
view, there exists a need to understand the underlying beliefs related to alcohol
consumption patterns among college age students in an attempt to improve prevention
efforts.

Purpose of the Study

The purpose of the study was to ascertain and describe relationships among and
between self-reported alcohol consumption rates, alcohol-related consequences,
expectations concerning the effects of alcohol consumption, and the content of ERs among fraternity men, male student-athletes, and men indicating involvement in neither intercollegiate athletics nor a social fraternity. Furthermore, the study sought to explore how the contents of ERs and alcohol expectancies contribute to the prediction of alcohol consumption patterns among these three groups. As Leigh states, "If beliefs about alcohol affect behavior, it becomes important to look more closely at how these beliefs develop and how they function" (Critchlow, 1986, p. 751). Perhaps ERs can aid in understanding how student beliefs about alcohol function in relation to beliefs about self, others, and the environment, which in turn affect drinking behavior.

Literature Review

Prevalence

One of the major issues facing student service personnel is the use and abuse of alcohol by college and university students (Boyer, 1987; Ingalls, 1982). Although most high school students experiment with alcohol, there is a substantial increase in the frequency and level of consumption when students get to college (Johnston, O'Malley, & Bachman, 1994). In 1989, a survey of college and university presidents found that 67 percent rated alcohol abuse to be a "moderate" or "major" problem on their campus (The Carnegie Foundation for the Advancement of Teaching, 1990). While many colleges have worked hard at reducing excessive alcohol consumption on their campuses, the number of heavy drinkers seems to remain fairly constant. While there has been an overall decline in drinking in American society as a whole, recent studies have shown no proportionate
decline among college students (Wechsler, 1995). Extensive documentation still exists which firmly establishes the high use rates and disastrous consequences of alcohol abuse by university students (Berkowitz & Perkins, 1986; Meilman, Stone, Gaylor, & Turco, 1990; Presley, Meilman, & Cashin, 1996; Wechsler, Austin, & DeJong, 1996; Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994; Wechsler & McFadden, 1979). The National Institute for Drug Abuse (NIDA) reported that 93% of all college students drink alcohol (Bradley, 1991). Meilman, et al. (1990), found that 97% of their 1987 undergraduate sample had used alcohol in the last year. Twenty percent of the total sample indicated drinking “once a month or more but less than weekly”; 63% indicated drinking “once a week or more but less than daily”; while 5% reportedly drank “daily or almost daily.” Males in this study appeared to drink more frequently than did females. Seven percent of the males reported “daily or almost daily” use compared to 1.5% of the females. Sixty-nine percent of the males reported “once a week or more but less than daily” use compared to 53% of the females. Less than weekly use was reported by approximately 25% of the males and 45.5% of the females in this study.

More recently, Presley, Meilman, & Cashin (1996), sampling 42,137 students from 89 institutions across America, found that 84.6% of their 1994 undergraduate sample had used alcohol in the last year. Approximately 22% of the total sample indicated drinking once a month or more but less than weekly; 40% indicated drinking once a week or more but less than daily; while 1% reportedly drank daily or almost daily. Males in this study appeared to drink more frequently than did females. Almost 2% of the males reported daily or almost daily use compared to 0.5% of the females. Forty-eight percent of the
males reported once a week or more but less than daily use compared to 33% of the females. Less than weekly use was reported by approximately 34% of the males and 49.5% of the females in this study.

While there seems to be a trend toward moderation, examining the frequency of drinking episodes alone does not sufficiently describe alcohol use on campus. Most studies include quantity of use as well as prevalence and frequency (Berkowitz & Perkins, 1987). In the Meilman, et al. (1990) study, males indicated that they consumed twice as much alcohol as did females, 10.3 drinks per week compared to 4.9 drinks per week ($t=5.485$, 341 df, $p<.0001$). At Stanford, Chervin and Martinez (1987, cited in Meilman, et al., 1990) found that the mean number of drinks per drinking occasion was highest among undergraduate males and lowest among graduate females.

The disparity between the genders regarding alcohol consumption was also demonstrated by Presley, Meilman, & Cashin (1996), who found that while 4.4% of the total sample indicated drinking 21 or more drinks per week, only 1.4% of the females reported this level of consumption while 8.5% of the males reported drinking at this level. The disparity continues, with 18% of the males reportedly drinking 10 to 20 drinks per week while 8.2% of the females reported drinking this much. Forty-two percent of the males reported drinking one to ten drinks per week while 46% of the females reported drinking this quantity. Approximately 31% of the males reported abstaining from alcohol the previous year while 44.6% of the females indicated abstaining.

Although male college students appear to drink more alcohol and drink it more frequently than do their female counterparts, implications concerning gender differences
should be offered cautiously (Brennan, Walfish, & AuBuchon, 1986). Berkowitz and Perkins (1985, cited in Berkowitz & Perkins, 1987) found that most of the subjects in their study, whether male or female, had relatively similar light-to-moderate alcohol use patterns. However, a subset of the males exhibited extremely high consumption rates which tended to skew the mean of the male group. Another rationale for offering cautious implications about gender differences in alcohol consumption concerns differences in body weight between males and females. Ratliff and Burkhart (1984) found that when body weight differences were statistically controlled for, differences in alcohol intake scores between males and females became nonsignificant. The extreme variation in same-sex groups, combined with data suggesting that gender differences are confounded, has lead many investigators to believe that understanding differences in individual behavior is best accomplished by studying variations among same-sex groups rather than variations based along gender lines (Lott, 1985; Berkowitz & Perkins, 1987; Hanson, 1974).

**Consequences**

While differences in alcohol consumption patterns between male and female college students may be debatable, gender differences in problems related to drinking alcohol have been more consistent (Berkowitz & Perkins, 1987). Such problems often include verbal and physical altercations, property damage, negative effects on grade point average and health, damaged relationships, or trouble with authorities (Berkowitz & Perkins, 1986). Ratliff & Burkhart (1984) found that college males were more likely to experience problems related to aggressive behavior, trouble with authority figures, and
relationships as a result of their drinking alcohol than were college females. Hughes & Dodder (1983) also found more males experiencing problems related to drinking than females. Experiencing problems in relationships was reported by 41% of the males and 34% of the females; 38% of the males and 23% of the females reported engaging in either physical or verbal altercations, and 29% of the males and 17% of the females reported that they had been criticized for their drinking.

Wechsler and McFadden (1979), in their study of 7,000 college students in New England, asked subjects to check which of eight possible negative consequences they had experienced as a result of drinking alcohol and found that twice as many men as women had experienced at least six of the eight consequences. Forty-two percent of the males often “did or said something they would not otherwise do or say” compared to 36% of the females. Twenty-four percent of the males had gotten into trouble with authorities while only 6% of the females reported this consequence. Approximately 21% of the males reported physical fights as a result of drinking alcohol while only 2% of the females reported fighting. Accidents involving some type of injury were reported by 19% of the males and 6% of the females. Even when differentiations are made between heavy and light drinkers, based on “frequent heavy intoxicated” (FHI; drinking at least weekly, 5 or more drinks per occasion) criteria, males have reported experiencing more negative consequences than did like drinking females (Engs, 1977; Wechsler & McFadden, 1979; Ratliff & Burkhart, 1984).

Presley, Meilman, & Cashin (1996) found that while approximately the same proportion of females and males, 25%, reported experiencing two to five hangovers the
previous year, 26.5% of the males reported experiencing six or more hangovers while only 14.3% of the females reported experiencing this many. Approximately 27% of the males reported poor test performance as a result of drinking whereas 18.6% of the females reported their drinking as negatively affecting test performance. Driving a car while under the influence at least once during the previous year was reported by 40.2% of the males and 27.1% of the females. Interestingly, 10.6% of the males and 12% of the females reported that during the previous year they had been taken advantage of sexually as a result of drinking alcohol.

Implications concerning these gender differences should again be offered cautiously as biases in “alcohol survey questionnaires towards the more visible, socially disruptive negative consequences common among men” (p. 23) may have caused under reporting of consequences experienced by women (Berkowitz & Perkins, 1986). Few of the studies prior to 1990 addressed the issue of unwanted sexual contact as a result of drinking alcohol, which may have effected the negative consequences rates for the females as alcohol consumption has been positively related to incidences of coercive sex and date rape (Miller & Marshall, 1987; Muehlenhard & Linton, 1987). Because of this, the more recent surveys conducted by Presley, Meilman, & Cashin (1996) and Wechsler (1995) included consequences related to unwanted sexual activity as well as consequences experienced as a result of someone else’s drinking.

Even though students may be experiencing negative consequences, many continue to deny the existence of a drinking problem. Wechsler and Rohman (1981), using the same data as Wechsler and McFadden (1979), found that even though over half of the
student drinkers in their study who were classified as FHI reported experiencing
blackouts, fights, and other negative consequences, only 5% believed they might have a
problem with alcohol. Sixty-eight percent of the FHI subjects considered themselves to be
"moderate" drinkers. This perception of one’s problematic drinking behavior not being
problematic has been attributed to peer group norms for such subgroups as heavy
drinkers, student-athletes, fraternity men, and sorority women (Flynn & Shoemaker, 1989;
adolescent and young adult consumers often choose friends with similar drinking styles,
perhaps frequent heavy drinkers have peer reference groups which reinforce perceptions
of their own behavior as normative or moderate" (p. 23). However, additional research is
needed to investigate variations between peer groups in order to more fully understand
how expectations and norms effect alcohol-related behaviors.

At-Risk Groups

One group on the college campus which has consistently been perceived as a heavy
consumer of alcohol is the Fraternity system, especially fraternities. In fact, the single best
predictor of abusive alcohol consumption in college is fraternity membership (Wechsler, et
al., 1994). At one Southern university, investigators studying the pattern of alcohol use
among 903 undergraduates found that heavy drinkers, again using FHI criteria, were
primarily White males from each academic level and fraternity members (Haworth-
Hoeppner, Globetti, Stem, & Morasco, 1989).

Fraternity membership was also found to be a significant predictor in the drinking
behavior of 98 men attending a private Midwestern college (Alterman, Hall, Purtil, Searles, Holahan, & McLellan, 1990). Using correlation statistics to determine which variables significantly related to five dependent measures of drinking behavior (frequency of drinking, frequency of intoxication, number of drinks consumed per drinking day, ounces of alcohol consumed daily, and number of negative consequences experienced related to alcohol consumption), Alterman, et al. (1990), found illicit drug use (cocaine, marijuana, amphetamines, barbiturates, and hallucinogens) to be the most consistently correlated variables to drinking variables with correlations ranging from 0.34 to 0.52 (p<0.01). Scores from the Sensation Seeking Scale were also found to be consistently related to the five drinking variables, with correlations ranging from 0.20 to 0.47 (p<0.05). Fraternity membership correlated with three of the five drinking variables, frequency of drinking (r=0.30, p<0.01), ounces of alcohol consumed (r=0.29, p<0.01), and number of negative consequences (r=0.23, p<0.05). Stepwise multiple regression analysis yielded five variables, fraternity membership, drug use, smoking, use of alcohol before 15 years of age, and having a family member who had an alcohol problem, accounting for 51% of the total variance in drinking behavior.

Klein (1989), in examining 526 undergraduate students as to what types of students experienced alcohol-related problems, found that “men, Greek organization members, and fraternity house residents” were at the greatest risk. By using regression analysis to discern which variables were related to problem-drinking status, men were found to report significantly more alcohol-related problems than their female counterparts, 5.3 and 3.7 problems respectively (p<0.001). Students belonging to social fraternities
reported experiencing an average of 6.6 problems related to alcohol while students not belonging to a social fraternity reported an average of 3.6 problems (p<.0001). Those students who lived in fraternity houses were found to experience nearly twice as many alcohol-related problems as were students living in on-campus apartments, 8.4 compared to 4.5 (p<.0001). Fraternity house residents were also found to experience nearly three times as many alcohol-related problems as were residence hall dwellers, 8.4 compared to 3.9 (p<.0001).

Utilizing data from the 1993 Harvard School of Public Health national survey, Wechsler, Kuh, & Davenport (1996) found that place of residence, not just membership in a social fraternity, substantially influenced drinking behaviors. Eighty-six percent of fraternity house residents engaged in binge drinking (previously FHI), compared to 71% of non-resident fraternity members, and 45% of the non-fraternity men. More than half of the residents of fraternity houses reported experiencing a hangover, doing something they later regretted, missing a class, or forgetting where they were or what they did since the beginning of school. Almost twice as many fraternity house residents as non-fraternity men reported getting behind in school work, arguing with friends, engaging in unplanned sexual activity, damaging property, not using protection when participating in sex, or getting hurt or injured since the beginning of the school year. In fact, 45% of fraternity house residents experienced five or more alcohol-related problems, compared to 31% of non-resident fraternity members and 17% of non-fraternity men. Again, it seems that research substantiates the perception of fraternity members as heavy drinkers who experience many negative consequences as a result of their drinking behavior.
Another group on the college campus which is perceived as being closely associated with heavy alcohol consumption is the intercollegiate athletic team. "From Babe Ruth's well-known overindulgence, to the more recent stories in our sports pages of athletes arrested for drunk driving, to the ritual of getting sloshed after a big win -- the image of the hard-playing, hard-drinking jock persists" (Bradley, 1991, p. 14). College student-athletes must deal with all of the usual pressures of college life in addition to training and competition, which may make them more susceptible to alcohol abuse. Research exists which documents that students participating in intercollegiate athletics experience similar, if not greater, problems associated with alcohol abuse as do their non-athlete counterparts. Nattiv and Puffer (1991) compared the lifestyle and health risk behaviors of college student-athletes (n=109) and non-athletes (n=107) using chi-square to test for differences. Results from this study, while not reported by gender group, suggest that student-athletes had a significantly higher proportion of alcohol related behaviors which put them "at risk," including quantity of alcohol consumed (p<.002), driving while intoxicated (p<.001), and riding with an intoxicated driver (p<.002). The existence of a family history of alcohol and/or drug abuse was also significantly higher in the student-athlete group (p<.032). According the United States Department of Health and Human Services (1990), one of the greatest risk factors for developing an alcohol problem is to be the son, daughter, or sibling of someone with an alcohol problem.

Results from the 1993 Harvard School of Public Health national survey indicate that 61% of men who were members of intercollegiate athletic squads reported binge drinking in the two weeks prior to the survey (Wechsler, Davenport, Dowdall, Grossman,
Among college males not involved in intercollegiate athletics, only 43% reported similar behavior. The study also found that a greater proportion of men involved in athletics engaged in a 'heavy drinking lifestyle' than those not involved in intercollegiate athletics. One quarter of the men who participated in intercollegiate athletics indicated that they had gotten drunk three or more times in the month preceding the survey, compared to 17% of those not involved in athletics. One-fifth of the men involved in athletics noted drinking to get drunk as their primary motivating factor, as opposed to 15% of their non-athletic counterparts.

Many authorities believe, however, that student-athletes do not use alcohol any more than do non-athletes. In studies conducted by Toohey (1978) and Toohey and Corder (1981), 91% of college athletes reported drinking alcohol while 90% of the non-athletes reported doing so. Looking at student-athletes from 11 different colleges and universities, Anderson and McKeag (1985) found that 88% had used alcohol in the last 12 months. The National Collegiate Athletic Association (NCAA) reports that athletes and nonathletes do not differ significantly with respect to alcohol use. Sixty-two percent of athletes surveyed in the Big Ten athletic conference reported regular alcohol consumption, which is comparable to general student population statistics (Vance, 1982).

Whether college male student-athletes drink more than non-athlete students or comparable amounts of alcohol, there is still reason to be concerned with this population. "The number one drug abuse problem among college athletes is alcohol," according to Gay, Minelli, Tripp, & Keilitz (1990, p. 81). Alcohol is detrimental to many skills essential to athletic performance such as coordination, consistency, physical acuity, and
memory. Gay, et al., (1990) also emphasize that alcohol use not only affects individual performance but can impact the whole team as well through disruption of trust, timing, and preparation.

Given this detrimental effect on performance, the "hard-drinking jock" perception persists in part due to what Phillips and Schafer (1970) call the "athletic subculture model." This model emphasizes the shared values, norms, beliefs, and symbols that relate to athletics and the manner in which these in turn are generalized to other aspects of the athlete's life outside the athletic arena. The athletic subculture "stresses conformity to conventional norms and standards of behavior and achievement as defined by traditional school and community authorities" (Snyder, 1975, pg. 192). For as long as alcohol consumption has remained linked with sporting endeavors, through advertisement, financial support, media hype, or tradition, the athletic subculture model has maintained mixed messages concerning the appropriateness of alcohol consumption by male college student-athletes (Bradley, 1991). "This is especially true when dealing with the student-athlete wherein role models have depicted alcohol use as a positive or correlative to athletic success," (Gay, et al., 1990, p. 84).

Alcohol Expectancies

The beliefs or expectations of how alcohol will affect one's mood or personality has received much attention recently in the literature. This recent emphasis in research on expectancies being the mediator of the effects of alcohol has shown that the general population has many common beliefs concerning the effects of alcohol and that these
beliefs influence behavior (Leigh, 1989a; see Critchlow, 1986, for a review). These beliefs are often set prior to personal experience with alcohol (Christiansen, Goldman, & Inn, 1982) and have been found to be present among both non-drinking and alcohol consuming adolescents and adults (Schafer & Leigh, 1996). Alcohol expectancies have been linked to the initiation and maintenance of drinking behaviors for a cross section of the population (Maisto, Connors, & Sachs, 1981; Brown, 1985; Goldman, Brown, & Christiansen, 1987; Cooper, Russell, & George, 1988). Leigh (1989a) asserts that expectancies influence drinking behavior by stating that the decision to engage in a drinking episode is assumed to be driven at least partly by an individual's belief that alcohol will serve certain functions or that the consumption of alcohol will result in specific desirable consequences, such as tension reduction or mood enhancement. Drinking behavior is then maintained by ongoing expectations of alcohol's ability to result in these specific desired outcomes.

MacAndrew and Edgerton (1969) were among the first to assert that the pharmacological effects of alcohol cannot account for all the changes in behavior that occur when individuals consume alcohol. This assertion came as a result of a cross-cultural study on drunken behavior which found that behavior varied from culture to culture and within the same culture across time. Thus, they concluded that the effects of alcohol are learned from one's culture, a hypothesis that was first supported by results from balanced placebo design studies (Marlatt & Rohsenow, 1980). Expectations of disinhibition, relaxation/tension reduction and social and sexual facilitation outcome expectancies are the most frequently generated positive outcome expectancies, while hangovers, cognitive impairment, sickness, expense, aggression, and academic problems
resulting from alcohol use are the most frequently mentioned negative outcome
expectancies (Wood, Sher, & Strathman, 1996).

Based on the hypothesis that use of alcohol is due to the belief that alcohol reduces
tension, Keane and Lisman (1980) utilized the balanced placebo design in investigating the
effects of instructional set on subjects’ anxiety after alcohol consumption. A group of shy
males (N=32) were either given alcohol or a placebo prior to interacting with a female
confederate. Half the subjects from each of these groups were informed that alcohol
would have a facilitative effect on their social interaction while the other half were
informed that alcohol would have a disruptive effect. Results showed that those subjects
given the negative effects of alcohol on social interaction were significantly more anxious
both prior to and after the interaction with the female confederate, even though
instructional set had no effect on performance or physiological reactions.

