ALCOHOL EXPECTANCIES AND SUBSTANCE ABUSE IN SOCIOECONOMICALLY DISADVANTAGED ADOLESCENTS AND YOUNG ADULTS

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ABSTRACT

Relationships between alcohol expectancies and psychoactive substance abuse were investigated in a low socioeconomic status population of adolescents and young adults. Subjects were 60 new enrollees in a residential educational-vocational training center, the majority of whom were of minority ethnic status and had less than a 12th grade education. Subjects were selected to form gender-balanced substance abusing, minimal substance using, and abstaining groups. Differences among these three groups in expectations of positive effects from alcohol use were assessed. Results indicated that substance abusers held higher positive expectations than did abstainers on five of the six expectancy scales; Global Positive Changes, Sexual Enhancement, Physical and Social Pleasure, Social Assertion, and Tension Reduction. Substance abusers also held greater cognitive expectations than did minimal substance users with respect to sexual arousal and tension reduction. Greater expectations for physical and social pleasure were found among minimal users as compared to abstainers.

CHAPTER I

INTRODUCTION

Contemporary research has clearly demonstrated that drinking problems are extremely complex and are influenced by a variety of biological, psychological, and environmental variables (Critchlow, 1986). The traditional belief that problem drinking is caused primarily by the pharmacological effects of alcohol was once extremely popular (Hull & Bond, 1986). Accordingly, the popular explanation of alcohol's effect on behavior (disinhibition hypothesis) posits that certain behaviors, which are normally held under inhibitory control through anxiety and fear, are released from this control by alcohol's depressant effect on the cortex. According to the disinhibition hypothesis, consumption of alcohol would be expected to result in a pharmacologically-mediated release of such behaviors as control over drinking, sexual behavior, and aggression (Adesso, 1985). Much of the research aimed at investigating this hypothesis has focused on the belief that alcohol reduces tension. Reviews of the tension reduction literature (e.g., Adesso, 1980; Cappell, 1975; Cappell & Herman, 1972), however, indicated that the effects of alcohol on mood and

behavior are inconsistent and do not lend much support to such a direct disinhibiting function of alcohol. Further, MacAndrew and Edgerton's (1969) review of the cross-cultural evidence on "drunken comportment" concludes that the presence of alcohol in the body does not inevitably lead to, nor produce, disinhibition. These authors document five societies (the Camba, Aritama, Ifaluk, Takashima, and a Mextec Indian "barrio") in which the "disinhibiting" effects of alcohol are not evident, even during periods of extreme intoxication. Further, these authors discuss societies in which behavior exhibited during intoxicated states has undergone marked changes over time. They also identify societies whose members' intoxicated behavior is radically different from one set of socially-ordered situations or circumstances to another. MacAndrew and Edgerton conclude that one's "drunken comportment" is a function of what behavioral effects of alcohol one learns to expect as a member of a given society. Therefore, behavior of intoxicated persons will give the impression of disinhibition in societies that view drunkenness as a time-out from the usual social sanctions.

More recently, alcohol has been thought to have specific pharmacological and nonspecific psychological effects (Shapiro & Morris, 1978). Unfortunately, the failure of researchers to use adequate placebo controls to separate the pharmacological and psychological effects of

alcohol tended to obscure the magnitude of the psychological effects. This drawback, in turn, contributed to the acceptance of theories of alcohol use that do not include cognitive mediating mechanisms. The popular use of either a double-blind procedure to assess alcohol effects between subjects, or a crossover Latin square design for studying these effects within subjects, has been problematic in that neither of these methods allow an adequate separation of pharmacological from expectancy effects of alcohol. Furthermore, because of informed consent considerations, subjects are told that they may receive a drug or a placebo, leaving them to guess which they have received. This approach has undoubtedly led to variation in the expectancies that are generated in subjects as well as confusion in the obtained results.