Other studies using the balanced placebo design to investigate various other
alcohol expectancies have shown that instructional set has had little to no effect on sexual
arousal for both men and women (Briddell & Wilson, 1976; Wilson & Lawson, 1976);
information processing and memory (Miller, Adesso, Fleming, Gino, & Lauerman, 1978;
Williams, Goldman, & Williams, 1981); physiologic sensations (Connors & Maisto, 1979;
Vuchinich, Tucker, & Sobell, 1979), and self-reported mood (Polivy, Schueneman, &

While earlier research took place in the laboratory utilizing a balanced placebo
design to investigate the effects of subjects’ cognitive set (Marlatt & Rohsenow, 1980,
Hull & Bond, 1986), more recent research has focused on the expectations surrounding
the drinking experience (Critchlow, 1986) in an effort to understand more fully the underlying cognitive factors which influence drinking behaviors.

Brown, Goldman, Inn, and Anderson (1980) developed one of the first instruments designed to “explore the domain of expectancies about the behavioral effects of alcohol consumption” (p. 420), the Alcohol Expectancy Questionnaire (AEQ). However, their study emphasized only the positive reinforcement effects of moderate consumption to provide a link with motivation for drinking. The development of the AEQ consisted of three phases. In phase 1, tape-recorded interviews with 59 females and 66 males, ranging in age from 15 to 60, of varying socioeconomic status, were conducted in the Detroit metropolitan area. Subjects' drinking patterns ranged from total abstinence to chronic alcohol abuse. These interviews were designed to elicit statements concerning each subject's expectations of the positive effects of consuming a moderate quantity of alcohol. Interviews were conducted in both group and individual format. Interview subjects were added until responses became repetitive. In phase 2, 400 individuals from the same population used in phase 1, completed a structured questionnaire based on refined interview statements. This questionnaire contained two hundred and sixteen items which were structured in an agree-disagree format. The agree response indicated the belief that "a couple" or "a few" drinks of alcohol produced a particular effect. Item analysis, using both conceptual and statistical criteria (r < .450), yielded 90 items which reflected strong, consistent alcohol effects. The final phase of development involved 246 males and 194 females enrolled in psychology classes at a university in Detroit. Eighty-seven percent of the subjects fell into the 18 to 30 age range while 70% indicated they were single.
Subjects completed, in order, the 90 item AEQ, a Demographic Data Sheet (DDS), and a Customary Drinking Record (CDR). Through the use of exploratory factor analysis, six factors emerged: 1) general positive transformation of experience, 2) enhancement of social and physical pleasure, 3) enhancement of sexual pleasure and performance, 4) increased power and aggression, 5) increased social assertiveness, 6) tension reduction. Of these six, two were inconsistent with factors found in the placebo-design research: alcohol as a general positive transforming agent and alcohol as a general pleasure enhancer.

Results of canonical analysis indicated that a significant relationship existed between drinking pattern and expectancy scores. Individuals who had a lengthy drinking history and heavy consumption pattern expected more sexual, aggressive, and assertive effects ($x^2 (78) = 346.62, p < .001$) while those who had a short history and minimal consumption had outcome expectancies related to the more general positive expectancies ($x^2 (60) = 149.61, p < .001$).

Results of a similar canonical analysis between factor scores and demographic variables showed that a significant relationship also existed between sex of subject and expected reactions to alcohol consumption. Females were more likely to expect alcohol to have a general positive effect ($x^2 (114) = 421.02, p < .001$) while males expected alcohol consumption to bring about aggressive and arousing behaviors ($x^2 (90) = 137.79, p < .001$).

Using the AEQ, Brown (1985) found that among college students (N=321) frequent but non-problematic drinkers (students not experiencing problems with university
officials) primarily expected social enhancement and physical pleasure to result from drinking alcohol. Problem drinkers (students who experience problems with university officials) expected similar results, however the main consequence expected was tension reduction. Using expectancy scores from the six scales of the AEQ in an effort to predict drinking patterns, multiple regression analyses for each of the three drinking patterns revealed that expectancies accounted for 22% of the variance ($R = .47$) in determining the frequent but non-problematic pattern, with the best single predictor being social/physical pleasure ($R = .41$). Expectancies accounted for 15% of the variance ($R = .39$) in determining the problem drinking pattern, with tension reduction being the single best predictor variable ($R = .33$). It should be noted that family history of alcohol problems was associated with both groups, thus ruling out a “genetic predisposition to the experience of a reduction in tension” (Brown, 1985, p. 128).

In a later study (Brown, Christiansen, & Goldman, 1987), the reliability of the AEQ was tested with 176 non-problem drinking adults. Internal consistency of the AEQ scales was deemed sufficient with coefficient alphas ranging from .72 to .92 with a mean coefficient of .84. In the same study, using a sample of 465 college students, test-retest reliability was checked after an eight week interval. Reliability scores for the six AEQ scales ranged from .48 to .72 with a mean of .64. This was deemed moderately reliable by the authors and attributed to the change in college student attitudes toward drinking after being on campus rather than an accurate reflection of the instrument's reliability.

In an effort to include all relevant factors related to expected outcomes of drinking, both positive and negative, Southwick, Steele, Marlatt, and Lindell (1981)
investigated how expectancies may differ between the initial phase of drinking and the later period of intoxication. In the first part of a two-part study, Southwick, et al. (1981) presented 20 undergraduate students with an open-ended questionnaire addressing the effects of alcohol on feelings and behavior in various situations involving a mental task, a physical task, a social task, and emotional stress. Subjects then wrote several paragraphs describing the situation they were envisioning, responses to the situation after drinking alcohol, and responses to the situation if sober. Nonredundant responses were converted into 37 bipolar semantic differential-style items referring to affective, cognitive, and behavioral adjectives, such as relaxed/tense.

The final questionnaire, the Alcohol Effects Scale (AES), measures subject responses on a 5-point bipolar scale. The first 37 items indicate expected effects after drinking a moderate amount of alcohol (Phase 1). The last 37 items are identical to the first, but ask respondents to indicate expectations after drinking "too much" alcohol (Phase 2).

In the second part of the study, the AES was administered to 253 undergraduate students enrolled in an introductory psychology class at the University of Washington. Separate principal-components factor analyses with varimax rotation were performed on Phase 1 and Phase 2 expectancies. Using the scree test, a three-factor solution was chosen for each phase. Factors from each phase were essentially identical and interpreted as: 1) stimulation/perceived dominance, 2) pleasurable disinhibition, and 3) behavioral impairment. Scales based on each factor were formed by assigning an item to the scale on which it had the highest factor loading, reverse scored where necessary, and summed. The
summed score was divided by the number of items in the scale and multiplied by 10 so that scale scores would be equivalent. Reliability coefficients, estimated by Cronbach’s alpha, for Phase 1 scales were .81, .82, and .80, respectively. Phase 2 reliability coefficients, in order, were .87, .82, and .80.

In an effort to determine if and how drinking patterns and phase of intoxication relate to alcohol expectancies repeated measures analysis of variance (ANOVA) was performed on each scale using phase as the repeated measure factor and drinking pattern and sex as between subject factors. Drinking pattern was determined through self-report classification as “abstainer” (never drink), n=18; “occasional drinker” (at least once a year but less than once a month), n=44; “light/moderate drinker” (at least once a month but less than 4 drinks each time), n=112; and “heavy drinker” (nearly every day, or weekly, often drinking 5 or more drinks each time), n=52. Results revealed significant main effects for phase, $F(1, 146) = 9.4, p < .005$, and drinking pattern, $F(3, 146) = 7.5, p < .005$, on the Stimulation/Perceived Dominance scale. During Phase 1, all drinking patterns except abstainers expected stimulating effects from drinking alcohol and more neutral effects from drinking during the second Phase. Significant main effects were also revealed for phase, $F(1, 143) = 18.9, p < .005$, and drinking pattern, $F(3, 143) = 6.5, p < .005$, on the Pleasure Disinhibition scale. All drinking patterns, except abstainers, expected Phase 1 drinking to result in a heightened sense of enjoyment. This was also true for Phase 2 drinking, although not to the same degree. The Behavioral Impairment scale also revealed a significant main effect for phase, $F(1, 133) = 75.5, p < .005$, but not drinking pattern. Subjects expected more impairment during Phase 2 drinking although Phase 1 drinking
was also associated with some impairment. Results of these analyses showed no significant pattern by phase interactions and no significant sex main effects or interactions on any of the scales.

Thus, results of this investigation illustrate that alcohol expectancies are related to drinking pattern and to phase of inebriation. Heavy drinkers seemed to expect greater stimulation and pleasure during phase 1 drinking while expecting the same negative effects that lighter drinkers anticipated. Also, moderate drinking (phase 1) was associated with greater stimulation and pleasure while phase 2 drinking was associated with greater behavioral impairment. Southwick, et al., (1981) offer Solomon’s (1980) opponent-process theory, which states that “the initial administration of a positive stimulus (alcohol) will elicit a quick peak of enjoyment (Phase 1), which is followed by adaptation and a milder degree of enjoyment (Phase 2)” (p. 720), as explanation of these findings. While attempting to interpret these results according to some theoretical framework, the authors also admit to a major limitation in that “comparisons between the present study and previous work are difficult because different items and factorial solutions were used” (Southwick, et al., 1981, p. 720).

Building on the belief that attitudes are measured more accurately when specific behaviors are used to measure the underlying cognitive factors related to those behaviors (Ajzen & Fishbein, 1977), Leigh (1987) developed the Effects of Drinking Alcohol Scale (EDA), a unipolar scale measuring specific behavioral effects rather than the general emotional and behavior effects measured by the AEQ and the AES (Leigh, 1987). The original EDA used a Likert-type scale for estimating the likelihood that each expected
The EDA was first used in a study designed to measure subjects' beliefs about alcohol's effects on self and others (Leigh, 1987). The study included both a college student sample as well as a general population sample. The college student sample (n = 265) was drawn from an introductory sociology class at the University of California, Santa Barbara. Subjects ranged in age from 17 to 41 with a mean age of 18.7 years. Sixty-six percent of the subjects from this sample were women. The general population sample was drawn from a reverse telephone directory covering Oakland, California and surrounding communities, using a 1/200 systematic sample with a random start. This process yielded 736 households to which a packet containing a questionnaire, cover letter, and business reply envelope were sent. A follow-up packet was sent to those household which failed to respond. Completed questionnaires were received from 288 respondents, of which 16 were unusable. Subjects in the final sample (n = 272) ranged in age from 19 to 90 and had a mean age of 44 years. Forty-six percent of this sample were women.

The original EDA consisted of 20 possible effect items, each followed by a 5-point Likert-type scale with endpoints labeled “very unlikely” and “very likely.” The effect items were developed by consulting previous questionnaires and adapting consistent items into specific behavioral manifestations. Subjects were asked to rate the likelihood of their
experiencing each effect if they were to drink enough alcohol to be under the influence. Subjects were also asked to rate the likelihood of each effect happening to others after consuming enough alcohol to be under the influence. Drinking habits were measured by Cahalan, Cisin, and Crossley's (1969) quantity-frequency-variability index which asks subjects how many drinks they typically drink on a drinking occasion, how often they drink, and how often they drink to intoxication. Subjects were then divided into four drinking style categories, nondrinkers, light drinkers (1-10 drinks/month), moderate drinkers (11-60 drinks/month), and heavy drinkers (60+ drinks/month) (Cahalan et al., 1969; Polich & Orvis, 1979).

Results indicated that the student sample included 2% nondrinkers, 28% light drinkers, 50% moderate drinkers, and 19% heavy drinkers while the general population sample included 11% nondrinkers, 40% light drinkers, 39% moderate drinkers, and 10% heavy drinkers. Effect items were analyzed using repeated measures multivariate analysis of variance (MANOVA) with sex, sample, and drinking style as between-subject factors and target (self vs other) as a within-subject factor. A significant effect for target was reported (F = 25.0, p < .001), as subjects rated others as more likely to experience the effects of alcohol than self. Of the 20 items on the questionnaire, 17 were rated significantly higher for others than for self, with mean differences being particularly large on the socially undesirable effects of aggressive (F = 165.9, p < .001), argumentative (F = 190.7, p < .001), mean (F = 325.8, p < .001), act vulgar (F = 221.8, p < .001), get into fights (F = 357.0, p < .001), and lose self-control (F = 185.2, p < .001). Leigh also reported significant interactions of target with sample (F = 2.6, p < .001), drinking style (F
= 1.9, p < .001), and sex (F = 2.3, p < .001) indicating that self-other differences were greater in the student sample than in the general population sample, greater for women than for men, and greater for drinkers than nondrinkers.

Effect ratings on self were subjected to principal component analysis with varimax rotation to examine differences further and for data reduction purposes. Five factors emerged which Leigh labeled nastiness, cognitive-physical impairment, disinhibition, gregariousness, and depressant. Eigen values for each factor are 3.47 with 17.4% of variance accounted for, 2.36 with 11.8% of variance accounted for, 2.22 with 11.1% of variance accounted for, 2.13 with 10.6% of variance accounted for, and 1.90 with 9.6% of variance accounted for, respectively. Effect ratings for others, subjected to similar analysis, yielded four factors which Leigh labeled as nastiness-loss of control, gregariousness-disinhibition, cognitive-physical impairment, and depressant. Eigen values for each factor are 4.68 with 23.4% of variance accounted for, 3.13 with 15.6% of variance accounted for, 2.02 with 10.1% of variance accounted for, and 1.99 with 10.0% of variance accounted for, respectively. Separate factor analyses were run for each sample, for each sex, and on randomly split halves of the total subject population to test for stability of these factors. As results from these separate analyses showed that factor structures were indeed similar to previous findings, scales were formed by summing the ratings on each factor and dividing by the number of items in the scale. Reliability and intercorrelation statistics were then run on the scales to verify that scale items did indeed "hang together." On self ratings, the Nastiness scale yielded an alpha coefficient of .83, for the Impairment scale alpha equaled .73, for the Disinhibition scale alpha equaled .66,
for the Gregariousness scale alpha equaled .63, and for the Depressant scale alpha equaled .56. None of the intercorrelations exceeded .54. On other ratings, the Nastiness scale yielded an alpha coefficient of .88, for the Gregariousness scale alpha equaled .77, for the Impairment scale alpha equaled .72, and for the Depressant scale alpha equaled .62. None of the intercorrelations exceeded .53.

In further developing her instrument, Leigh (1989b) subjected the EDA, along with the AEQ and the AES, to confirmatory factor analytic procedures to test the factor structures, determined through exploratory factor analytic procedures, which the authors had utilized to construct the instruments. Where exploratory factor analysis determines a model based on observed data, confirmatory factor analysis tests the fit of a specified theoretical model with the observed data.

Subjects in this study (Leigh, 1989b) included 245 men and 289 women enrolled in a psychology class at Oregon State University. Subjects ranged in age from 17 to 48 years, with a median age of 19. Subjects were administered the three instruments, the order of which had been rotated, in groups of five to 20. A model, based on the underlying factor structure reported by each author, was specified for each scale. The AEQ theoretical model was specified using six factors with factor one (global positive change) having 28 items, factor two (enhanced sex) having seven items, factor three (social/physical pleasure) having nine items, factor four (increased social assertion) having 11 items, factor five (tension reduction/relaxation) having nine items, and factor six (increased arousal/aggression) having five items. The AES theoretical model was specified using three factors with factor one (stimulation/perceived dominance) having 13
items, factor two (pleasurable disinhibition) having 14 items, and factor three (behavioral impairment) having 10 items. The EDA theoretical model was specified using five factors with factor one (nastiness) having five items, factor two (cognitive/physical impairment) having five items, factor three (disinhibition) having four items, factor four (gregariousness) having three items, and factor five (depressant effects) having three items. All models used a simple structure, meaning that each item was specified to load on only one factor, presuming the independence of each subscale. However, latent variables were allowed to intercorrelate freely. Chi-square statistics were calculated for each model to test goodness-of-fit, as well as a normed-fit index which shows the improvement of the specified model over a null model where variables are assumed to be independent.

Three models were specified for the AEQ, the theoretical model, a one-factor model, and the null model for comparison. The one-factor model was included as the AEQ had been criticized for measuring the single belief that alcohol effected general positive change after consumption rather than six independent expectancies (Cooper, Russell, & George, 1988; Mooney & Fromme, 1985, cited in Leigh, 1989b). While 66 of the 69 factor loading estimates were significant (p < .05), correlations between latent variables ranged from .37 to .76, indicating nonindependent factors for the six-factor model. Indications of the reliability of scale items, squared multiple correlations, ranged from 0 to .75.

For the six-factor model the coefficient of determination, a number between 0 and 1 which represents the amount of variance explained by a model, equaled -7.12. Negative
values or values greater than 1 usually result from a misspecified model, violations of the assumption of normality of the data, inadequate sample size, a nearly unidentified model, or the pairwise deletion of missing items (Long, 1983). After verifying the identification of the model and ruling out the other possibilities, Leigh concluded that the model was misspecified. Chi-square statistics were highly significant ($p < .0001$) for all three models, indicating that the models did not fit the observed data. Bentler and Bonnett's (1980) normed-fit index was calculated to test each model's improvement over the null model. This resulted in negligible gains in explanatory power, as these values equaled .43 for the one-factor model and .56 for the six-factor model. Values above .9 are considered adequate (Bentler & Bonnett, 1980). The six-factor model, when compared to the one-factor model, resulted in a normed-fit index estimate of .13, which was minor improvement. Modification indices (Joreskog & Sorbom, 1983) demonstrated the six-factor model's lack of fit was due to the loading of items on only one scale, indicating the nonindependence of subscales. This corroborated the high correlations between latent variables discussed previously.

Two models were specified for the AES, the theoretical model and the null model. In the three-factor model all of the factor loading estimates were significant ($p < .05$), however 29 of the 37 estimates were under .6. Correlations between latent variables ranged from 0 to -.763, indicating nonindependent factors. Squared multiple correlations, ranging from .1 to .49, revealed low reliability. The coefficient of determination equaled -.259. Leigh could not rule out an under identified model therefore either this model was misspecified or under identified. Chi-square statistics were highly significant ($p < .0001$)
for both models, indicating again that the models did not fit the observed data. Bentler
and Bonnett’s normed-fit index was calculated to test the three-factor model’s
improvement over the null. This resulted in a value of .58, again too low to have meaning
in terms of explaining the data. Modification indices demonstrated the three-factor
model’s lack of fit was again due to the loading of items on only one scale, indicating the
nonindependence of subscales. If left unconstrained, half of the items would have loaded
on more than one latent factor.

Two models were also specified for the EDA, the theoretical model and the null
model. In the five-factor model all of the factor loading estimates were significant (p <
.05), ranging from .26 to .9. Fifteen of the 20 items exhibited values greater than .5.
Indications of nonindependent factors was demonstrated by latent variable correlations
which ranged from .08 to .75. Variable reliabilities of scale items were evidenced through
squared multiple correlations which ranged from .06 to .83. The coefficient of
determination equaled .983. Thus, Leigh concluded that the five-factor model explained a
large proportion of the variance.

For both models, chi-square statistics were again highly significant (p < .0001),
indicating a relatively poor fit of the models to the data. The improvement of the five-
factor model over the null model in explaining the data was again too low to add much
meaning, as the normed-fit index resulted in a value of .74. Modification indices
demonstrated the five-factor model’s lack of fit was once again due to the loading of items
on only one scale. The pattern which emerged was one where items which described
negative consequences were clustered together, as were items which described outgoing
tendencies.