Carpenter (1968) suggested the use of the "antiplacebo" design as a control for the standard placebo design. In the antiplacebo design, subjects are led to believe that they are receiving the placebo regardless of whether they receive the drug or the placebo. The combination of the standard placebo design and the antiplacebo methodologies led to the development of the balanced-placebo design. This four group design completely crosses the drug that subjects <u>expect</u> to receive with the drug that they <u>actually</u> receive (expect drug/receive drug, expect drug/receive placebo, expect

placebo/receive placebo, expect placebo/receive drug). Thus, by providing controls for both drug and placebo conditions within a 2 X 2 factorial design, the cognitive or expectancy effects of a drug may be separated from its pharmacological effects.

The earliest researchers to employ the balanced placebo design were Ross and his colleagues (Lyerly, Ross, Krugman, & Clyde, 1964; Ross, Krugman, Lyerly, & Clyde, 1962). These researchers employed the balanced placebo design in investigating placebo effects of stimulants and tranquilizers. Although they found that expectancy was a primary determinant of the effects of these drugs, the balanced placebo design was not employed again until the early 1970's.

Marlatt, Demming, and Reid (1973) were among the first researchers to report the use of the balanced placebo design in the study of the effects of alcohol. These researchers studied both nonabstinent alcoholics and social drinkers, within a balanced placebo design, in order to separate cognitive and pharmacological components of craving and loss of control phenomena. After receiving a priming dose of alcohol or placebo, subjects participated in a taste-rating task. The results indicated that only subjects' expectancies directly affected their drinking. Those subjects who believed they were consuming alcohol drank more than those who believed they were consuming a nonalcoholic beverage, regardless of

the actual content of the drinks. This and other studies with similar results cast serious doubt on the biological conceptualization of the craving and loss of control constructs which have traditionally epitomized traditional views of problem drinking. More specifically, Asp (1977) reported that the expectation of receiving alcohol influenced the drinking behavior of "alcoholics" and social drinkers in a taste rating task. Expectations resulted in increases in the amount of placebo consumed and higher estimates of the percentage of alcohol in the placebo. Berg, Laberg, Skutle, and Ohman (1981) found that "alcoholic" behavior was mediated by instruction-induced expectancies rather than the actual beverage given. Finally, Engle and Williams (1972) concluded that "alcoholic" desire for alcohol after one drink is related to psychological rather than physiological factors.

This early work gave support to other researchers interested in examining the role of cognitive factors in alcohol use. Lang, Goeckner, Adesso, and Marlatt (1975) found that the belief that one has consumed alcohol, and not the alcohol itself, was the primary determinant of aggressive responding in heavy drinking males. Moreover, attempts to manipulate expectancies about the effects of alcohol on sexual arousal, using the balanced placebo design, have found significant expectancy effects, and concomitant physiological sexual arousal, with males (Abrams & Wilson, 1983; Briddell et al., 1978; Wilson &

Lawson, 1976), but not with females (Wilson & Lawson, 1978). It has been hypothesized that this failure to find an expectancy effect with females can be explained by the fact that men may have stronger expectancies or greater cognitive control over sexual arousal than women (Wilson & Lawson, 1978). Nevertheless, with continued research in this area, it has become increasingly evident that cognitive as well as pharmacological factors determine the behavioral effects of alcohol in humans. Accordingly, it is now well established (Marlatt & Rohsenow, 1980) that alcohol-related expectancies can influence the behavioral effects of alcohol .

> The mere belief that alcohol has been administered is sufficient to result in loss of control and craving in alcoholics and changes in social anxiety, aggression, and sexual arousal and mirth in social drinkers, independent of actual alcohol consumption. (Rohsenow, 1983, p. 752)

Although it has generally been accepted, in recent history, that expectancies of alcohol's effects on behavior are common within the American culture, researchers have only recently begun to investigate the specific type and range of these expectancies. Brown, Goldman, Inn, and Anderson (1980) conducted an exploratory study in order to determine the range of human expectations about the reinforcing effects of alcohol. These researchers used a factor analytic

technique to reduce a large array of expectancy statements to six principal factors: (a) Global Positive Changes, (b) Enhanced Sexual Performance, (c) Physical and Social Pleasure, (d) Increased Social Assertiveness, (e) Relaxation and Tension Reduction, and (f) Arousal and Power. Using the validated results of this study, Brown et al. (1980) developed the Alcohol Expectancy Questionnaire (AEQ) to measure the degree to which an individual holds any of these six principal alcohol-related expectations (Brown, Christiansen, & Goldman, 1987).

Higher alcohol expectancies have been linked to habitual drinking patterns in the general adolescent population (Christiansen, Goldman, & Inn, 1982) and in a variety of adult populations (Brown, Goldman, & Christiansen, 1985; Southwick, Steele, Marlatt, & Lindell, 1981). Evidence is also accumulating that alcohol expectancies may mediate levels and patterns of alcohol consumption in both adolescents and adults (Brown et al., 1985). More specifically, Christiansen and Goldman (1983) reported that problem drinkers in the general adolescent population expected higher levels of specific positive alcohol effects. These authors found that more global positive effects, social changes, and enhancement of cognitive and motor performance were expected by adolescent problem drinkers. Similarly, Brown (1985a) reported that

problem drinking among college students could be predicted based on higher Tension Reduction and Physical and Social Pleasure AEQ scale scores. It has also been demonstrated that AEQ scores were significantly higher in adult alcoholic populations as compared to heavy drinking college students and medical patients (Brown et al., 1985). This same study also demonstrated that a pattern of elevated expectation of positive alcohol effects was associated with heavier drinking patterns among both college students and hospitalized medical patients.

More recently, Mann, Chassin, and Sher (1987) found that expectations of enhanced cognitive and motor abilities and enhanced tension reduction benefits were particularly associated with "high risk" drinking in a sample of high school students. Similarly, Brown, Creamer, and Stetson (1987) found that adolescent alcohol abusers in treatment obtained significantly higher expectancy scores for global positive change, facilitation of social behavior, cognitive and motor improvement, alcohol-produced arousal, relaxation, and sexual enhancement as compared to nonabusing peers.

Alcohol expectancies have also been shown to be predictive of treatment outcome and usual context of drinking. Brown (1985b) reported that alcohol expectancy scores were significantly negatively correlated with treatment outcome in a one year follow-

up of alcoholics completing an inpatient alcoholism treatment program. Alcohol reinforcement has also been shown to vary with the usual social context of drinking. Brown (1985c) found that "alcoholics" with a usually impersonal context of drinking tended to attribute strong reinforcement characteristics to alcohol itself, whereas "alcoholics" who typically drink in a family context view the alcohol in less positive terms.

The research to date would also seem to indicate that gender differences exist with respect to expectations for the reinforcing effects of alcohol. Brown et al. (1980) found that their female subjects expected generally positive social experiences when drinking, while males expected arousal and aggressive behavior. They reported that these differences may have been related to the tendency for males to consume greater amounts of alcohol than females. Rohsenow (1983) statistically controlled for the effects of drinking habits and found that, after a few drinks, women expected less global positive effects, social and physical pleasure and relaxation, and more cognitive/motor impairment than men. She also noted, however, that men and women did not differ in expectations of sexual enhancement, aggression, expressiveness, or irresponsibility. Brown (1985c) found gender differences in expectancy patterns among

"alcoholics" according to both usual social and usual physical contexts of drinking. On the other hand, Southwick et al. (1981) found no gender differences in alcohol-related expectations. It should be noted, however, that Southwick et al. derived their own expectancy measure, and asked subjects to rate expectations for themselves and for others. This self versus other dimension may have provided a confound for Southwick's study. Thus, it seems probable that sex differences do exist in reference to drinking expectancies, even though it is not yet clear precisely what these differences might be.