Based on these results, none of the models upon which the surveys were constructed provided a good fit to the observed data. Leigh (1989b) suggested, however, that even though the subscales on the instruments did not have discriminant validity, the instruments were still valid measures of general alcohol expectancies. Leigh proposed that the fact that underlying variables are not discrete could explain some of the conflicting results in the expectancy literature. The finding that different subscales are sometimes related to drinking behavior and sometimes not could be the result of different subscales contributing different variance in some populations in some situations. That is, two underlying variables could contribute different amounts to a particular expectation based on the population and the situation. "Unfortunately, there is no theory and no way to explain the varying group differences that are seen," (Leigh, 1989a, p. 369).

A study conducted by Johnson (1988) seems to both substantiate Leigh's criticism of inconsistency and yet make an effort to contribute to theory building in speculating on how expectancies influence the initiation and maintenance of drinking of alcohol. While Johnson did not build on previous research by utilizing any of the developed scales to investigate expectancies, the results of his study support earlier research conducted by Leigh (Critchlow, 1986; Leigh, 1987).

Investigating the beliefs of 55 male college students regarding drinking behavior, alcohol, and alcoholism, Johnson (1988) found that subjects' responses fell into two distinct belief patterns, "hedonistic" and "helpless" beliefs. Subjects were asked to mark the following belief statements as either true or false:
1. Alcohol is addictive.
2. Alcoholism is a disease.
3. Alcohol is a drug.
4. Alcoholism is inherited.
5. Alcohol can damage brain cells.

Subjects were then asked to rate the following nine statements on a 6-point scale where 1 represented total agreement and 6 represented total disagreement:

1. People have more fun when drinking.
2. People become more aggressive after a few drinks.
3. Alcoholics can't control their drinking.
4. You can't be an alcoholic if you only drink beer.
5. Alcoholics crave alcohol.
6. People become more sexually active after a few drinks.
7. Drinking leads to taking other drugs.
8. A good way to get rid of a hangover is to drink the next morning.
9. To control their problem, alcoholics must stop drinking altogether.

Results indicated that an overwhelming majority of the subjects agreed with four of the five true-false belief statements. Eighty-six percent agreed that alcohol is addictive, 94% agreed that alcoholism is a disease, 92% agreed that alcohol is a drug, 98% agreed that alcohol can damage brain cells, however, only 53% agreed that alcoholism is inherited. Johnson believes the lack of agreement on the last statement to be the result of subjects believing that alcoholism is not simply due to such hereditary factors but is much
more complicated. This statement was viewed as "too strongly worded" or "inadequately worded" to elicit an accurate depiction of subjects' beliefs on this matter (Johnson, 1988, p. 18).

One-way analysis of variance (ANOVA) with repeated measures performed on the remaining nine statements revealed a significant statistical main effect (F=70.97, df=8 and 432, p<.0001), indicating a wide variety of beliefs held by the subjects. However, beliefs seemed to fall into four groupings based on the differences between the means for each statement. For each grouping, means did not differ from each other, but differed significantly from those not included in the grouping at the .01 level, utilizing Duncan Multiple Range comparisons. Subjects disagreed the most (x=5.2) with the statement concerning not being an alcoholic due to beer consumption only. This statement was rejected so strongly that it appears in a group of its own. Clearly, subjects believe that only drinking beer does not excuse one from being an alcoholic.

The second grouping of beliefs involved the statements concerning alcohol leading to other drug use (x=4.4) and drinking to relieve a hangover (x=4.3). The statements relating alcohol to more fun and sexual activity were in the third grouping, with each having a mean of 3.2. This grouping is the first to represent the agreement side of the scale. The final grouping, with the greatest level of agreement, includes the statements related to alcoholics stopping drinking to control their problem (x=2.1), alcoholics craving alcohol (x=2.1), alcoholics not controlling their drinking (x=1.8), and people being more aggressive (x=1.8).

In order to investigate coherence between belief statements, correlation statistics
were utilized to compare subjects' responses to statements with similar means. The first comparison was between the two statements with the most disagreement, yielding a correlation that was both negative and insignificant ($r = -0.07$). The next comparison, between the two statements in the second grouping, resulted in a positive but still insignificant correlation ($r = 0.02$), indicating that while the means are similar, individual subjects responded differently to each statement. A statistically significant correlation ($r = 0.28$, $p < 0.05$) was found between statements in the third grouping, indicating that beliefs about the effects of alcohol concerning fun and sex are related. The final comparison, between the “crave” and “can’t control” statements also yielded a positive and statistically significant correlation ($r = 0.28$, $p < 0.05$), validating this grouping of beliefs. Thus, of the four groupings determined by the means analysis, two were validated through the use of correlations, the “hedonistic” grouping (fun and sex) and the “helpless” grouping (out of control and craving).

These results lead Johnson (1988) to hypothesize that these two belief constellations influence the drinking process in a two-step sequence:

People who believe that drinking leads to good times start drinking to achieve this end.... These people now find themselves drinking frequently to have fun. And, now the “helpless” constellation of beliefs becomes operative. They drink regularly and that means they are becoming problem drinkers. They see themselves as weak and helpless and continue drinking with predictable consequences. (p. 21)

This study seems to demonstrate that this sample of male college students ascribed
to certain stereotypical beliefs more strongly than others and that beliefs may be grouped together to represent underlying cognitive factors which influence drinking-related behaviors.

Thus, the bulk of the expectancy research has concentrated on measuring the expectations of different types of drinkers and has used inconsistent means of measuring expectancies (Goldman et al., 1987; Leigh, 1989a). In some studies subscales have contributed significantly to the variance while in others they have not, as mentioned previously. Due to the lack of any theoretical framework, the discrepancies in results which the various scales have yielded, has best been explained by error variance (Leigh, 1989a). Experimental error variance is that portion of the variance in the dependent variable that is attributed to extraneous sources (Kirk, 1982). In other words, that which cannot be explained and is attributed to chance variations in the data. Kirk (1982) goes on to say that two main sources of error variance are variability in the behavior of subjects and lack of uniformity in conducting the experiment. Without the theoretical foundation upon which to base expectancy research and interpret results, it is impossible to explain the discrepancies in any other way. This lack of theoretical underpinning has lead to much criticism and the recognition of the need to base research on theory. "To put it simply, empirical shotgunning needs to be replaced with theory testing" (Leigh, 1989a, p. 371).

According to Leigh (1989a), expectancy research has neglected to draw upon theory, within the field of alcohol studies or outside of it. However, recent attempts to relate learning theory to expectancy research have been made (Goldman et al., 1987; Goldman, 1989; Goldman, Brown, Christiansen, & Smith, 1991), as have attempts to
examine the applicability of attitude theory to the study of alcohol outcome expectancies (Wood, Sher, & Strathman, 1996). Some research (Goldman et al., 1987; Maisto, Connors, & Sachs, 1981) has suggested models of how expectancies fit into decisions about drinking, but these models have not been tested except by correlating expectancies with drinking behavior. While statistics seemed to drive the original work in expectancy research, there is currently a recognition that the direction of future work must rely on theory in order to be useful. "Expectancy research needs to be directed toward examining how, rather than whether, these beliefs and drinking behavior are related" (Leigh, 1989a, p. 369). More specifically, "research is needed to explicate college drinking behavior in a multidimensional framework, and link drinking problems to cognitive and situational factors" (O'Hare & Sherrer, 1997, p. 33).

Adlerian Theory

The Individual Psychology of Alfred Adler has been suggested as a model to understand substance abuse (Steffenhagen, 1974, 1977, 1983; Hafner, Fakouri, & Labrentz, 1982; Cooley, 1983). Individual psychology states that feelings and actions come after thought and that thought is based on beliefs which the individual interprets from experience. These interpretations provide the general direction the individual will take in attempting to reach private goals of how to significantly fit into society. Because of feelings of inferiority, which are common, normal and functional, the individual is motivated to compensate in some creative way for those aspects of self which the
individual believes are "less than." The individual believes that if the fictional goals were reached, fulfillment would be achieved. The striving for the fictional goals can be dichotomously broken down into useful striving, of social concern, or useless striving, of personal interest (Manaster & Corsini, 1982). The totality of these dynamics is referred to as the individual’s unique style of life.

In order to get a picture of the individual’s present life philosophy, Individual Psychology utilizes early recollections. Early recollections serve to reinforce the individual’s perception of self, the world, and the relationship between self and environment. According to Adler (Ansbacher & Ansbacher, 1956), memories are the reminders a person carries to be mindful of personal limitations and of the meaning to attribute to circumstances. Adler states,

There are no 'chance memories.' Out of the incalculable number of impressions which meet an individual, he chooses to remember only those which he feels, however darkly, to have bearing on his situation. Thus his memories represent his "Story of My Life"; a story he repeats to himself to warm him or comfort him, to keep him concentrated on his goal, to prepare him, by means of past experience, to meet the future with an already tested style of action (Ansbacher & Ansbacher, 1956, p. 351).

Consequently, if early memories represent the interpretation of one's experience, then it follows that early recollections give hints and clues to one's beliefs about self, the world and one's place in that world. Through the use of early recollections one may gain an understanding of the beliefs underlying repetitive behavior patterns (Taylor, 1975),
including alcohol consumption.

Differences in the content of early recollections between “normal” and “alcoholic” individuals was found by Hafner, Fakouri, and Labrentz (1982). The normal group included 20 males and 10 females who ranged in age from 31 to 67, with an average age of 43.4 years. To be classified as “normal” individuals could not currently nor previously have been in treatment for psychological problems. The alcoholic group included 24 males and 6 females who ranged in age from 31 to 68, with an average age of 46.3 years. For the “alcoholic” group, 30 patients in treatment for alcoholism at an outpatient mental health clinic were chosen after being diagnosed by an interdisciplinary team at the clinic.

Two early recollections were obtained in an interview format from each subject. The age at which the recollection occurred was also noted. Subjects were asked to report incidents which they remembered prior to the age of eight, as anything which happened after this age was no longer considered early childhood by the authors. Early recollections were scored according to guidelines specified in the Manaster-Perryman Manifest Content Early Recollection Scoring Manual (Manaster & Perryman, 1974). The Manaster-Perryman Manual notes the presence or absence of 42 variables in the early recollection. Variables are categorized into the seven divisions of characters, themes, concern with detail, setting, active/passive, internal/external control, and affect. Five of the 42 variables were omitted to simplify scoring. Two judges were used to score early recollections. On ten randomly selected subjects the judges were in 90% agreement in the scoring of the early recollection. Three scores were obtained from each subject, one for each early recollection (ER1 and ER2) and a total recollection score (ERt).
Of the seven clusters, two reached significance on chi-square tests. The ERs of normal and alcoholic groups differed on the 'theme' category ($p < .05$) and on the dimension of 'internal/external control' ($p < .05$). Difference in the 'setting' cluster (the place where the remembered situation occurred) approached significance, as did the 'concern with detail' cluster ($p < .10$). Upon investigating the difference in the 'setting' category, it was ascertained that recollections from the alcoholic group took place more frequently outside the home than did the ERs from the normal group. As for 'concern with detail,' the normal group exhibited a higher frequency of visual content than did the alcoholic group, whereas the alcoholic group recalled more motor activity than did the normal group.

To determine where the differences occurred in the theme category, items were tested individually. Results of this investigation showed the two groups differed significantly ($p < .05$) on 'Mutuality,' defined in the scoring manual as "a friendly, social, reciprocal, or cooperative experience with others" (Manaster & Perryman, 1973, p. 348). The normal group had a higher frequency of this variable than did the alcoholic group. The authors interpreted these results as indications that the interpersonal relationships of alcoholics are "characterized by many dysphorias" (Hafner, Fakouri, & Labrentz, 1982, p. 240).

Another item to differ significantly ($p < .05$) in the theme cluster was the 'Fear or anxiety provoking or threatening situation' item. More subjects from the alcoholic group than the normal group reported remembering threatening situations marked by fear or anxiety. The authors hypothesized that alcoholics are in a constant state of perceiving
threats to their security which produces high levels of anxiety which they choose to relieve through the use of alcohol.

The ERs of the two groups also differed significantly on the internal/external control category (p < .05). According to the scoring manual, judges were to indicate internal control if the subject accepts responsibility for the action and its consequences in the early recollection while indicating external control if the subject avoids responsibility in the early recollection. Subjects in the alcoholic group reported a higher proportion of ERs that symbolized external control, whereas subjects from the normal group reported a higher proportion of ERs that suggested they were controlled internally. This corroborates other research findings pertaining to alcoholics' perceived locus of control (Palmer, 1971; Phares, 1971; Stafford, 1980). "Our findings indicate that alcoholics are not as likely to take responsibility for what happens to them in life as are members of the normal group" (Hafner, Fakouri, & Labrentz, 1982, p. 241).

Chesney, Fakouri, and Hafner (1986) compared the content of ERs of alcoholics willing to continue treatment (AWCT), alcoholics unwilling to continue treatment (AUCT), and a nonalcoholic control group (NAC) in an effort to determine if ERs differentiate between groups so that treatment retention may be improved. A total of 90 male subjects were included in the study, 30 in each group. Alcoholic subjects were selected in a manner consistent with Hafner, Fakouri, & Labrentz (1982). Willingness or unwillingness to continue treatment was determined by scores obtained on a scale developed by Corotto (1962, cited in Chesney, Fakouri, & Hafner, 1986). Subjects in the AWCT group ranged in age from 16 to 68, averaging 30.5 years, while subjects in the
AUCT group ranged in age from 18 to 69, averaging 37.9 years. The NAC group, employees of the mental health clinic where the study was conducted, ranged in age from 21 to 63 years with an average age of 33.1 years. ERs were collected and scored following the same procedure utilized by Hafner, Fakouri, & Labrentz (1982). Interjudge reliability, tested on 10 randomly selected subjects, resulted in 94% agreement.

In the 'character' cluster of items, no significant differences were found to exist on any of the items, although 'mother' and 'father' approached significance. The NAC group were judged to include both mother and father in their reports more frequently than did either of the alcoholic groups.

Results of analysis of the 'theme' cluster showed that the ERs of subjects in the AUCT group referred to 'death' significantly more often than did subjects in the other two groups ($x^2 = 8.29, p < .05$).

In the 'concern with detail' cluster, subjects in the AWCT group recalled ERs with significantly more 'physical movement' than did subjects in the AUCT group ($x^2 = 7.62, p < .05$), while subjects in the NAC group were judged to include more 'visual' content than subjects in either alcoholic group ($x^2 = 15.10, p < .01$).

As for 'setting,' subjects in the NAC group reported more memories of events occurring 'inside the home' than did subjects in either alcohol group ($x^2 = 6.6, p < .05$). The AWCT group had a higher proportion of subjects recalling events 'outside the home' than did the AUCT group or the NAC group, however this difference did not achieve significance.

The 'control' cluster revealed differences between groups, but again the
differences did not achieve significance. The AWCT group ERs were judged to exhibit
the most internal control of the three groups, with the NAC group exhibiting the most
external control, and the AUCT group falling in between the other two on the continuum.

Significant differences between groups were indicated in the ‘affective’ cluster.
More ‘pleasant’ memories were reported by subjects in the NAC group and AUCT group
than subjects in the AWCT group ($x^2 = 11.52, p < .01$). Conversely, subjects in the
AWCT reported more ‘unpleasant’ memories than either the AUCT group or the NAC
group ($x^2 = 10.72, p < .01$).

These results seem to be somewhat consistent with the Hafner, Fakouri, &
Labrentz (1982) study. A similar conclusion was reached concerning the interpersonal
relationships of alcoholics being marked by dysfunction, especially with family members.
This conclusion seems to support Brown and Yalom’s (1977) observations of the group
behavior of alcoholics. One possible inconsistency lies in the internal/external control
category, however results did not reach significance therefore are inconclusive. The
authors interpret these findings as indications that alcoholics willing to continue treatment
perceive themselves to be in more distress and discomfort than those unwilling to continue
treatment, who were perceived as somewhat more adjusted and hopeful.

Hafner, Fakouri, and Chesney (1988) investigated the difference in ER content of
alcoholic and nonalcoholic women in an attempt to “discover differences between the two
groups that may be important for differential diagnoses and treatment” (p. 302). Twenty-
seven patients were chosen as subjects for the alcoholic group utilizing the same
procedure as Hafner, Fakouri, and Labrentz (1982), while 30 women who had not been
nor currently were in treatment for psychological problems were placed in the
nonalcoholic control group. Ages for subjects in the alcoholic group ranged from 14 to
64 years with an average age of 29.4 years. Subjects' ages in the control group ranged
from 20 to 58 years with an average age of 32.1 years.

Early recollections were again obtained and scored consistent with Hafner,
Fakouri, and Labrentz (1982), using the Manaster-Perryman Scoring Manual (Manaster &
Perryman, 1974). Inteijudge reliability, based on 10 randomly selected subjects, was
reported as 91% in agreement. Five of the seven clusters differed significantly between
the two groups.

Differences in the ‘character’ cluster showed that women in the control group
reported the presence of the mother ($x^2 = 4.22, p < .05$) and other family members ($x^2 =
6.52, p < .05$) more frequently than did subjects in the alcoholic group. However, subjects
in the alcoholic group did report more animals in their ERs than did subjects in the control
group ($x^2 = 7.98, p < .01$).

The two groups differed significantly in the ‘themes’ cluster on only one item,
“fear or anxiety provoking or threatening situation” ($x^2 = 5.54, p < .05$). ERs of subjects
in the alcoholic group were judged to contain a higher proportion of threatening or fearful
situations than those of subjects in the control group. Subjects in the alcoholic group also
reported more ‘open hostility’ and ‘punishment’ themes than did control subjects,
however these differences failed to reach significance.

Differences between ‘motor’ and ‘auditory’ variables in the ‘concern with detail’
cluster reached significance. Women in the alcoholic group paid more attention to
physical movement in their ERs than did women in the control group \( (x^2 = 42.28, p < .01) \) while women in the control group paid more attention to describing sound elements than did women in the alcoholic group \( (x^2 = 7.98, p < .01) \).

Neither the 'setting' cluster nor the 'control' cluster exhibited significant differences between the two groups. As for the 'active-passive' cluster, women in the control group reported initiating more action than did subjects in the alcoholic group \( (x^2 = 10.39, p < .01) \). Women in the alcoholic group reported being the recipient of action significantly more than did control group subjects \( (x^2 = 11.71, p < .01) \).

Examination of the 'affect' cluster showed that subjects' ERs in the alcoholic group contained more of an 'unpleasant' tone than did ERs of control group subjects \( (x^2 = 8.41, p < .01) \). Subjects in the control group had a higher proportion of ERs with no indication of affect \( (x^2 = 8.60, p < .01) \).