The hypothesis that alcohol expectancies may mediate the development of drinking patterns in both adolescents and adults is based partly on repeated findings which indicate that expectancies of positive alcohol effects are consistently correlated with drinking patterns across a variety of populations. As noted in a recent review of this literature (Leigh, 1989), however, it is impossible to tell whether cognitive expectancies influence drinking, as many researchers propose, or whether drinking influences expectancies. Longitudinal studies offer some insight into the direction of causality between cognitive expectancies and drinking behavior (Leigh, 1989). Further, it has become clear that alcohol expectancies are present even prior to personal drinking experience

(Brown, Creamer, & Stetson, 1987; Christiansen & Goldman, 1983; Christiansen et al., 1982). If expectancies do play a crucial role in the etiology of problem drinking, then differences in expectancy patterns presumably should exist between problem and nonproblem drinkers regardless of the subject population. However, all the studies regarding expectations of alcohol reinforcement conducted to date have virtually ignored lower socioeconomic status (SES) persons, a population which includes significant numbers of problem substance users.

Problems in subject access and in motivating subject participation in data collection have made studies of socioeconomically disadvantaged persons extremely difficult. A major part of this problem is due to the fact that the poor (many of whom are Black) show much less tendency to seek formal treatment for psychological problems (Neighbors & Jackson, 1984). It has also been reported that despite the large size of the Black population and the high rate of alcohol-related problems within this population, relatively little alcohol-related research has focused specifically on Blacks (Lex, 1985). Without access to subject populations in a structured environment, the time and financial commitment required for adequate data collection are quite prohibitive. Several explanations have been offered to account for the lack

of access to subjects of low socioeconomic status. Hollingshead and Redlich (1958) suggested that the low SES communities are more tolerant of deviant behavior without any awareness that the motivations behind the behavior are pathological. This in turn leads to less problem identification and eventual treatment provision within this group. On the other hand, Dohrenwend and Chin-Shong (1967) contend that definitions of deviant behavior in lower status groups are narrower and more restricted to aggressive and antisocial behavior. These authors suggest that this narrowed definition gives the appearance of greater tolerance of deviance as seen from the vantage point of higher status groups, including the mental health professions.

In contrast to these viewpoints, Berkanovic and Reeder (1974) suggest several alternative hypotheses to explain SES differences in health services utilization. Firstly, these authors suggest that there may be differences in the definition and the evaluation of symptoms as well as differing expectations with regard to what the health professional should do. This difference is obvious in such value-laden areas as sexual activity and drug use. Secondly, there may be differential ordering of problems and priorities with respect to values and allocation of resources such as time, energy, and especially money. Finally, these authors suggest differential vulnerabilities to "ego

assault" in the professional-client encounter often due to prejudices of health professionals. Strauss (1969) has documented the impact of such differences in treatment on the reactions of the poor to health facilities. According to Strauss, patients' real or imagined perceptions of class and race bias, their many hours of waiting, the seeming or actual impersonal routines of institutional care, feeling like "charity patients," long distance travel, and the accompanying travel fares, all further the possibility of infrequent visits or no visits at all. A review of the literature by Harper (1978) further documents the differential use of treatment by the poor in concluding that compared to Whites, Blacks have more limited access to treatment facilities.

The fact that low SES individuals are less likely to seek medical and psychological services has serious implications for the treatment of psychoactive substance abuse within this population. Previous studies have shown higher SES communities to have smaller normative ranges for alcohol use, to more clearly differentiate nonproblem from problem drinkers, and to have stronger evaluative responses than lower SES populations (McKirnan, 1978). More recently, McKirnan (1984) concluded that within a lower SES sample, problem identification required a shift from external to internal attributions. McKirnan suggests

that this may help account for lower SES populations' higher threshold for help-seeking, greater stigmatization of deviance, and poorer response to treatment.

Despite the fact that the poor tend to seek medical and psychological help less often, and consequently are less available for inclusion in research, a small number of studies have been conducted to assess the relationship between substance use and social status. However, results have been inconsistent and contradictory. A national survey of American drinking practices demonstrated that those people of low socioeconomic status who drink tend to be heavier drinkers than other persons (Cahalan, Cisin, & Crossley, 1969). Further, these authors note that the poor have a relatively higher ratio of consequences in relation to the heaviness of their drinking. In other words, more of the poor than of the well-to-do get into difficulty over their drinking whether or not they drink heavily (Cahalan & Cisin, 1977). The review by Harper (1978) reports that when compared to Whites, Blacks are more likely to be victims of their own heavy drinking in terms of physical illness, assaults, homicides, accidents, early mortality, and trouble with the law.

Other studies have further demonstrated a relationship between SES and heavy drinking. Parker

and Parker (1980), using a national probability sample of junior and senior high school students, found that children from families with low educational and occupational status are heavier drinkers than children from higher status families. Accordingly, a sample of 1,715 sixth and eighth grade students revealed that 78.6 percent of the lower income students were heavy drinkers as opposed to 21.4 percent of the upper income group (Forney et al., 1984). Bailey, Haberman, and Alksne (1965) found that among over 8,000 urban New York City residents, the rates for problem drinking were highest among low income Blacks. Finally, Wanburg and Horn (1973) report increased probability of excessive alcohol use among unemployed, poorly educated Blacks within a population of first time alcohol abusers in treatment.

As stated earlier, however, results of this type of study have been contradictory. Based on a large sample of sixth through twelfth grade students, Fors and Rojek (1983) found no differences in substance use among differing SES levels. However, these researchers did conclude that school grade point average was significantly negatively correlated with level of drug use or abuse. Similarly, King (1986) found that SES level was not a significant factor in relation to drinking level. However, King also found that the unemployed were over-represented in the "at risk" group

of 16 to 42 year old London health center patients. Differences in methodology for determining SES levels may account for the contradictory nature of the results of these studies. However, even in studies in which SES level was not a significant correlate, it has often been found that other factors frequently correlated with SES level (e.g., unemployment and low educational attainment) show a strong relationship to problem alcohol consumption patterns.

Statement of the Research Question

The research presented earlier provides strong evidence that lower SES persons tend to be heavier drinkers, tend to suffer more negative consequences due to drinking, demonstrate a decreased tendency to identify problem drinking behavior, seek professional help less often, and are less able to benefit from traditional treatment programs. These factors make it particularly important to determine significant factors which may mediate the development of alcohol-related problems in lower SES persons. The ability to outline mediating factors should increase the ability to design treatment and prevention programs specifically for this population. Prior research with middle and upper-class populations has demonstrated the importance of alcohol expectancies in mediating the behavioral effects of alcohol and a relationship between expectancies and drinking problems. However, it cannot be assumed that

the lower SES population (with demonstrated differences in drinking patterns, cultural values, definitions of deviance, and treatment responsiveness) operate under the same set of expectations regarding alcohol consumption as previously-investigated social groups. If erroneous expectations are to be modified in the treatment and prevention of substance abuse within this population, it will be necessary to determine the more precise nature of existing expectations and their relationship to substance use. This study is a partial replication and extension of a previous study conducted by Brown et al. (1985) and is designed to answer the following question: Does a relationship exist between alcohol expectancies and problem drinking in an unemployed, under-educated, socioeconomically disadvantaged population and, if so, what gender differences might exist within this population?

Studies to date have concentrated specifically on the extent of subjects' alcohol use and predicting alcohol-related problems. Previous research has demonstrated strong relationships between extent of alcohol use and the use of marijuana, amphetamines, barbiturates, lysergides, and other drugs (Battistich & Zucker, 1980; Wechsler, 1976). It is possible that increased expectation of positive effects from alcohol could be related to the problem use of other drugs, in place of, or in addition to, alcohol. Therefore, the

present study will also assess the relationship of alcohol expectancies to problem substance use in general.

Hypotheses

1. Based on previous research by Sandra Brown and her colleagues (e.g., Brown, 1985a, 1985b, 1985c; Brown, Christiansen, & Goldman, 1987; Brown et al., 1985; Brown et al., 1980; Christiansen, Goldman, & Brown, 1985), it is predicted that a substance abusing group will have higher overall expectancy profiles than either minimal substance users, or abstainers. It is predicted that the abstainers will have a lower overall pattern of expectancy scores as compared to minimal substance users and substance abusers.