Results again indicate memories where family relationships are disturbed are found more frequently among the alcoholic population. The authors (Hafner, Fakouri, & Chesney, 1988) suggest these women turned to their pets for comfort, as evidenced by the significant number of recollections in the alcoholic group which contained animals. This conclusion seemed especially salient since fear and anxiety seemed central themes in the ERs of subjects in the alcoholic group. The perception of threat and fear also was used to explain the higher level of physical activity among the ERs of the alcoholic women. This could also account for the more negative affective tone of the ERs of women in the alcoholic group. The passivity of the ERs of the alcoholic group was interpreted by the authors as the avoidance of responsibility on the part of these subjects which could
become a consideration in the therapeutic process. In an attempt to synthesize their findings, the authors state:

Alcoholic women are frightened people who view the world as a dangerous and hostile place that is made up of people who should be kept at a distance. Further, these alcoholic women are passive, i.e., they do not take responsibility for what happens to them in life. The characteristic outlook of alcoholic women is laden with much unhappiness, discomfort, and distress. (Hafner, Fakouri, & Chesney, 1988, p. 305)

The results of these studies (Hafner, Fakouri, & Labrentz, 1982; Chesney, Fakouri, & Hafner, 1986; Hafner, Fakouri, & Chesney, 1988) suggest that the content of ERs contribute to the understanding of the psychological dynamics of alcoholic patients and to understanding “the beliefs or expectancies brought to the situation by the person” (Hafner, Fakouri, & Labrentz, 1982, p. 243).

Summary

In summary, there is evidence that shows alcohol consumption is a major problem among college students, especially for male student-athletes and fraternity men. Alcohol expectancies have been shown to be mediating variables in the initiation and maintenance of drinking behaviors. However, research associated with alcohol outcome expectancies has not been based upon theoretical underpinnings making results difficult to interpret and generalize. It has also been demonstrated that Individual Psychology, a psychosocial theory of human behavior, has much to offer in furthering the understanding of drinking
behaviors, in that the content of ERs reported by alcoholics differs from those reported by non-alcoholics. Where expectancies indicate beliefs about alcohol and the goals one is attempting to reach through its use, ERs represent the individual’s beliefs about self, other, and the surrounding environment.
CHAPTER II

PROCEDURES

The purpose of the study was to explore relationships among and between self-reported alcohol consumption rates, alcohol-related consequences, expectations concerning the effects of alcohol consumption, and the content of ERs among fraternity men, male student-athletes, and college men indicating involvement in neither intercollegiate athletics nor a social fraternity. Furthermore, the study sought to explore how the content of ERs and alcohol outcome expectancies contribute to the prediction of alcohol consumption patterns among these three groups.

Definition of Terms

Abstainers: Subjects who have not had a single drink of alcohol in the past year (Redman, et al, 1987).

Alcohol Expectancies: The beliefs or expectations of how alcohol will effect one’s mood or personality after consumption (Critchlow, 1986).

At-Risk Group: A group of students that exhibit significantly higher proportion of alcohol related behaviors which put them at higher risk of developing the disease of alcoholism or of experiencing harmful consequences as a result of drinking alcohol (Commission on Substance Abuse at Colleges and Universities, 1994).

Early Recollection: A memory of a single event or one-time incident occurring prior to
the age of eight which the individual holds to be mindful of personal limitations and of the meaning to attribute to circumstances (Ansbacher & Ansbacher, 1956; Mosak, 1958).

Fraternity Men: College males who indicated participation in a social fraternity while not indicating participation in intercollegiate athletics.

Independents: College males who did not indicate participation in either intercollegiate athletics or a social fraternity.

Non-Problem Drinkers: Subjects who report drinking fewer than 15 drinks per week with no more than five drinks per any one drinking occasion (Redman, et al, 1987).

Problem Drinkers: Subjects who report drinking more than 28 drinks per week or more than five drinks on any one drinking occasion (Redman, et al, 1987).

Student-athletes: College males who indicated participation in intercollegiate athletics while not indicating participation in a social fraternity.

**Hypotheses**

As the study was exploratory in nature, the following hypotheses were tested:

1) the three groups will differ in alcohol consumption rates;

2) the three group will differ in consequences experienced as a result of drinking alcohol;

3) the three groups will differ on each scale of the alcohol outcome expectancy measurement;

4) the three groups will differ in the content of their early recollections;
5) problem drinkers and non-problem drinkers within each group will differ on each scale of the alcohol outcome expectancy measurement;

6) problem and non-problem drinkers within each group will differ in the content of their early recollections;

7) the content of early recollections and alcohol expectancy scale scores will contribute to the prediction of alcohol consumption rates of subjects.

Subjects

The subjects for the study were male volunteer students enrolled during the fall semester at a private university located in a southwestern state. The university is primarily an undergraduate institution but includes several graduate programs, earning a Carnegie Classification of Doctoral University II. The university supports a National Collegiate Athletic Association certified, Division I intercollegiate athletic program. Approximately one-third of the undergraduate population is a member of the fraternity and sorority system.

Thirty-five male volunteers were solicited from the athletic department by the Athletic Academic Advisor, 34 male volunteers from the fraternity system by the Assistant Director of Fraternity and Sorority Life, and 39 volunteers from the residence halls by Hall Directors. Subjects were solicited from each group with the qualification that they not be a member of any other group to insure mutual exclusivity of study group membership. The total sample included 108 subjects.

Prior to participating in the study, each subject was required to sign an informed
consent form (Appendix A) after a brief explanation of the study was given. Furthermore, each subject was given the opportunity to receive feedback regarding personal alcohol consumption, personal beliefs about alcohol, personal potential risk factors, and general study results at the conclusion of the study.

Instruments

Alcohol consumption patterns were measured through self-report utilizing the retrospective diary (RD) introduced by Millwood and McKay (1978) rather than traditional quantity-frequency (QF) measurement devised by Straus and Bacon (1953). The QF asks respondents to select from 7 alternatives the description which best describes the frequency of alcohol consumption. Responses range from “Never, or not at all in the past year” to “more than seven times a week.” The second question of the QF asks respondents to select from 7 alternatives the one which best describes how much is consumed “on a day when you have drinks.” Responses are broken down into 2-4 drink intervals, ranging from 0 to more than sixteen, including a “does not apply” option (O’Hare, 1991). As the QF has been utilized more frequently in previous research much consideration will be given to describing this instrument; however, the current study utilized the RD because it elicits raw data on a more continuous scale.

The RD (Appendix B) asks respondents to state the number of drinks consumed each day over the past 7 days, starting with yesterday and working backwards through the week. The total number of drinks recorded were tallied to yield a drinks per week score (Redman, Sanson-Fisher, Wilkinson, Fahey & Gibberd, 1987). Scores may range from 0
to however many drinks an individual is able to consume in one week, typically less than 50. The main limitation of the RD is that it may not provide a profile of usual drinking since it requests information only for the previous week. However, O'Hare (1991) found reported consumption rates obtained from the RD and QF to be highly correlated among male college students ($r = .79, p < .001, n = 217$). O'Hare (1991) also found the RD to detect significantly more heavy drinking (averaging two or more drinks per day) ($x^2 = 113.99, df = 4, p < .0000$) and peak drinking (five or more drinks at least once per week) ($x^2 = 94.79, df = 1, p < .0000$) in male college students than did the QF, an important factor in the detection and treatment of problem drinking on the college campus.

Overall, self-report drinking has been shown to be a reliable and valid method of assessing current alcohol consumption rates (Cooper, Sobell, Sobell & Maisto, 1981; Hesselbrock, Babor, Hesselbrock, Meyer & Workman, 1983; Babor, Stephens & Marlatt, 1987). According to Babor, Stephens and Marlatt (1987), in a survey of articles published in The Journal of Studies on Alcohol from 1975 to 1986 ($n = 17$), verbal self-report measures exhibited test-retest reliability scores ranging from .48 to .99, with a mean of .70, for populations which included outpatient alcoholics, inpatient alcoholics, treatment center residents, pregnant women, college students, and adolescents. Using correlations between respondents and collateral informants, concurrent validity scores for self-report measures ranged from .34 to .95 (Babor, Stephens & Marlatt, 1987). When self-reported drinking was compared to observed drinking in a simulated restaurant experience, the correlation between observed and recall data was moderate ($r = .64$) (Poikolainen, 1985). While Babor, Stephens and Marlatt (1987) emphasize the reliability and validity of various...
types of self-report measures, they note that “retrospective diary procedures show promise of improving the reliability and validity of verbal reports by providing recall cues to respondents. These methods also yield types of information not available from traditional quantity-frequency measures” (p. 420).

Alcohol outcome expectancies were measured with the Effects of Drinking Alcohol Scale (EDA) first developed by Critchlow (1987; Leigh, 1987a). The original EDA consisted of twenty items, lining up on five subscales, describing possible effects of alcohol on behavior in a social context if one were “under the influence.” Respondents were asked to rate, on a five-point scale ranging from “likely” to “unlikely,” the probability of their experiencing each effect. Based on results gained from the confirmatory factor analysis study discussed previously (Leigh, 1989b), this instrument was expanded to include 34 items, lining up on eight subscales, describing possible effects of drinking alcohol (Appendix C). Respondents are asked to rate the likelihood of each effect happening to self on a six-point scale ranging from “no chance” to “certain to happen” (Leigh, personal communication, 1992). The revised EDA includes both positive items (n = 19) and negative items (n = 15). The four positive effect scales have been labeled “Social Facilitation” (items 1, 20, 23, 26, 28, 32), “Sex” (items 16, 22, 25, 29), “Fun” (items 5, 7, 10, 14, 17, 24), and “Tension Reduction” (items 21, 31, 34). The four negative effect scales have been labeled “Emotional” (items 4, 12, 27), “Social” (items 2, 8, 18), “Physical” (items 13, 15, 30, 33), and “Cognitive/Performance” (items 3, 6, 9, 11, 19). Alpha coefficients were computed for each scale to measure internal consistency. For the positive effect scales coefficient alpha ranged from .73 to .91, “Social Facilitation”
equaled .77, “Sex” equaled .91, “Fun” equaled .90, and “Tension Reduction” equaled .73. For the negative effect scales coefficient alpha ranged from .77 to .84, where “Emotional” equaled .77, “Social” equaled .82, “Physical” equaled .84, and “Cognitive/Performance” equaled .82 (Leigh, personal communication, 1992).

Ratings for each item of a particular scale are summed and divided by the number of items included on the scale then multiplied by ten to arrive at a scale score (Leigh, personal communication, 1992). Scale scores are treated independently and therefore not totaled to provide an overall score for the instrument. Scores on each scale may range from 10 to 60, with the higher scores symbolizing a higher expectation of alcohol effecting the subject in the manner ascribed to that particular scale.

The Manaster-Perryman Manifest Content Early Recollection Scoring Manual (Manaster & Perryman, 1974) was used in evaluating subjects’ early recollections (Appendix D). Scoring protocol consists of dichotomously noting the presence (1) or absence (0) in the early recollection of 42 separate variables clustered into seven categories: (a) Characters (persons mentioned in the early recollection), (b) Themes (topic or motif of the early recollection), (c) Concern with Detail (attention given to visual, auditory, and motor detail), (d) Setting (location of the early recollection), (e) Active-Passive (subject either initiates action or is acted upon), (f) Internal-External Control (subject either accepts or does not accept responsibility for what happened in the early recollection), and (g) Affect (overall feeling tone of the early recollection).

The Manaster-Perryman Scoring Manual was tested on a group of male (n=40) and female (n=41) graduate students who ranged in age from 19 to 46 years. Subjects
were grouped according to occupational choices of teaching (n=28), medicine (n=16),
counseling (n=16), business (n=13), and biology (n=8). Using one-way analysis of
variance on the total score for each variable, a statistically significant difference (p < .05)
was found to exist between the groups on four of the 42 variables. Based on these results,
the authors suggested the validity of utilizing this standardized scoring method for
counseling and research purposes. The validity of using the Manaster-Perryman Scoring
Manual to differentiate between alcoholic and non-alcoholic subjects was tested by
Hafner, Fakouri, and Labrentz (1982) and Hafner, Fakouri, and Chesney (1988). In the
1982 study, statistically significant differences (p < .05) were noted on the Theme
category and the Internal-External Control category. Statistically significant differences (p
< .05) were noted between alcoholic and non-alcoholic women in five categories in the
1988 study. Chesney, Fakouri, and Hafner (1986) also utilized the Manaster-Perryman
scoring protocol to test the ability of the manifest content of ERs to differentiate between
alcoholics willing to continue treatment, alcoholics unwilling to continue treatment, and
non-alcoholic. The Manaster-Perryman Scoring Manual has also proved valid in
distinguishing among clinical populations (Hafner, Corotto, & Fakouri, 1980),
occupational groups (Hafner & Fakouri, 1984; Hafner, Fakouri, & Etzler, 1986), and
firstborns and laterborns (Fakouri & Hafner, 1984).

A demographic questionnaire (Appendix E) was utilized to gain information
pertaining to age, college major, college classification, marital status, ethnicity, group
classification, sexual activity under the influence of alcohol, history of alcohol problems in
family (blood relatives), age subject began drinking alcohol, and the last four digits of the
subject’s social security number. Much of this information was used to give subjects accurate feedback concerning personal alcohol consumption and potential risks related to consumption.

Subject confidentiality was insured by not having subjects write their names on the instruments, but the last four digits of each subject’s social security number for matching and identification purposes only.

Permission to use all instruments was obtained.

Collection of the Data

Subjects were given an instrument packet which included a brief description of the study, an informed consent form, the demographic questionnaire, the EDA, the ER record, and the RD. The order of the instruments was rotated in each packet, except for the brief description and the informed consent form, to account for any fatigue factors. It took each subject approximately forty-five minutes to supply all data requested. All subjects were surveyed during a two-week time span during the fall semester of 1997 in an attempt to control for any historical or time-frame effects which may have invalidated results. Assessments were conducted at facilities in proximity to the group being surveyed. Surveys for the student-athletes were administered in the athletic complex meeting room. Surveys for fraternity members were administered in the houses where chapters conducted meetings, while surveys for independents were administered in the student center. All of these facilities are located on the campus and are consistent in regard to space, seating, and environment. Subjects were also familiar with these surroundings which minimized
the effects of any anxiety experienced from participation in the study.

Alcohol consumption patterns were determined according to the drinks per week measure obtained through the RD. Redman, et al, (1987), using the drinks per week measurement, used six division to differentiate between consumption patterns: 0, 1-7, 8-14, 15-21, 22-28, and 29+. For the purpose of this study, subjects who reported drinking more than 28 drinks per week or who reported drinking more than five drinks on any one drinking occasion were classified as "problem drinkers" (Redman, et al, 1987), even though the 28 drink cut-off is relatively conservative (Klatsky, Friedman, & Siegelaub, 1981). Subjects who reported drinking 14 or fewer drinks per week with no more than five drinks on any one occasion were classified as "non-problem drinkers." This cut-off was determined by calculating the maximum number of drinks per week consumed by Wechsler and McFadden’s (1979) categories of "infrequent-light" and "frequent light." Abstainers were not included as non-problem drinkers and were detected through the use of a supplemental question on the RD asking subjects whether they had had at least one drink of alcohol in the past year, as suggested by Redman, et al., (1987).

Early recollections were obtained through procedures similar to those used by Hafner, Fakouri, and Labrentz (1982). Two early recollections were solicited from each subject. Although instructions were written at the top of each form, subjects were also verbally instructed to “Close your eyes and visualize the earliest incident you can recall from your childhood. Write the incident as you visualize it with all the details” (Mosak, 1958). Subjects were asked to recall events that occurred prior to the age of eight, as incidents occurring after this age are not considered to be early childhood recollections.
(Mosak, 1958). Subjects were also asked to recall a single event or a one-time incident rather than something that occurred more than once in an effort to obtain recollections rather than reports.

Early recollections were evaluated by two trained judges, both of whom were blind to the purpose of the study and unfamiliar with research on early recollections and alcoholism. Both judges were third-year doctoral candidates enrolled in a counseling psychology graduate program who had volunteered to serve as judges for the purposes of this study. Training for the judges involved a discussion of the scoring protocol and five practice sessions with feedback occurring after each practice session. Interrater reliability was determined on three evaluations conducted after the five practice sessions but prior to the actual assessment to insure accuracy and consistency in the judges' evaluations. The training session for the judges took place during the week prior to the beginning of actual evaluation of the early recollections acquired from subjects. This allowed time for any questions the judges may have had and time to enlist an alternate judge had a problem arisen with either of the two original judges.

The judges utilized the Manaster-Perryman Manifest Content Early Recollection Scoring Manual (Manaster & Perryman, 1974) to evaluate the content of each early recollection. Five variables (Items 8, 21, 22, 34, and 35) were dropped from the investigation in an effort to maximize efficiency in analysis of data (Hafner, Fakouri, & Labrentz, 1982). These five items are listed as either “other” or “number,” the total number of items noted as being present on a particular cluster. Three scores were obtained for each of the remaining 37 variables, ER1, ER2, and ERt. Interrater reliability
was determined by randomly selecting 10 subjects, through use of a random number
generator, and comparing the judges rating of each variable in the scoring protocol to test
percent agreement (Hafner, Fakouri, & Labrentz, 1982).

Packets were inspected to guarantee completed forms as they were turned in to the
administrator at the time of the assessment.

Treatment of the Data

Data was analyzed using the SPSS for Windows software system, version 7.5
(Green & Salkind, 1997). Data was first screened for missing values and invalid data
(extreme outliers) utilizing univariate descriptive statistics for each variable included in the
study. This information was important in determining the validity of the data, the
generalizability of results, and in interpreting the findings (Raymond, 1986).

Once the complete data set was established, and demographic data analyzed
through use of chi-square tests of independence to insure generalizability, the hypotheses
were tested at the .05 significance level. Hypothesis one, which states that the three
groups will differ in alcohol consumption rates, was tested in two manners. First, a chi-
square test of independence using a 3 x 6 table was conducted to test for significant
differences in the frequency of alcohol consumption patterns, as defined by Redman, et al.,
(1987), between the three groups. Next, a simple one-way analysis of variance (ANOVA)
was conducted where the independent variable was group and the dependent variable was
drinks per week reported in the RD. Post hoc multiple-comparison procedures employed
the Scheffe method (1953, cited in Ferguson, 1981) to compare means. According to
Ferguson (1981), the Scheffe method is “more rigorous than other multiple comparison methods with regard to Type I error” (p. 308). Type I error is the probability of declaring that a difference is significant when, in fact, no such difference exists (Ferguson, 1981). The Scheffe method is also robust to unequal cell sizes (Pedhazur, 1982).

Hypothesis two, the three groups will differ in consequences experienced as a result of drinking alcohol, was tested utilizing a 3 x 2 chi-square test for independence on each consequence. Consequences investigated included driving under the influence, been a passenger with someone under the influence, and participated in sexual activity while under the influence.

Hypothesis three, the three groups will differ on each scale of the EDA, was tested utilizing a simple one-way ANOVA on each of the eight subscale scores. As each subscale functions independently, performing analyses on each subscale is recommended over use of a repeated measures design (Leigh, personal communication, 1998). Again, Scheffe's multiple-comparison procedure was used to compare means.

Hypothesis four, the three groups will differ in the reported content of ERs, was tested by use of a chi-square test of independence using a 2 x 3 contingency table to test differences between the three groups in the presence or absence of each item in the reported ERs.

Hypothesis five, that problem drinkers and non-problem drinkers within each group will differ on each scale of the EDA, was tested by a three factor (3 x 2 x 8) ANOVA with repeated measures. Factors included group affiliation, drinking status, and EDA scale score as the repeated measurement. Multiple-comparison procedures again
utilized Scheffé's method to compare means.

Hypothesis six, problem and non-problem drinkers within each group will differ in the content of reported ERs, was tested with a chi-square test of independence using a 2 x 2 contingency table to test differences between drinking status groups in the presence or absence of each item in the reported ERs. Separate analyses were conducted for each of the three affiliation groups.

Hypothesis seven, the content of early recollections and alcohol expectancy scale scores will contribute to the prediction of alcohol consumption rates of subjects, was tested through multiple regression following a process outlined by Pedhazur (1982) which allowed for inclusion of both continuous and categorical variables in the regression equation. This procedure calls for the inclusion of coded vectors to represent the categorical variable. Only those items of the Manaster-Perryman scoring protocol which were revealed to be significant in differentiating between drinking status groups was included in the equation. All eight scales of the EDA were included in the equation.
CHAPTER III

RESULTS AND DISCUSSION

This chapter presents results of the study. Data set construction issues are presented prior to presentation of demographic information based on affiliate group membership. Results of the hypotheses testing are then presented in numerical order. Also included in this chapter are conclusions gained from the findings of the study and implications for prevention activities. Recommendations for future studies are also included.

Results

Data Set Construction

As assessment packets were checked for missing data by the administrator while packets were completed and turned in, no information voids were discussed during the statistical screen. Univariate descriptive analyses were run on each continuous variable in the study to check for extreme outliers and results of these analyses revealed that no variable contained information which was more than four standard deviations above or below the mean, therefore all information was regarded as valid (Kirk, 1982).

Cross tabulations were run to ensure representation of all drinking classifications within each affiliate group and to screen for abstainers, subjects who had not consumed alcohol within the previous year. Of the entire sample (N = 108), 10.2% were classified as
abstainers, 31.5% as non-problem drinkers, and 58.3% as problem drinkers. A 3 x 3 chi-square test of independence was conducted to check the distribution of drinking classifications which resulted in a significant chi-square ($\chi^2 = 9.49$, df = 4, $p = .050$). This difference between the affiliate groups was most notable within the abstainer category. The independent group contained 72.7% of the abstainers, while the student-athlete group and fraternity groups contained 18.2% and 9.1%, respectively. The non-problem and problem drinking classifications both demonstrated more balanced composition across the three affiliate groups. Student-athletes comprised 32.4% of the non-problem drinkers, while fraternity men and independents comprised 26.5% and 41.2%, respectively. Of the problem drinkers, student-athletes represented 34.9%, while the fraternity men and independents represented 38.1% and 27%, respectively. As abstainers were dropped from further analyses, results were not affected. The final sample ($N = 97$) was comprised of 33 male student-athletes, 33 fraternity men, and 31 independent men.

**Demographic Information**

At the time the study was conducted, subjects ranged in age from 17 to 24 years. The student-athletes group ranged in age from 17 to 22 ($M = 19.33$, $SD = 1.14$), the fraternity group ranged in age from 17 to 21 ($M = 18.97$, $SD = 1.02$), and the independent group ranged in age from 17 to 24 ($M = 20.19$, $SD = 1.78$). The differences in the mean age for each affiliate group proved to be statistically significant ($F = 6.97$, df = 2/94, $p = .002$), with the independent group significantly older than both the fraternity group and the student-athlete group.
Approximately 35% of the sample were classified as freshmen, 33% were sophomores, 22.7% were juniors, 6.2% were seniors, and 3.1% were graduate students. Of the student-athlete group, 36.4% were freshmen, 33.3% were sophomores, 27.3% were juniors, 3.0% were seniors, and none were graduate students. Of the fraternity group, 48.5% were freshmen, 33.3% were sophomores, 15.2% were juniors, 3.0% were seniors, and none were graduate students. Of the independent group, 19.4% were freshmen, 32.3% were sophomores, 25.8% were juniors, 12.9% were seniors, and 9.7% were graduate students. A chi-square test of independence showed no significant differences between the three groups in terms of college classification.

The ethnic breakdown of the sample reveals that 2.1% of the sample designated African American, 2.1% designated American Indian/Alaskan Native, 87.6% designated Anglo American, 2.1% designated Asian American, 4.1% designated Hispanic American, and 2.1% designated Other. Of the student-athlete group, 6.1% designated African American, 84.8% designated Anglo American, 3.0% designated Hispanic American, and 6.1% designated Other. Of the fraternity group, 97.0% designated Anglo American and 3.0% designated Hispanic American. Of the independent group, 6.5% designated American Indian/Alaskan Native, 80.6% designated Anglo American, 6.5% designated Asian-American, and 6.5% designated Hispanic American. A chi-square test of independence showed no significant differences between the three groups in terms of ethnicity.

In Table One below appear, in alphabetic order, data relative to academic disciplines in which the survey sample majored. A chi-square test of independence proved
to be significant \( (x^2 = 62.58, \, df = 30, \, p = .000) \).

Table 1

**Academic Disciplines in which Subjects Majored**

<table>
<thead>
<tr>
<th>Academic Discipline</th>
<th>Affiliate Group</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Student-Athletes</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Advertising/Public Relations</td>
<td>1</td>
</tr>
<tr>
<td>Art</td>
<td></td>
</tr>
<tr>
<td>Biology</td>
<td></td>
</tr>
<tr>
<td>Business</td>
<td>15</td>
</tr>
<tr>
<td>Criminal Justice</td>
<td>1</td>
</tr>
<tr>
<td>Divinity School</td>
<td></td>
</tr>
<tr>
<td>Education</td>
<td>4</td>
</tr>
<tr>
<td>Engineering</td>
<td>2</td>
</tr>
<tr>
<td>History</td>
<td>1</td>
</tr>
<tr>
<td>Journalism</td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td></td>
</tr>
<tr>
<td>Political Science</td>
<td>3</td>
</tr>
<tr>
<td>PreMed</td>
<td>1</td>
</tr>
<tr>
<td>Psychology</td>
<td>2</td>
</tr>
</tbody>
</table>
In Table Two below appear, in alphabetic order, data relative to religions in which the survey sample affiliated. A chi-square test of independence proved to be significant ($x^2 = 38.43$, $df = 18$, $p = .003$).

Table 2

Religions with which Subjects Affiliated

<table>
<thead>
<tr>
<th>Religion</th>
<th>Student-Athletes</th>
<th>Fraternity Men</th>
<th>Independents</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baptist</td>
<td>8</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Catholic</td>
<td>3</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Disciple of Christ</td>
<td>1</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Episcopal</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Lutheran</td>
<td>2</td>
<td>3</td>
<td>1</td>
</tr>
</tbody>
</table>
A chi-square test of independence among and between the three groups showed no difference in regard to marital status. Approximately 93.9% of the student-athletes were not married, while 100% of the fraternity men and 96.8% of the independents were not married. Only 6.1% of the student-athletes and 3.2% of the independents were married.

A chi-square test of independence among and between the three groups showed no difference in regard to the presence of a family history of alcohol problems. Of the student-athletes, 60.6% said that there had been alcohol problems in the family, while 39.4% said that there was not a history of alcohol problems in the family. Of the fraternity men, 48.5% had a family history of alcohol problems, 45.5% had no family history of alcohol problems, and 6.1% did not know. Of the independents, 45.2% had a family history of alcohol problems, 48.4% had no history of alcohol problems in the family, while
6.5% had no knowledge of family history of alcohol problems.

**Hypothesis One:** The three affiliation groups will differ in alcohol consumption rates.

Hypothesis one was tested in two manners. First, a chi-square test of independence using a 3 x 6 table demonstrated significant differences between the three groups ($x^2 = 21.65$, $df = 10$, $p = .017$). In Table Three below appear data relative to alcohol consumption patterns, as defined by Redman, et al., (1987), according to group affiliation.

Table 3

*Alcohol Consumption Patterns by Group Affiliation*

<table>
<thead>
<tr>
<th>Alcohol Consumption Pattern</th>
<th>Student-Athletes f (%)</th>
<th>Fraternity Men f (%)</th>
<th>Independents f (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>2 (6.1)</td>
<td>4 (12.1)</td>
<td>7 (22.6)</td>
</tr>
<tr>
<td>1 - 7</td>
<td>5 (15.1)</td>
<td>6 (18.2)</td>
<td>9 (29.0)</td>
</tr>
<tr>
<td>8 - 14</td>
<td>10 (30.3)</td>
<td>3 (9.1)</td>
<td>5 (16.1)</td>
</tr>
<tr>
<td>15 - 21</td>
<td>2 (6.1)</td>
<td>10 (30.3)</td>
<td>7 (22.6)</td>
</tr>
<tr>
<td>22 - 28</td>
<td>3 (9.1)</td>
<td>1 (3.0)</td>
<td></td>
</tr>
<tr>
<td>29 +</td>
<td>11 (33.3)</td>
<td>9 (27.3)</td>
<td>3 (9.7)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>33 (100)</td>
<td>33 (100)</td>
<td>31 (100)</td>
</tr>
</tbody>
</table>
Next, a simple one-way ANOVA was conducted where group affiliation acted as
the independent variable and drinks per week, as reported in the RD, acted as the
dependent variable. Results showed a significant difference in the total number of drinks
per week consumed among and between the three groups ($F = 5.72$, $df = 2/94$, $p = .005$).
The mean number of drinks for the student-athlete group was 24.82 with a standard
deviation of 22.02. The mean number of drinks for the fraternity men was 20.94 with a
standard deviation of 20.60. The independent group reported the lowest mean number of
drinks, 9.74, with a standard deviation of 9.77. The Scheffe post hoc multiple
comparison test showed the student-athlete group to be significantly different from the
independent group, with neither of these groups demonstrating statistically significant
differences from the fraternity group.

**Hypothesis Two**: The three affiliate groups will differ in consequences experienced as a
result of drinking alcohol.

Hypothesis two was tested utilizing a $3 \times 2$ chi-square test of independence on
each consequence. Consequences investigated included having driven under the influence,
been a passenger with someone under the influence, and participated in sexual activity
while under the influence.

The chi-square test of independence regarding “driven under the influence”
showed the three groups not to be significantly different. While 54.5% of the student-
athletes and 63.6% of the fraternity men had driven under the influence, 45.2% of the
independent men reported having done so in the previous year.
The chi-square test of independence regarding "been a passenger with someone driving under the influence" resulted in a nonsignificant chi-square. While 54.5% of the student-athletes and 63.6% of the fraternity men reported that they had been a passenger with a driver under the influence, 51.6% of the independent men also reported having engaged in similar behavior.

The chi-square test of independence regarding "participated in sexual activity while under the influence" showed the three groups to be different ($\chi^2 = 16.43, df = 2, p = .000$). While 78.8% of the student-athletes and 60.6% of the fraternity men reported engaging in this behavior, only 29.0% of the independent men reported engaging in sexual activity while under the influence of alcohol.

**Hypothesis Three**: The three affiliate groups will differ on each subscale of the Effects of Drinking Alcohol (EDA) Scale.

Hypothesis three was tested utilizing separate one-way ANOVAs on each of the eight subscale scores of the EDA. EDA subscale score was set as the dependent variable with affiliate group serving as the independent variable. Results are presented in Table Four below.

**Table 4**

ANOVA Summaries for EDA Subscales by Group Affiliation

<table>
<thead>
<tr>
<th>EDA Subscale</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive/Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EDA Subscale</td>
<td>SS</td>
<td>df</td>
<td>MS</td>
<td>F</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------</td>
<td>----</td>
<td>------</td>
<td>----</td>
</tr>
<tr>
<td>Between Ss</td>
<td>12.34</td>
<td>2</td>
<td>6.17</td>
<td>.073</td>
</tr>
<tr>
<td>Within Ss</td>
<td>7,953.10</td>
<td>94</td>
<td>84.61</td>
<td></td>
</tr>
<tr>
<td><strong>Emotional</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Ss</td>
<td>54.28</td>
<td>2</td>
<td>27.14</td>
<td>.462</td>
</tr>
<tr>
<td>Within Ss</td>
<td>5,527.16</td>
<td>94</td>
<td>58.8</td>
<td></td>
</tr>
<tr>
<td><strong>Fun</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Ss</td>
<td>295.47</td>
<td>2</td>
<td>147.74</td>
<td>2.291</td>
</tr>
<tr>
<td>Within Ss</td>
<td>6,060.60</td>
<td>94</td>
<td>64.47</td>
<td></td>
</tr>
<tr>
<td><strong>Physical</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Ss</td>
<td>46.95</td>
<td>2</td>
<td>23.47</td>
<td>.321</td>
</tr>
<tr>
<td>Within Ss</td>
<td>6,865.81</td>
<td>94</td>
<td>73.04</td>
<td></td>
</tr>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Ss</td>
<td>558.32</td>
<td>2</td>
<td>279.16</td>
<td>2.33</td>
</tr>
<tr>
<td>Within Ss</td>
<td>11,272.86</td>
<td>94</td>
<td>119.92</td>
<td></td>
</tr>
<tr>
<td><strong>Social Facilitation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Ss</td>
<td>423.80</td>
<td>2</td>
<td>211.90</td>
<td>3.17*</td>
</tr>
<tr>
<td>Within Ss</td>
<td>6,287.94</td>
<td>94</td>
<td>66.89</td>
<td></td>
</tr>
<tr>
<td><strong>Social</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Ss</td>
<td>612.94</td>
<td>2</td>
<td>306.47</td>
<td>2.33</td>
</tr>
<tr>
<td>Within Ss</td>
<td>12,341.24</td>
<td>94</td>
<td>131.29</td>
<td></td>
</tr>
</tbody>
</table>
Sch%C3%A9e post hoc multiple comparison tests performed on the subscales demonstrated significant differences between the means to be between the student-athlete group \((M = 43.74, SD = 7.43)\) and the independent group \((M = 38.98, SD = 8.46)\) on the Social Facilitation Subscale, and between the student-athlete group \((M = 41.31, SD = 11.27)\) and the fraternity group \((M = 34.85, SD = 9.43)\) on the Tension Reduction Subscale.

**Hypothesis Four:** The three affiliate groups will differ in the reported content of their Early Recollections.

Hypothesis four was tested through use of a 2 x 3 chi-square test of independence performed on each of the 37 variables. The contents of early recollections were analyzed independently by two judges. The interjudge reliability test on ERs of ten randomly selected subjects resulted in 93.45% agreement.

In the character cluster, both the variable “non-family members” \((x^2 = 6.95, df = 2, p = .031)\) and the variable “group” \((x^2 = 8.9, df = 2, p = .012)\) demonstrated significant differences between the three groups. Approximately 45% of both the fraternity group
and the independent group presented non-family members in their ERs, while only 18.2% of the student-athlete group had non-family members present. The fraternity group mentioned the presence of a group more frequently, 27.3%, than did either the student-athlete, 3.0%, or independent group, 9.7%.

In the theme cluster, “birth of a sibling” ($x^2 = 6.59, \text{df} = 2, p = .037$), “illness/injury” ($x^2 = 6.60, \text{df} = 2, p = .037$), and “mutuality” ($x^2 = 6.06, \text{df} = 2, p = .048$) significantly differed among and between the three groups. Neither members of the student-athlete group nor the fraternity group mentioned the birth of a sibling in their ERs, while 9.7% of the independent group recalled such an event. Over half of the fraternity group members (57.6%) and the independent group members (58.1%) included a personal illness or injury in their ER, while only 30.3% of the student-athletes included illness or injury. Both members of the student-athlete group (36.4%) and the independent group (41.9%) mentioned mutuality more so than did members of the fraternity group (15.2%). Mutuality has been defined as “a friendly, social, reciprocal, or cooperative experience with others” (Manaster & Perryman, 1974).

In the concern-with-details cluster, only the auditory category achieved significance ($x^2 = 7.18, \text{df} = 2, p = .028$). While 18.2% of the student-athletes’ and 21.2% of the fraternity men’s ERs contained auditory references, none of the independents’ ERs did so.

In the setting cluster, both the “inside home” category ($x^2 = 5.99, \text{df} = 2, p = .050$) and the “inside non-family home” category ($x^2 = 8.65, \text{df} = 2, p = .013$) achieved significance. The student-athlete group reported the highest proportion of the events in
their ERs occurring inside the home (48.5%), with the fraternity group reporting next highest (36.4%), and the independent group reporting the lowest proportion (19.4%). None of the student-athletes reported events in their ERs occurring inside a non-family home, while 24.2% of the fraternity group members and 16.1% of the independent group members reported events occurring at this locale.

In the active-passive cluster, 81.8% of the student-athlete group, 74.2% of the independent group, and 54.5% of the fraternity group reported “passive” type occurrences in their ERs, demonstrating a significant difference between the three groups ($X^2 = 6.22, df = 2, p = .045$). Passive occurrences are those in which the subject is acted upon rather than those in which the subject initiates the action (Manaster & Perryman, 1974).

None of the internal-external control cluster variables nor the affect cluster variables achieved significance in the chi-square analyses.

**Hypothesis Five:** Problem drinkers and non-problem drinkers within each of the three affiliate groups will differ on each subscale of the Effects of Drinking Alcohol Scale.

Hypothesis five was analyzed through use of a 2 x 3 factorial design with drinking class (problem and non-problem) as one variable and group affiliation (student-athlete, fraternity, and independent) as the other. Separate analyses were run for each of the eight subscales. Results are presented in Table Five below.
Table 5

Summary of Two-Way ANOVA's of EDA Subscales

<table>
<thead>
<tr>
<th>EDA Subscale</th>
<th>Drinking Class</th>
<th>Group</th>
<th>DC x Group</th>
<th>Within</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive/Performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS</td>
<td>266.71</td>
<td>44.08</td>
<td>114.62</td>
<td>82.25</td>
</tr>
<tr>
<td>F</td>
<td>3.24</td>
<td>.54</td>
<td>1.39</td>
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<tr>
<td>Emotional</td>
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</tr>
<tr>
<td>MS</td>
<td>368.12</td>
<td>50.89</td>
<td>231.99</td>
<td>52.04</td>
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<tr>
<td>F</td>
<td>7.07**</td>
<td>.98</td>
<td>4.46*</td>
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<tr>
<td>Fun</td>
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<td>MS</td>
<td>594.07</td>
<td>133.01</td>
<td>90.02</td>
<td>57.96</td>
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<tr>
<td>F</td>
<td>10.25**</td>
<td>2.30</td>
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<tr>
<td>MS</td>
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<tr>
<td>F</td>
<td>.90</td>
<td>.10</td>
<td>.99</td>
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<td>Sex</td>
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<td>MS</td>
<td>133.41</td>
<td>360.71</td>
<td>385.19</td>
<td>113.77</td>
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<tr>
<td>F</td>
<td>1.17</td>
<td>3.17*</td>
<td>3.39*</td>
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</tr>
<tr>
<td>Social Facilitation</td>
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<tr>
<td>MS</td>
<td>127.93</td>
<td>257.65</td>
<td>65.21</td>
<td>66.33</td>
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<tr>
<td>F</td>
<td>1.93</td>
<td>3.88*</td>
<td>.98</td>
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Three of the EDA subscales (Cognitive/Performance, Physical, Social) did not demonstrate a significant interaction effect nor main effect. However, the Emotional subscale demonstrated significant interaction effect and drinking class main effect. While problem drinkers exhibited a significantly lower marginal mean score on this scale ($M = 21.22$, $SE = 0.92$) than did non-problem drinkers ($M = 25.36$, $SE = 1.26$) overall, this pattern did not hold true across all affiliation groups. Members of the independent group who had been classified as non-problem drinkers scored lower ($M = 21.43$, $SD = 9.31$) than did their problem drinking counterparts ($M = 23.73$, $SD = 8.32$), a pattern not present in the fraternity and student-athlete groups. Within the student-athlete group, the problem drinkers scored lower ($M = 19.09$, $SD = 7.14$) than did the non-problem drinkers.
(M = 25.75, SD = 6.68), as did the problem drinkers (M = 20.83, SD = 6.24) and non-problem drinkers (M = 28.89, SD = 3.33) within the fraternity group.

Results of the ANOVA on the Fun subscale demonstrated a significant main effect for drinking class with no significant interaction effect. Overall, problem drinkers had a higher score on the Fun subscale marginal mean estimate (M = 47.72, SE = 0.97) than did non-problem drinkers (M = 42.46, SE = 1.33). Across all three affiliate groups, the problem drinkers scored higher than did the non-problem drinkers. In the fraternity group, the problem drinkers exhibited a mean score of 48.13 (SD = 7.63), while the non-problem drinkers had a mean score of 42.59 (SD = 7.32). In the student-athlete group, the problem drinkers (M = 47.88, SD = 7.79) scored higher than did the non-problem drinkers (M = 46.21, SD = 6.28). And in the independent group, the problem drinkers had a mean score of 47.16 (SD = 6.69), while the non-problem drinkers had a mean score of 38.57 (SD = 9.29).

The Sex subscale demonstrated both significant interaction effect and affiliate group main effect. Overall, the estimated marginal mean score of the student-athlete group (M = 37.84, SE = 1.97) differed significantly (p < .05) from that of the independent group (M = 31.05, SE = 1.93); however, upon further examination of the mean scores, the student-athlete group demonstrates a different pattern between problem and non-problem drinkers’ scores than the other two groups. In the student-athlete group, the non-problem drinkers (M = 40.00, SD = 8.87) exhibited a higher mean score than did the problem drinkers (M = 35.68, SD = 13.63). This pattern was reversed for both the fraternity group and the independent group. In the fraternity group, the mean score of the non-problem
drinkers (M = 34.72, SD = 10.49) was less than that of the problem drinkers (M = 36.56, SD = 9.66). And in the independent group, the non-problem drinkers had a mean score of 26.07 (SD = 12.00), while the problem drinkers had a mean score of 36.03 (SD = 9.31).

The results of the ANOVA on the Social Facilitation subscale show a significant main effect for affiliate group with no significant interaction effect. The estimated marginal mean score of the student-athlete group (M = 43.90, SE = 1.50) was significantly (p < .05) higher than that of the fraternity group (M = 38.67, SE = 1.59) and that of the independent group (M = 38.81, SE = 1.47). However, it was interesting to note, that again the student-athlete group demonstrated a different pattern between problem and non-problem drinkers’ mean scores than the other two groups. In the student-athlete group, the non-problem drinkers (M = 44.39, SD = 4.90) exhibited a higher mean score than did the problem drinkers (M = 43.41, SD = 8.51). This pattern was reversed for both the fraternity group and the independent group. In the fraternity group, the mean score of the non-problem drinkers (M = 36.30, SD = 10.30) was less than that of the problem drinkers (M = 41.04, SD = 7.74). And in the independent group, the non-problem drinkers had a mean score of 37.02 (SD = 8.27) while the problem drinkers had a mean score of 40.59 (SD = 8.52).

The results of the ANOVA on the Tension Reduction subscale show a significant main effect for affiliate group with no significant interaction effect. The estimated marginal mean score of the student-athlete group (M = 41.52, SE = 1.86) was significantly (p < .05) higher than that of the fraternity group (M = 33.80, SE = 1.97). However, the estimated marginal mean score of the independent group (M = 37.35, SE = 1.82) did not
differ significantly from the other two groups. While the interaction effect did not
demonstrate significance, once again the student-athlete group exhibited a different pattern
between problem and non-problem drinkers’ mean scores than the other two groups. In
the student-athlete group, the non-problem drinkers (M = 42.12, SD = 6.88) demonstrated
a higher mean score than did the problem drinkers (M = 40.91, SD = 13.06). This pattern
was reversed for both the fraternity group and the independent group. In the fraternity
group, the mean score of the non-problem drinkers (M = 31.48, SD = 8.68) was less than
that of the problem drinkers (M = 36.11, SD = 9.56). And in the independent group, the
non-problem drinkers had a mean score of 36.67 (SD = 11.98) while the problem drinkers
had a mean score of 38.04 (SD = 6.24). Within each drinking classification, the student-
athlete group had the highest mean score, followed by the independent group and the
fraternity group.

Hypothesis Six: Problem drinkers and non-problem drinkers within each of the three
affiliate groups will differ in the content of reported Early Recollections.

Hypothesis six was tested through use of a 2 x 3 chi-square test of independence
performed on each of the 37 variables. Separate analyses were performed for each
affiliate group.

The student-athlete group had more variables demonstrate significance between
non-problem drinkers and problem drinkers. In the character cluster, 27.3% of the non-
problem drinkers mentioned “mother” in their ERs, while 68.2% of the problem drinkers
did so (x^2 = 4.95, p = .026). The problem drinkers mentioned “father” (x^2 = 4.59, p =
.032) in their ERs at a higher rate than did the non-problem drinkers, 81.8% and 45.5%, respectively. The problem drinkers also mentioned “siblings” ($x^2 = 4.36, p = .037$) in their ERs at a higher rate, 45.5%, than did the non-problem drinkers, 9.1%. In the concern-with-details cluster, the “visual” ($x^2 = 4.44, p = .035$) and “motor” ($x^2 = 4.59, p = .032$) variables demonstrated significant differences between the drinking classes. All of the non-problem drinkers’ ERs contained a visual reference while 68.2% of the problem drinkers’ ERs contained such a reference. On the other hand, 81.8% of the problem drinkers’ ERs contained a motor reference whereas only 45.5% of the non-problem drinkers’ ERs made reference to motor skills. In the setting cluster, variables that demonstrated significant differences between non-problem and problem drinkers included “traveling” ($x^2 = 11.79, p = .001$) and “unclear locale” ($x^2 = 11.52, p = .001$). None of the problem drinkers made reference to traveling in their ERs while 45.5% of the non-problem drinkers recalled traveling in their ERs. The locale in which the ER occurred could not be determined in a larger percentage of the non-problem drinkers’ ERs than in the problem drinkers’ ERs, 72.7% and 13.6%, respectively. In the student-athlete group, there were no variables which demonstrated significant differences between drinking classes in the theme cluster, the active-passive cluster, the internal-external control cluster, nor the affect cluster.

In reference to the fraternity group, no variables within the character cluster, the concern-with-details cluster, the setting cluster, the active-passive cluster, nor the affect cluster demonstrated significant differences between the two drinking classes. In the theme cluster, the only variable demonstrating significance was the “punishment” variable
(\(x^2 = 3.99, p = .046\)). Punishment was mentioned in 44.4% of the ERs of the non-problem drinkers and in 12.5% of the problem drinkers' ERs. In the internal-external control cluster, the "external control" variable demonstrated significant differences between the drinking classes (\(x^2 = 3.96, p = .047\)), with 100% of the non-problem drinkers recalling externally controlled situations and 66.7% of the problem drinkers recalling such situations.

While not demonstrating significance, it is interesting to note that 66.7% of the problem drinkers included "illness or injury" in their ERs while only 33.3% of the non-problem drinkers did so. Also, 25% of the problem drinkers recalled situations taking place in some type of "medical" setting while none of the non-problem drinkers' ERs took place in such a setting.

As for the independent group, no variables within the character cluster, the theme cluster, the concern-with-details cluster, the active-passive cluster, nor the affect cluster demonstrated significance. However, within the setting cluster, "inside home" (\(x^2 = 9.03, p = .003\)) and "unclear locale" (\(x^2 = 7.37, p = .007\)) both proved to differentiate between non-problem and problem drinkers. Forty-three percent of non-problem drinkers' ERs took place inside the subjects' home whereas none of the problem drinkers' ERs took place in this setting. In fact, in 52.9% of the problem drinkers' recollections the locale was unclear, while this was the case for only 7.1% of the non-problem drinkers. In the internal-external control cluster, the "external control" variable demonstrated significant results (\(x^2 = 4.91, p = .027\)), with 100% of the non-problem drinkers recalling a situation in which the subject did not accept responsibility for the action and 70.6% of the problem
drinkers recalling similar situations.

While not achieving statistical significance, several variables approached significance for the independent group. The inclusion of "non-family members" in the recollection approached significance ($x^2 = 3.77, p = .052$), with 64.3% of the non-problem drinkers including such characters and 29.4% of the problem drinkers doing so. In the theme cluster, "birth of a sibling" approached significance ($x^2 = 2.74, p = .098$), with none of the non-problem drinkers recalling such an event and 17.6% of the problem drinkers recalling such an event. In the setting cluster, the "medical" variable approached significance ($x^2 = 3.78, p = .052$), with none of the non-problem drinkers' ERs taking place in such a locale but 23.5% of the problem drinkers' ERs taking place there.

**Hypothesis Seven:** The content of reported Early Recollections (ERs) and Effects of Drinking Alcohol (EDA) subscale scores will contribute to the prediction of alcohol consumption rates of subjects.

Hypothesis seven was determined in a series of stepwise multiple regression analyses. EDA subscale scores and ER variables served as the predictor variables while total number of drinks per week served as the criterion variable. The EDA subscales selected for inclusion in the model were the Emotional Scale, the Fun Scale, the Sex Scale, the Social Facilitation Scale, and the Tension Reduction Scale. The ER variables selected for inclusion in the model were "Unclear Locale" and "External Control." The EDA subscales selected were those that proved to have significant main effects or interaction effect in previous analyses ($p < .05$). The ER variables were selected because they
demonstrated significance ($p < .05$) between non-problem drinkers and problem drinkers for at least two of the three affiliate groups. Interaction terms were not entered into the equation because of the number of variables entered into the model and the comparatively small sample size (Johnson, 1994). A predictive variable was included in the equation if it provided a significant ($p < .05$) contribution to the prediction of alcohol consumption.

Table Six summarizes the multiple regression analysis between reported alcohol consumption and all predictors that entered the equation at a significant level.

Table 6

**Multiple Regression of Reported Alcohol Consumption for Predicted Variables**

<table>
<thead>
<tr>
<th>Predictors</th>
<th>$F$ value for $R^2$ change</th>
<th>Adj. $R^2$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td>$F = 27.08$, 1/95 $df^*$</td>
<td>.214</td>
<td>.471</td>
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<tr>
<td>Fun Scale Score (EDA)</td>
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<td></td>
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<tr>
<td><strong>Step 2</strong></td>
<td>$F = 14.01$, 1/94 $df^*$</td>
<td>.308</td>
<td>.446</td>
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<tr>
<td>Fun Scale Score (EDA)</td>
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<tr>
<td>Emotional Scale Score (EDA)</td>
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<td>-.319</td>
<td></td>
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<tr>
<td><strong>Step 3</strong></td>
<td>$F = 9.59$, 1/93 $df^*$</td>
<td>.366</td>
<td>.281</td>
</tr>
<tr>
<td>Fun Scale Score (EDA)</td>
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<td>Sex Scale Score (EDA)</td>
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<td>.305</td>
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</tr>
<tr>
<td><strong>Step 4</strong></td>
<td>$F = 10.90$, 1/92 $df^*$</td>
<td>.427</td>
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</table>
Dependent variable: total number of drinks per week

<table>
<thead>
<tr>
<th>Predictors</th>
<th>$F$ value for $R^2$ change</th>
<th>Adj. $R^2$</th>
<th>$\beta$</th>
</tr>
</thead>
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<tr>
<td>Fun Scale Score (EDA)</td>
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<tr>
<td>Emotional Scale Score (EDA)</td>
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<tr>
<td>Sex Scale Score (EDA)</td>
<td>0.316</td>
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<td></td>
</tr>
<tr>
<td>External Control (ER)</td>
<td>-0.257</td>
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<td></td>
</tr>
</tbody>
</table>

* $p < .005$

** $p \leq .001$

The total amount of variance in alcohol consumption, as measured by total number of drinks per week, explained by the model was 42.7%. While the EDA subscales combined to accounted for a significant amount of the variation in alcohol consumption (36.6%), the ER variable of “external control” explained an additional 6% of the variance ($R^2$ change $p \leq .001$).

Summary

The examination of alcohol consumption patterns demonstrated that student-athletes and fraternity men in the study reportedly drank alcohol at a significantly higher rate than did the independent men. These student-athletes and fraternity men also reported engaging in more risk-taking behaviors such as driving under the influence, being
a passenger with someone driving under the influence, and participating in sexual activity while under the influence than did the independent men. The student-athletes in the study reportedly expected alcohol to facilitate their social interactions more so that the independent men in the study, while the student-athletes also expected alcohol to reduce their levels of stress more so than the fraternity men in the study.

Analysis of ERs demonstrated that both the fraternity men and the independent men in the study recalled non-family members at a higher rate than did the student-athlete men in the study, while the fraternity men recalled the presence of groups at a significantly higher rate than did the student-athletes and the independent men. None of the student-athletes nor the fraternity men recalled the birth of a sibling. More than half of the fraternity men and independent men in the study included personal illness or injury in their recollections, while less than one-third of the student-athletes included such a theme.

Some form of “friendly, social, reciprocal, or cooperative experience with others” (mutuality) was mentioned in the recollection by a higher percentage of student-athletes and independent men than by fraternity men in the study. Student-athletes in the study recalled occurrences inside the home more frequently than did members of the other two groups, with no recollection from any member of the student-athlete group including an occurrence inside the home of a non-family member. This non-family setting was mentioned, however, by some members of the fraternity group and the independent group.

A significant percentage of members from both the student-athlete group and the independent group recalled events in which they were “passive,” or being acted upon rather than the initiator of the action.
Results from the analysis of expectations from drinking alcohol between problem and non-problem drinkers within each affiliation group demonstrated that problem drinkers within the student-athlete and fraternity groups felt less negative emotions related to their alcohol consumption than did their non-problem drinking counterparts. However, non-problem drinkers within the independent group expected more negative emotional consequences than did their problem drinking cohorts. Across all three affiliate groups, problem drinkers expected to have significantly more fun after consuming alcohol than did the non-problem drinkers. Within the student-athlete group, problem drinkers expected alcohol consumption to have less favorable effect on their sexual-related activities than did the non-problem drinking student-athletes. However, within both the fraternity group and the independent group, the non-problem drinkers expected alcohol consumption to affect their sexual-related activities negatively more so than did their problem drinking counterparts. More non-problem drinking student-athletes within the study expected alcohol to enhance their social behavior than did problem drinking student-athletes within the study. However, this tendency was reversed for both the fraternity group and the independent group, where more problem drinkers expected alcohol to facilitate their social interactions than did the non-problem drinking members. Overall, student-athletes expected alcohol consumption to reduce stress more so than the other two affiliate groups. Further analysis showed that non-problem drinking student-athletes expected alcohol to reduce tension more so than did their problem drinking cohorts. However, within both the fraternity group and the independent group, the problem drinkers had higher expectations of alcohol’s tension reducing effects than did the non-problem
drinkers. The Cognitive/Performance, Physical, and Social subscales of the EDA did not demonstrate a significant interaction nor main effect.

Analyses of ERs between problem drinkers and non-problem drinkers within each affiliate group demonstrated that within the student-athlete group problem drinkers recalled occurrences which included their mothers, their fathers, their siblings, and motor-type activities at a higher incidence than did their non-problem drinking cohorts. The non-problem drinking members of the student-athlete group included visual-type references, traveling, and events taking place at an unclear locale in more of their recollections than did the problem drinking student-athletes. Within the fraternity group, problem drinkers recalled occurrences which included some type of illness or injury at a higher rate than did their non-problem drinking cohorts. Also, the problem drinkers reported more recollections taking place in medical settings. The non-problem drinking fraternity members had a higher incidence of punishment in their recollections than did the problem drinking members. This group also reported more situations which were externally controlled than did the problem-drinking fraternity members in this study. Within the independent group, more of the problem drinkers' ERs included the birth of a sibling, took place in a medical setting, and an indeterminable locale than did the non-problem drinkers' ERs. The non-problem drinkers' ERs included more occurrences taking place inside the family home, non-family members, and situations in which the subject perceived himself to not be in control more so than did the problem drinkers' ERs.

Stepwise multiple regression analyses utilizing total number of drinks per week as the criterion variable with select EDA subscales and ER variables as the predictor
variables determined that the EDA Fun Scale, the EDA Emotional Scale, the EDA Sex Scale, and the External Control ER explained a significant amount of the variation in alcohol consumption rates.

Conclusions

_Hypothesis One:_ The three affiliation groups will differ in alcohol consumption rates.

Results from the analyses pertaining to hypothesis one revealed that indeed differences did exist between the three groups in the amount of alcohol consumed the week prior to survey completion. The chi-square analyses demonstrated that members of the fraternity group drank alcohol at a much higher rate than did either the student-athlete group or the independent group. A larger percentage of the fraternity men (60.6%) drank 15 or more drinks per week than did the student-athlete group (48.5%) or the independent group (32.3%). However, a larger percentage of the student-athlete group (33.3%) indicated drinking 29 or more drinks per week than did the fraternity group (27.3%) or the independent group (9.7%). The ANOVA conducted on the mean number of drinks consumed per week demonstrated that the student-athlete group drank more alcohol, along with the fraternity group, than did the independent group. These results suggest that the student-athletes and fraternity men in this study, drank at a more excessive rate than did the independent men. It is important to note that while many of the student-athletes drank alcohol at a moderate rate, this group contained the largest percentage of drinkers who drank 29 or more drinks per week. Further investigation of the data revealed that fraternity men drank moderately more frequently than did the other groups,
however, the student-athletes seemed to drink more excessively when they did drink. Independent men seemed to drink less frequently and when they did drink, drank less excessively.

While the findings concerning college student-athlete drinking have been somewhat inconsistent, the current results seem to support earlier findings (Wechsler, et al., 1997) where 61% of the men involved in intercollegiate athletics reported binge drinking while 43% of men not competing in intercollegiate athletics reported binge drinking in the two weeks prior to the survey. One national study of male varsity athletes found that 90% had used alcohol in the previous year (Anderson, Albrecht, McKeag, Hough, & McGrew, 1991). These data have lead some administrators to conclude that “students who are heavily involved in intercollegiate athletics are more likely to go on a binge than students who do not play or highly value intercollegiate sports,” (Naughton, 1996). The College Alcohol Study (Wechsler, et al., 1997) also determined that a greater proportion of men involved in athletics engaged in a “frequent heavy drinking lifestyle,” a conclusion not supported by the current data. However, findings regarding the excessive drinking reported by the student-athlete group is a notable concern since the majority of this group (60.6%) reported having a history of alcoholism in their families.

Current data regarding the drinking habits of fraternity men also seems to support previous research (Wechsler, Dowdall, Maenner, Gledhill-Hoyt, & Lee, 1998; Wechsler, et al, 1994; Alterman, et al., 1990). According to the most current research regarding college student drinking, fraternities “continue to be at the center of the campus alcohol culture” (Wechsler, et al., 1998). Results from the 1998 College Alcohol Survey
demonstrated that 2 of 3 fraternity members were classified as binge drinkers and for fraternity members living in Greek houses, 4 of 5 of these students were classified as binge drinkers and half were considered frequent binge drinkers (Wechsler, et al., 1998). Wechsler, et al. (1998) provided the rationale that fraternities often function as a center for social activities for many males on the college campus and that the fraternity culture continues to support excessive alcohol consumption despite highly publicized alcohol-related tragedies and continuing examination of alcohol policies.

However, there exists a persistent question as to whether the social environment of fraternities fosters alcohol abuse or whether new students who are already heavy drinkers are more inclined to want to join a fraternity. Two national studies have shown that new students who are heavy drinkers are attracted to fraternities and apparently perceive the fraternity subculture as supportive of heavy drinking (Schall, Kemeny, & Maltzman, 1992; Werner & Greene, 1992). According to Wechsler, et al., (1998) “a major determinant of college binge drinking is students’ alcohol use while they were in high school” (p. 67). However, researchers at the University of Alabama found that members of fraternities increased their drinking after beginning college more than other students. Nearly 40% of fraternity members who had been low-level drinkers (having three or fewer drinks in a single sitting) in high school became high-level drinkers (having four or more drinks in a single sitting) in college. In contrast, only 17% of male students not in fraternities showed similar increases in drinking from high school to college (Lo & Globetti, 1995).
Hypothesis Two: The three affiliate groups will differ in consequences experienced as a result of drinking alcohol.

Results from the analyses associated with hypothesis two showed that the groups did not differ significantly in regard to driving-related behaviors but did differ significantly in regard to sex-related behaviors. While not statistically significant, over half of the student-athletes and fraternity men reported having driven under the influence or been a passenger with someone who had driven under the influence. A majority of the student-athletes and fraternity men in this study also reported engaging in sexual activity while under the influence, an activity reported by less than one-third of the independent men. These data seem to suggest that student-athletes and fraternity men do engage in more risky behaviors than do their independent counterparts, as previously reported by Leichliter, Meilman, Presley, and Cashin (1998) and Koss and Gaines (1993).

According to researchers, student-athletes may engage more frequently in at-risk behaviors because this population often feels more pressure than the general student population to perform both inside and outside the classroom, thus feeling the need to 'vent,' (Grossman, Gieck, Freedman, & Fang, 1993). Also, student-athletes may experience stress due to isolated living conditions in athletic residence halls and long hours spent practicing, training, and traveling (Pinkerton, Hinz, & Barrow, 1989). Some athletes may turn to alcohol in an attempt to cope with these multiple demands. "Insecurity about identity and self-image, an intense fear of failure, fear of aggression (where aggression, an inherent aspect of most college sports, is confused with violence), and peer pressure" are other factors that may incline an athlete to engage in these types of
In regard to sex-related behaviors, Naughton (1996) suggested that student-athletes have more sexual partners in general than other students thus increasing the opportunity for this group to engage in sexual activity, either under the influence or not. However, these data are still noteworthy as several studies have found male athletes to be more likely than other men on campus to commit sexual assaults (Fritner & Rubinson, 1993; Koss & Gaines, 1993; Parrot, Cummings, Marchell, & Hofher, 1994). In one study of victims of sexual aggression at a large midwestern university, male athletes were over represented among assailants described by the women surveyed. While only making up 2% of the total male population on campus, they made up 23% of the attackers in sexual assaults reported by the women and 14% in attempted sexual assaults (Fritner & Rubinson, 1993). Another study, utilizing an anonymous survey on sexual aggression of men, found that men on varsity, revenue-producing teams self-reported higher rates of sexually abusive behaviors ranging from rape to intimidation and illegal restraint (Koss & Gaines, 1993).

Involvement in all-male peer groups may protect some men from doubts about the inappropriateness of their behavior, especially when that behavior seems to be reinforced and condoned by the media. Media marketing techniques utilized by the alcohol beverage industry have been viewed as a major contributing factor in the promotion of risk-taking behaviors on the part of college student-athletes (DeJong, 1996). In his address to student-athlete peer educators at the Conference on Athletic Prevention, Programming, and Leadership Education, DeJong (1996) asserted that, “The very things that draw young
people to athletics are manipulated by the alcohol industry to draw young people to their products. Competition, winning. Risk-taking, pushing oneself to the limit. Teamwork. Those themes have a resonance with young people in general, they have a special resonance with student-athletes. Athletics and beer: Be a winner. Prove yourself. Be part of the group. And let's not forget -- be sexually attractive.” This tactic of image advertising allows consumers to envision their transformation from a less desirable past to a more desirable future. And it does this by manipulating images of the product user as a person with intelligence, power, status, and popularity (DeJong, 1996). The message to young men seems clear: alcohol, athletics, and sex are interconnected.

Engagement in at-risk behaviors among fraternity men after consuming alcohol seems to be an important aspect of the fraternity culture as well (Larimer, Irvine, Kilmer, & Marlatt, 1997; Wechsler, Kuh, & Davenport, 1996). Not only does fraternity membership provide frequent opportunities to party, but the manner in which new members are inducted and what they learn about alcohol use and related acceptable activities, allows for the continuation of at-risk alcohol-related behaviors. Wechsler, Kuh, and Davenport (1996) also cite the lack of influence of mature upperclass members to curtail at-risk behaviors on the part of younger members, as the older members often move away from the fraternity house due in large part to “the unseemly secondary effects of frequent binge drinking,” (p. 275). Thus, despite well-publicized alcohol-related tragedies within the fraternity system, it seems the conformist attitudes prevalent in fraternities (Pascarella, Edison, Whitt, Nora, Hagedorn, & Terenzini, 1996), induction activities which support excessive alcohol consumption and engagement in at-risk
behaviors, and a lack of mature leadership to set more socially responsible behavioral standards contribute to fraternity members high rates of participation in at-risk alcohol-related behaviors.

It should be noted that current research supports previous research conducted by Koss & Gaines (1993) which assessed the joint contribution of alcohol, athletics, fraternities, and other drug use to the prediction of sexual aggression. This research showed that 11% of the variance in the level of sexual aggression was accounted for by four variables including self-reported intensity of alcohol consumption and degree of athletic participation, but not fraternity affiliation. The alcohol and athletic variables also discriminated those subjects who reported participating in gang rapes from those not involved in the rapes.

Hypothesis Three: The three affiliate groups will differ on each subscale of the Effects of Drinking Alcohol (EDA) Scale.

Results from the analyses of hypothesis three demonstrated differences only on the Social Facilitation Subscale and the Tension Reduction Subscale. It seems that members of the student-athlete group, more than fraternity members and significantly more than independents, believe that alcohol will help them be more socially accepted, make them more outgoing, make it easier for them to socialize, help them to talk more freely, and make them friendlier. Members of the student-athlete group also seem to believe that drinking alcohol will help take away their negative moods and feelings, help them feel less stressed, and take their minds off their problems more than do members of the
independent group and significantly more than do fraternity members. These results seem to suggest that members of the student-athlete group drink more to enhance their social comfort and to reduce their perceived stress than do the members of the other two groups.

The fact that student-athletes indicated drinking to enhance socialization and relaxation seems to substantiate Epstein's (1996) suggestion that student-athletes drink to cope with their feelings of insecurity about their identity, self-image and socialization skills, as well as Pinkerton, Hinz, & Barrow's (1989) assertion that this population feels more stress due to intense scheduling demands. Statements from student-athletes made during a recent National Collegiate Athletic Association (NCAA) certification review revealed that student-athletes at this institution felt isolated from the larger context of social life and believed that students not involved in intercollegiate athletics, as well as faculty and staff, did not understand the demands placed on their time. Several of these student-athletes also commented on the pressure they felt to perform, academically, athletically, and socially due to their increased visibility within the community brought on because of their status as student-athletes, (Alexander, 1997).

It seems that members of the fraternity group did not view tension reduction as a primary motivation to drink alcohol, nor did they expect alcohol to significantly enhance their ability to interact socially. As the fraternity itself provides a mechanism by which members may congregate, interact, and bond, the subjects in the current study may not have viewed alcohol as the primary agent responsible for these outcomes. Previous research has demonstrated that fraternity membership itself is positively related to feelings of security and self-esteem (Astin, 1993), suggesting that fraternity members may not feel
the same insecurities related to identity and self-image nor may they feel the same pressures as do student-athletes, thus explaining why student-athletes have different desired expectations regarding alcohol consumption.

Current data seem to suggest that while student-athletes, as a group, have similar expectations related to the effects of alcohol, fraternity members and independent men have more varied expectations. This suggestion seems plausible, as most student-athletes have similar demands placed upon them due to scheduling, competition, and visibility. While members of fraternities may have a similar association, their lives are not as homogeneous, therefore, it is plausible that the effects they desire from consuming alcohol would not be as homogeneous. This possibly would seem even more plausible for the members of the independent group.

Hypothesis Four: The three affiliate groups will differ in the reported content of their Early Recollections.

Results from the analyses of hypothesis four demonstrated that both the fraternity men and the independent men in the study recalled non-family members at a higher rate than did the student-athlete men in the study, while the fraternity men recalled the presence of groups at a significantly higher rate than did the student-athletes and the independent men. None of the student-athletes nor the fraternity men recalled the birth of a sibling. More than half of the fraternity men and independent men in the study included personal illness or injury in their recollections, while less than one-third of the student-athletes included such a theme. Some form of “friendly, social, reciprocal, or cooperative
experience with others” (mutuality) was mentioned in the recollection by a higher percentage of student-athletes and independent men than by fraternity men in the study. Student-athletes in the study recalled occurrences inside the home more frequently than did members of the other two groups, with no recollection from any member of the student-athlete group including an occurrence inside the home of a non-family member. This non-family setting was mentioned, however, by some members of the fraternity group and the independent group. A significant percentage of members from both the student-athlete group and the independent group recalled events in which they were “passive,” or being acted upon rather than the initiator of the action.

Members of the student-athlete group recalled events which occurred inside the home and included family members more frequently than any other group, suggesting the significance of their interpersonal relationships with family members (Brown & Yalom, 1977). As student-athletes feel socially isolated from the rest of the campus community, it seems plausible that they would view their families of origin and a supportive environment such as their homes as important. Student-athletes also recalled a high frequency of events having a ‘mutuality’ theme, which seems rational due to the very nature of their being members of teams. Teamwork and the concept of being a team member is inherent in all intercollegiate sports. Even student-athletes who participate in individual sports, such as golf or tennis, are still considered to be members of a team. The fact that student-athletes also reported a high frequency of incidents in which they were passive also makes sense because, as the Director of Athletic Academics stated, “their lives are not their own,” (L. A. Smith, personal communication, September 28, 1998). An observation
which has been supported by Gould & Finch (1991), who note a recent trend in college athletics which allows student-athletes to make fewer and fewer decisions regarding their own lives.

The fact that fraternity members in this study reported a high frequency of non-family members in their recollections could suggest somewhat distant relationships with family members (Hafner, Fakouri, & Chesney, 1988), however, it could also be indicative of their comfort level with individuals outside of their families of origin. This latter assertion seems to be substantiated by the fact that fraternity members also reported a high frequency of recollections occurring inside the homes of non-family members. As these recollections were not just away from their personal homes, but inside a non-family members' home, this suggests that members placed significance on the nurturing environment of some other person's home. This could have paved the way for members of this group to have a higher comfort level in social settings once away from home, i.e., college. This seems to carry over to this group also recalling a higher frequency of groups in their recollections. It seems that much of the fraternity members' identities from an early age have been related to group participation, something on which they place significant value.

Members of the independent group also reported a high frequency of non-family members in their recollections which could, again, suggest somewhat distant relationships with family members (Hafner, Fakouri, & Chesney, 1988), or could also be indicative of their comfort level with individuals outside of their families of origin. And, similar to members of the fraternity group, this seems to be substantiated by the fact that members of
the independent group also reported a high frequency of recollections occurring inside the homes of non-family members. However, independent men also recalled the birth of a sibling at a higher frequency than any other group, suggesting a feeling of displacement or alienation within their families of origin. It could be stated that this group felt a closer bond with siblings in their families of origin, however, further inspection of their recollections confirmed the former, rather than the latter, assertion to be true. It seems that members of the independent group did not have strong family ties and perceived themselves to be less dependent on their families for support. However, the fact that mutuality themes occurred within this group's memories at a high frequency seems to indicate that members feel comfortable working with others. Thus, while not seeing themselves as dependent on family, they do see themselves as connected to some social structure.

**Hypothesis Five:** Problem drinkers and non-problem drinkers within each of the three affiliate groups will differ on each subscale of the Effects of Drinking Alcohol Scale.

Results from the analyses of hypothesis five demonstrated that problem drinkers within the student-athlete and fraternity groups felt less negative emotions related to their alcohol consumption than did their non-problem drinking counterparts. However, non-problem drinkers within the independent group expected more negative emotional consequences than did their problem drinking cohorts. Across all three affiliate groups, problem drinkers expected to have significantly more fun after consuming alcohol than did the non-problem drinkers. Within the student-athlete group, problem drinkers expected
alcohol consumption to have less favorable effect on their sexual-related activities than did
the non-problem drinking student-athletes. However, within both the fraternity group and
the independent group, the non-problem drinkers expected alcohol consumption to effect
their sexual-related activities negatively more so than did their problem drinking
counterparts. More non-problem drinking student-athletes within the study expected
alcohol to enhance their social behavior than did problem drinking student-athletes within
the study. However, this tendency was reversed for both the fraternity group and the
independent group, where more problem drinkers expected alcohol to facilitate their social
interactions than did the non-problem drinking members. Overall, student-athletes
expected alcohol consumption to reduce stress more than the other two affiliate groups.
Further analysis showed that non-problem drinking student-athletes expected alcohol to
reduce tension more than did their problem drinking cohorts. However, within both the
fraternity group and the independent group, the problem drinkers had higher expectations
of alcohol’s tension reducing effects than did the non-problem drinkers. The
Cognitive/Performance, Physical, and Social subscales of the EDA did not demonstrate a
significant interaction nor main effect.

Problem drinking student-athletes scored higher on only one subscale of the EDA, the Fun subscale. The expectations that alcohol will induce good feelings and a good
times seems to be a primary motivation for over-indulgence. The problem drinking
athletes did not expect alcohol to effect their emotions negatively therefore there was no
prohibiting factor to curb their excessive drinking. It seems, however, the negative
emotional effects of guilt, shame, and sadness related to alcohol consumption did prohibit
the non-problem drinking student-athletes from bingeing. Perhaps because this group did drink alcohol in a non-problematic manner, they seemed to expect alcohol to enhance their sexual behaviors, social interactions, and relaxation more than did the problem drinking student-athletes. This could also be attributed to the excessive manner in which the problem drinking student-athletes drank and the associated negative consequences they have experienced, such as poor sexual performance, verbal and physical fights, and stress brought on by these negative consequences.

Problem drinking fraternity members outscored their non-problem drinking cohorts on all of the positive expectation subscales (Fun, Sex, Social Facilitation, and Tension Reduction). As opposed to the student-athletes, this group did not drink as excessively and therefore may not have experienced the same negative effects on their sexual performance and social abilities. The only subscale on which the non-problem drinking fraternity members outscored their problem drinking cohorts was the Emotional subscale. Similarly to the student-athletes, the negative emotional effects of guilt, shame, and sadness related to alcohol consumption seemed to prohibit the non-problem drinking fraternity members from engaging in problem drinking behaviors.

While problem drinking members of the independent group were similar to members of the problem drinking fraternity group, they did differ on the negative Emotional subscale. The problem drinking members of the independent group had higher expectations of the negative emotional effects of alcohol consumption than did their non-problem drinking cohorts. It seems that the expected feelings of guilt, shame, and sadness did not have a limiting effect on this group’s drinking behaviors.
problem drinking independent group members had fewer positive or negative expectations concerning the effects of alcohol. Perhaps this reduction in expectations is due to the amount of alcohol consumed by this group. They did not drink enough to experience many of the effects, either positive or negative.

Thus, while there were similarities between problem drinking members of the fraternity and independent groups, these results did not hold true for problem drinkers within the student-athlete group. However, expectations regarding the negative emotional effects of alcohol consumption did seem to be a limiting factor for non-problem drinking members of both the fraternity and student-athlete groups but not for members of the independent group.

Hypothesis Six: Problem drinkers and non-problem drinkers within each of the three affiliate groups will differ in the content of reported Early Recollections.

Results from the analyses of hypothesis six demonstrated that within the student-athlete group problem drinkers recalled occurrences which included their mothers, their fathers, their siblings, and motor-type activities at a higher incidence than did their non-problem drinking cohorts. The non-problem drinking members of the student-athlete group included visual-type references, traveling, and events taking place at an unclear locale in more of their recollections than did the problem drinking student-athletes. Within the fraternity group, problem drinkers recalled occurrences which included some type of illness or injury at a higher rate than did their non-problem drinking cohorts. Also, the problem drinkers reported more recollections taking place in medical settings. The non-
problem drinking fraternity members had a higher incidence of punishment in their recollections than did the problem drinking members. This group also reported more situations which were externally controlled than did the problem-drinking fraternity members in this study. Within the independent group, more of the problem drinkers’ recollections included the birth of a sibling, took place in a medical setting, and an indeterminable locale than did the non-problem drinkers’ recollections. The non-problem drinkers’ recollections included more occurrences taking place inside the family home, non-family members, and situations in which the subject perceived himself to not be in control more than did the problem drinkers’ recollections.

The fact that problem drinking members of the student-athlete group recalled family members at such a high frequency seems to suggest that this group is more dependent on their families and, as stated earlier, since they may view their families as their primary source of support their being separated from them may produce increased stress which they cope with through excessive alcohol consumption. As this group also reported more motor activities in their recollections they could be more prone to acting out type behaviors. Problem drinkers and non-problem drinkers within the student-athlete group reported no similar content in their recollections to either of the other two groups.

The fact that non-problem drinkers within the fraternity group reported a high frequency of recollections involving some type of punishment suggests that one plausible explanation of their drinking behavior is to avoid punishment, especially since this group also reported a high frequency of externally controlled situations. It seems that there is little evidence to support the notion that problem drinking fraternity members are
engaging in their drinking behaviors to cope with any particular personality factors, however, those members who are not engaging in problematic drinking do so to avoid punishment.

The high frequency of recollections including the birth of a sibling within the problem drinking group of independent men is suggestive of the sense of displacement felt by the members of this group and could provide one plausible rationale for their problem drinking behaviors as they attempt to cope with these feelings. The non-problem drinking members of the independent group recalled a high frequency of recollections taking place inside the family home suggesting that these men feel more secure within their families of origin (Hafner, Fakouri, & Chesney, 1988).

Problem drinkers within the fraternity group and the independent group both recalled a high frequency of incidences occurring in medical settings, while non-problem drinkers within these two groups reported high frequency of externally controlled situations. This suggests that non-problem drinking fraternity and independent members may limit their alcohol consumption in an effort to avoid negative consequences which could be imposed by others, such as law enforcement officers or school officials. It is also plausible that problem drinkers within these groups have had positive experiences with injuries (recovery from) and medical settings and therefore feel somewhat invincible. If this is true, there would be no need for them to fear the negative consequence of injury which could result from their problem drinking behaviors.
Hypothesis Seven: The content of reported Early Recollections (ERs) and Effects of Drinking Alcohol (EDA) subscale scores will contribute to the prediction of alcohol consumption rates of subjects.

Results from the analyses of hypothesis seven determined that the EDA Fun Scale, the EDA Emotional Scale, the EDA Sex Scale, and the External Control ER explained a significant amount of the variation in alcohol consumption rates. Thus, the more subjects expected alcohol consumption to increase their good feelings and good times, the less they expected alcohol consumption to increase their feelings of guilt, shame, and sadness, the more they expected alcohol consumption to enhance their sex-related opportunities and behaviors, and the less external control they felt they had over situations and possible consequences, the more they drank. The lack of perceived negative emotional consequences which may result from excessive drinking seemed to be the largest predictor of drinking for subjects in this study, followed by the perceived enhancement of sex-related behaviors, perceived lack of external control (consequences), and perceived enhancement of fun.

Implications

Theoretical

Based on the current findings, it seems plausible to assert that Adlerian theory has much to offer in understanding alcohol abuse and in planning alcohol abuse prevention programs. Early recollections did contribute to the understanding of expectations of the effects of alcohol consumption within specific groups on campus. Combined with these
expectations of the effects of alcohol consumption, early recollections contributed to the explained variance in alcohol consumption patterns.

Further research combining alcohol expectations, early recollections, and social interest may contribute even more to the understanding of abusive tendencies. While all behaviors are useful from the individual’s point of view, socially useful behaviors have been defined as those that move individuals toward others while socially useless, or self-defeating, behaviors move them against or away from others (Adler in Ansbacher & Ansbacher, 1956). As expectations do seem to indicate the goal one is attempting to achieve through alcohol consumption and as early recollections do seem to indicate the areas where subjects felt “less than,” for which they were attempting to compensate, the addition of some measure of social interest to the model could possibly indicate the direction in which the subject was striving, whether socially useful or socially useless.

**Prevention Activities**

Results from the current study suggest that differences exist among and between problem and non-problem drinkers within different groups on the college campus. These differences involve personality factors, group affiliation factors, and expectation factors which contribute to personal decisions regarding alcohol use. Therefore, prevention practices should take all of these into account in order to maximize effectiveness.

Results from the current study reinforce the need for a comprehensive prevention approach that addresses both individualized environments and shared environments (Klitzner, 1998). Individualized strategies seek to prepare and assist individual persons in
coping with a world that presents a variety of temptations and potential threats to their personal health and well-being (Klitzner, 1998). Prevention strategies directed at individuals are based on the assumption that substance abuse arises because of problems or deficiencies within persons (Fisher, 1998). Prevention aimed at the shared environment is based on the premise that individuals do not become involved with substances solely on the basis of personal characteristics but are influenced by a complex set of factors in the environment (Fisher, 1998). These environmental factors include norms, availability, and regulations (Klitzner, 1998). Therefore, it is recommended that prevention efforts should be targeted toward specific groups within the campus community and designed specifically for a particular group. Failure to provide this type of comprehensive approach, while providing campus-wide prevention programming has proven to have had little effect on college student binge drinking (Wechsler, et al., 1998).

Individualized prevention activities designed for student-athletes should include information and facts about the alcoholic family and what happens to children who are raised in this environment, as this information pertains to a majority of individuals included in this group (Kritsberg, 1985). As many of these individuals are adult children of alcoholics, it is important that they understand how being raised in an alcoholic family has influenced their behavior and feelings as adults (Kritsberg, 1985). Student-athletes should also receive training in coping and stress management strategies so that they may manage the demands and pressures involved in being a college student-athlete. Non-athletes may participate in sports as a mechanism to reduce tension whereas this is a primary cause of tension for many student-athletes. Time management skills would also be a necessary
component addressing the tension reduction motivation of alcohol consumption.

Training for these individuals should also address intimacy and relationship issues along with sexual responsibility. Because the alcohol beverage industry utilizes sport participation in many of their advertising campaigns it is recommended that media literacy be a component of any intervention with this population. This component should address the athletics, alcohol, and sex connection mentioned previously in this study.

Results from the current study also suggest that student-athletes need help developing social skills which will allow them to feel more comfortable in social settings, thus eliminating that motivation for drinking. Student-athletes need to develop skills which will allow them to feel more accepted within the campus community and more connected to it. The social skills component should address interpersonal skills, media/presentation skills, conflict management skills, and decision making skills. It seems the latter could help decrease the incidence of driving-related at-risk behaviors exhibited within this group.

Environmental strategies which minimize the opportunity for student-athletes to be segregated from the campus community, such as the decentralization of student-athlete housing, can be especially effective at helping student-athletes feel more integrated into the broader spectrum of campus life. Establishing departmental or team policies regarding alcohol use, such as preventing student-athletes from taking new recruits out drinking during recruiting visits to campus, help to establish behavioral norms. Additionally, providing alcohol and prevention education to athletic department staff members would help increase awareness and knowledge related to substance abuse issues thus making
them more equipped to effectively set purposeful behavioral standards.

Prevention activities aimed at individual fraternity members should implement training strategies related to the handling of peer influence. As avoiding the negative emotional consequences related to over-indulgence seemed to be a limiting factor in drinking behaviors, the utilization of peer influence through peer education would seem to be an effective strategy for this group. Also, as group participation is such a motivating factor for individuals in this group, the handling of negative peer influences on behavior seems to be a real need. Training emphasizing refusal skills as well as communication and decision-making skills supplemented with community activities have been shown to be extremely effective (Tobler, 1986) and would address issues specific to the needs of this population as determined by the current study. Prevention education which includes components on binge drinking and alcohol poisoning is also recommended.

As mentioned previously, avoiding negative consequences seemed to be a primary motivation to limit excessive drinking for members of the fraternity group, therefore, the implementation and enforcement of policies aimed at controlling underage and binge drinking are recommended environmental approaches which should be considered by school and local officials. In addition to their national fraternity policies, these students must be informed about university alcohol policies and the consequences of violating those policies (Enos & Pittayathikhun, 1996). These policies must also then be enforced. According to Wechsler, Kuh, and Davenport, (1996), "there is little evidence that campus officials hold fraternity members accountable for their irresponsible, and often illegal, behavior," (p. 274). The fact that college officials have not held fraternity members
accountable is one plausible explanation as to why there has been little change in the binge drinking rate on campus over the past three years (Wechsler, et al., 1998). It seems that until fraternities are held accountable for their actions the perceived benefits of excessive alcohol consumption will be difficult, if not impossible, to counter.

Fraternity advisors play a critical role in preventing alcohol abuse among the students with whom they work. Advisors to social fraternities need to collaborate with college officials to develop and implement a comprehensive plan which addresses each aspect of the problem, including the institutional drinking environment and norms about drinking (Enos & Pittayathikhun, 1996). Resources and training should be made available to fraternity advisors so that they may be more aware and informed of the issues and of the role they play in establishing norms, policies, and enforcement standards.

As fraternities serve as the central social setting on many campuses, policies regarding party management need to be implemented and enforced, as well. Education needs to be provided to each fraternity’s social chair and risk management officer concerning responsible hospitality issues and liability issues. Policy suggestions regarding party management include the registration of parties, ID checking, and limiting the number of guest admitted and the quantity of alcohol served (Enos & Pittayathikhun, 1996). And, as set forth in a position statement from the Fraternity Executives Association, Inc. (1995), no chapter member should permit, tolerate, encourage, or participate in ‘drinking games.’

Induction activities related to fraternity membership should also be examined. In its statement of position on alcohol, the Fraternity Executives Association, Inc. (1995)
reiterated its belief that excessive and/or illegal use of alcohol to attract young men to fraternity membership is counterproductive to introducing and developing the true character qualities valued by the fraternal organization. It has also been previously recommended by Wechsler, Kuh, and Davenport (1996) that "to modify the drinking behavior of fraternity members, rush should be deferred until at least the final month of the first year of college, with any novitiate member activity (pledgeship) delayed until the second year," (p. 275). This recommendation is supported by the finding of the current study.

Individualized prevention strategies targeting college men who are neither members of intercollegiate athletic teams nor social fraternities should include some form of social or interpersonal skills training that will enable them to connect socially thus enhancing their abilities to cope with their feelings of isolation and alienation. It also seems plausible to recommend that at-risk members of this group undergo some form of family systems counseling to understand and deal with family of origin dynamics which influence current behaviors. As this audience is not 'captured' easily, the need for a referral system when policy is violated seems to be an appropriate recommendation. This policy violation referral system should have the capabilities to screen for problem drinking behaviors and underlying issues which may contribute to abusive or problem drinking behaviors. It seems members of this group would be most at-risk for slipping through the support system web undetected.

Environmental prevention activities targeting men who are neither members of intercollegiate athletic teams nor social fraternities are much more difficult to design, as
the motivations to drink excessively are more varied and complex. It is also difficult to ‘capture’ this audience. Emphasizing the negative emotional consequences related to excessive drinking would not seem to limit this group’s drinking behaviors. Providing alternative means of having fun would seem to be an effective strategy for members of this group, as would providing mechanisms for them to interact socially. However, providing mechanisms for them to interact is only half of the equation, as many of them do not seem to have the confidence in their social skills to interact without the use of alcohol. Helping these men find support systems which counter their feelings of alienation from their families would seem to be an effective strategy to reduce problem drinking within this group.

The most effective recommendation, it seems, is that prevention efforts focus on the underlying issues and factors which contribute to excessive alcohol consumption of specific groups. Education about the harmful consequences of binge drinking seems to have had little effect on this behavior. Further investigation of the effectiveness of prevention activities aimed at specific target groups and focused on underlying issues seems warranted.
APPENDIX A

INFORMED CONSENT FORM
INFORMED CONSENT: FORM 1

You have been asked to take part in a study investigating relationships between early childhood memories and your current views on alcohol consumption. The purpose of this investigation is to learn more about the contributing factors influencing alcohol consumption by students on the university campus. This information is valuable both for planning prevention/intervention programs and for scientific research.

You will be asked to write down two memories from your early childhood. You will also be asked about your interpretations of how alcohol effects you personally. Along with this information, you will be asked to recount your consumption of alcohol over the previous week. Additionally, you will be asked to relate descriptive information about yourself, such as age, ethnicity, religious affiliation, etc. The entire process will entail approximately one hour of your time.

There will be no harmful effects emotionally, psychologically, or physically through your participation in this investigation. You will not be required to record your name on any of the documents in order to better insure confidentiality.

Results from this investigation will be reported as group data; therefore, individual scores will remain confidential. At the conclusion of the investigation you will have the opportunity to receive feedback concerning personal alcohol consumption, personal beliefs about alcohol, personal potential risk factors, and general study results. This study is investigative in nature and you may withdraw at any time with no penalty or prejudice. I will be happy to answer any questions you may have concerning any aspect of this study.

If you have any further questions or comments concerning this survey please contact Angie Taylor, Director, Alcohol & Drug Education Center at 921-7100, or Ms. Jan Fox, Coordinator, Research and Sponsored Projects at 921-7516 or Dr. Nancy Meadows, Chair, University Committee on Safeguards in Human Research at 921-7690.
INFORMED CONSENT: FORM 2

NAME OF SUBJECT: __________________________________________

1. I hereby give consent to ____________________________________________
to perform or supervise the following investigative procedure or treatment:

   Completion of the retrospective diary (a review of the past week's alcohol
   consumption), the writing of two (2) early childhood recollections, completion of
   the Effects of Drinking Alcohol Questionnaire, and a demographic information
   sheet.

2. I have read and heard a clear explanation and understand the nature and purpose of
   the procedure or treatment; possible appropriate alternative procedures that would
   be advantageous to me; and the attendant discomforts or risks involved and the
   possibility of complications which might arise. I have read and heard a clear
   explanation and understand the benefits to be expected. I understand that the
   procedure or treatment to be performed is investigational and that I may withdraw
   my consent for my status. With my understanding of this, having received this
   information and satisfactory answers to the questions I have asked, I voluntarily
   consent to the procedure or treatment designated in Paragraph 1 above.

__________________________________________  __________________________________________
NAME                                                   DATE

__________________________________________  __________________________________________
WITNESS/SUPERVISOR                                  DATE
APPENDIX B

RETROSPECTIVE DIARY
DRINKING RECORD - RETRO DIARY

Have you had at least one drink of alcohol in the past year?

Yes _______  No _______

Instructions: Please record the number of drinks consumed on each day of the previous week, starting with yesterday and working backward through the week. One drink equals 12 oz beer, 5 oz glass of wine, or one "shot"/mixed drink.

The information you provide in this record will be kept strictly confidential and used for research purposes only. At the completion of this study, feedback concerning your personal drinking habits will be provided if you so request. If you would like this feedback, please circle "yes" below.

Yes, I would like feedback concerning my drinking habits  No, I would not like feedback concerning my drinking habits
APPENDIX C

EFFECTS OF DRINKING ALCOHOL SCALE
EFFECTS OF DRINKING ALCOHOL

Here is a list of some effects or consequences that some people experience after drinking alcohol. How likely is it that these things happen to you when you drink alcohol? Please circle the number that best describes how drinking alcohol would affect you.

(If you do not drink at all, you can still fill this out: just answer it according to what you think would happen if you did drink.)

<table>
<thead>
<tr>
<th>WHEN I DRINK ALCOHOL:</th>
<th>No Chance</th>
<th>Very Unlikely</th>
<th>Unlikely</th>
<th>Likely</th>
<th>Very Likely</th>
<th>Certain to Happen</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am more accepted socially</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2. I become aggressive</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. I am less alert</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4. I feel ashamed of myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. I enjoy the buzz</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. I become clumsy or uncoordinated</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7. I feel good</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8. I get into fights</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>9. I can't concentrate</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>10. I have a good time</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>11. I have problems driving</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>12. I feel guilty</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>13. I get a hangover</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>14. I feel happy</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>15. I get a headache</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>16. I am more sexually assertive</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
**HOW LIKELY IS IT THAT THIS WOULD HAPPEN?**

<table>
<thead>
<tr>
<th>WHEN I DRINK ALCOHOL:</th>
<th>No Chance</th>
<th>Very Unlikely</th>
<th>Unlikely</th>
<th>Likely</th>
<th>Very Likely</th>
<th>Certain to Happen</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. It is fun</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>18. I get mean</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>19. I have problems with memory and concentration</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>20. I am more outgoing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>21. It takes away my negative moods and feelings</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>22. I have more desire for sex</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>23. It is easier for me to socialize</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>24. I feel pleasant physical effects</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>25. I am more sexually responsive</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>26. I feel more sociable</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>27. I feel sad or depressed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>28. I am able to talk more freely</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>29. I become more sexually active</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>30. I feel sick</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>31. I feel less stressed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>32. I am friendlier</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>33. I experience unpleasant physical effects</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>34. I am able to take my mind off my problems</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
APPENDIX D

MANASTER-PERRYMAN MANIFEST CONTENT
EARLY RECOLLECTION SCORING PROTOCOL
EARLY MEMORIES -- INSTRUCTIONS

On the following pages describe in detail two early memories. Try to think back to the earliest event or scene that you can remember. Do not describe an event that someone told you about ("My mother said when I was four I ...") or a recurring event - something that happened again and again ("We always used to ...").

Describe a scene that happened once, say, when you were four (4), five (5), or six (6) years old, and that you can clearly remember. Try to remember something that occurred before the age of eight (8). Tell what happened, who did what, how it came out, and how you felt about what happened.

Please be as detailed and descriptive as you can, but only write down what you actually remember, what you can see in your "mind's eye."

Close your eyes and visualize the earliest incident you can recall from your childhood. Write the incident as you visualize it with all the details.

If you have any questions or are unclear as to what is being asked, please raise your hand and I will come to you.

If you have no questions, please turn the page and proceed.
Describe a scene that happened once, say, when you were four (4), five (5), or six (6) years old, and that you can clearly remember. Try to remember something that occurred before the age of eight (8). Tell what happened, who did what, how it came out, and how you felt about what happened.

Please be as detailed and descriptive as you can, but only write down what you actually remember, what you can see in your "mind's eye."

Close your eyes and visualize the earliest incident you can recall from your childhood. Write the incident as you visualize it with all the details.

How old were you when this particular early memory occurred? _________
Describe a scene that happened once, say, when you were four (4), five (5), or six (6) years old, and that you can clearly remember. Try to remember something that occurred before the age of eight (8). Tell what happened, who did what, how it came out, and how you felt about what happened.

Please be as detailed and descriptive as you can, but only write down what you actually remember, what you can see in your "mind's eye."

Close your eyes and visualize the earliest incident you can recall from your childhood. Write the incident as you visualize it with all the details.

How old were you when this particular early memory occurred? ________
EARLY RECOLLECTION -- SCORING SHEET

A. CHARACTERS (Persons mentioned in the ER)
   1. Mother
   2. Father
   3. Siblings
   4. Other Family Members (uncles, aunts, grandparents, etc.)
   5. Non-Family Members (friends, friends of parents, etc.)
   6. Group (class, gang, team, etc.)
   7. Animal
   8. Number of Characters

B. THEMES (What the memory is about)
   9. Birth of a Sibling
   10. Death (of a person or animal)
   11. Illness/Injury (self, other, animal)
   12. Punishment (self, other, animal)
   13. Misdeeds (committed by subject which knew were wrong)
   14. Givingness (generosity/kindness)
   15. Mastery (attempts/accomplishments)
   16. Mutuality (cooperative experience with others)
   17. Attention-Getting
   18. New or Unfamiliar Situation Causing Excitement
   19. Fear/Anxiety Provoking or Threatening Situation
   20. Open Hostility (involving self or others)
   21. Other
   22. Number of Themes

C. CONCERN WITH DETAIL
   23. Visual (color, size, shape)
   24. Auditory (volume, quality of sound, or something heard)
   25. Motor (physical movement)

D. SETTING (Where situation remembered took place)
   26. School (inside or out)
   27. Hospital/Dr.'s Office
   28. Inside The Home (family or relative)
   29. Outside in Subject's Neighborhood
   30. Traveling (in car, airplane, boat, etc.)
   31. Inside Home of Non-Family Member
   32. Outside, Away from Family Home or Neighborhood
33. Unclear (no clear indication of locale) 
34. Others (list separately) 
35. Number of Settings 

E. ACTIVE-PASSIVE 
36. Active (subject initiates action) 
37. Passive (subject is acted upon) 

F. CONTROL 
38. Internal (subject accepts responsibility) 
39. External (subject avoids responsibility) 

G. AFFECT 
40. Positive (overall feeling tone pleasant) 
41. Negative (overall feeling tone unpleasant) 
42. Neutral (no indication of affect) 

Rater
APPENDIX E

DEMOGRAPHIC QUESTIONNAIRE
INFORMATION SHEET

Last Four Digits of SSN: ____________________________

Age at Last Birthday: ____________________________

College Major: ____________________________

College Classification:
Freshman  Sophomore  Junior  Senior  Graduate

Marital Status:
Single  Married  Separated  Divorced  Cohabitating

Ethnicity:
_____ African-American
_____ American Indian/Alaskan Native
_____ Anglo-American
_____ Asian-American
_____ Hispanic-American
_____ Other: ____________________________

Religious Affiliation:
_____ Assembly of God
_____ Catholic
_____ Jewish
_____ Methodist
_____ Non-Denominational/Bible Church
_____ Pentecostal
_____ Other: ____________________________

_____ Baptist
_____ Episcopal
_____ Lutheran
_____ Mormon
_____ Disciple of Christ
_____ Presbyterian

At what age did you first drink alcoholic beverages, other than just a few sips from someone else's drink? ________

To your knowledge, has anyone in your family (blood relative) ever had a problem with alcohol? Yes  No
During the last 12 months, have you participated in any of the following activities:

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Organizations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Government</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercollegiate Athletics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fraternity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Activity Under the Influence of Alcohol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Driven an Automobile While Under the Influence of Alcohol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Been a Passenger While Someone Else Drove an Automobile While Under the Influence of Alcohol</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
REFERENCES


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