2. With respect to individual expectancy scores, it is predicted, based on prior work (Brown et al., 1980; 1985), that substance abusers will have greater specific expectations for Global Positive Change, Social and Physical Pleasure, Social Assertion, and Tension Reduction than either minimal substance users or abstainers. It is predicted that an abstaining group will have lower expectancy scores on the dimensions of Social and Physical Pleasure, Social Assertion, and Tension Reduction than minimal substance users.

3. Based on previous research suggesting gender differences in alcohol expectancies (Brown, 1985c;

Brown et al., 1980; Rohsenow, 1983), it is predicted that there will be differences between male and female expectancy profiles within the abusers group, but not so among the minimal users or abstainers group. Specifically, it is predicted that male abusers will have greater expectations for social assertiveness, tension reduction, and arousal and power as compared to female abusers.

4. Based on the studies conducted by Wechsler (1976) and Battistich and Zucker (1980), it is expected that there will be a significant positive relationship between extent of alcohol use and use of marijuana and other drugs. It is also expected that expectations for alcohol reinforcement will show a significant positive relationship not only with alcohol consumption, but with use of other drugs as well.

5. The final hypothesis is based on a study of young adolescents conducted by Christiansen et al. (1982) which demonstrated a positive relationship between age and extent of alcohol consumption within their population. Therefore, it is predicted that an abstaining group will have a lower mean age than either minimal substance using or substance abusing groups. It is further predicted that an abusing group will have a higher mean age as compared to a minimal using group.

CHAPTER II

METHOD

Subjects

The subjects for this study were newly-enrolled students at a residential vocational-educational training center located in the southwestern United States. A sample group of 60 subjects (30 males and 30 females) was selected from among the total number of students (917) entering the facility during the one-year period from January, 1987 to December, 1987, during which data collection took place. The age range of students at this facility was from 16 to 24 years. The student population was approximately 70% Black and 25% White, with 5% being of other ethnic backgrounds. All students entering the facility were from low SES backgrounds and were no longer in school. Approximately 75 percent of these students had less than a 12th grade education. Further normative information regarding the population sampled is contained in Appendix A.

The subjects were selected based on information about present and past substance use obtained during a previously-existing entrance interview. Subjects were

classified along a continuum of substance using behavior. Subjects who could be classified as substance abusers, minimal substance users, or non-substance users, according to the criteria in Appendix B, were invited to participate in the study. New enrollees who did not meet the criteria for any of these three groups were excluded from the study. The demographic characteristics of the sample groups are displayed in Table 1.

For each classification group, only enough subjects were selected to fill each group. The abstainers were selected on the basis of having never had any direct experience with psychoactive substance use. Among the minimal users group, 35% of subjects reported no use of psychoactive substances during the past 30 days. The mean number of days of use during the previous 30 days was 1.2 (SD = 2.0) for alcohol and 0.3 (SD = 0.7) for marijuana. Among the abusers group, 11 subjects (55%) were classified due to drug abuse other than alcohol, 7 subjects (35%) were classified due to alcohol abuse, and 2 subjects (10%) were classified as abusers of both alcohol and other drugs. Although there was a preponderance of both alcohol and other psychoactive substance use (90% used both alcohol and marijuana during the past 30 days), subjects within the abusers group tended to use only one substance heavily. For this group, the mean number of times of

Table 1

Demographic Characteristics of Classification Groups

Characteristic	Non-Users	Minimal Users	Abusers
Number of Subjects			
Males	10	10	10
Females	10	10	10
Mean Age (yrs)	18.9	18.3	18.7
Range	16-24	16-22	16-23
SD	2.0	1.5	1.8
Mean Education (yrs)	10.8	10.1	9.8
Range	7-13	7-12	7-12
SD	1.5	1.4	1.6
Race (%)			
Black	75	55	40
White	20	45	55
Other	5	0	5
Marital Status (%)			
Single	90	90	95
Married	5	0	0
Living Together	0	10	0
Separated/Divorced	5	0	5

use during the previous 30 days was 6.5 (SD = 7.7) for alcohol and 13.1 (SD = 11.6) for marijuana.

The three experimental groups were balanced with respect to gender of subjects as well as the total number of subjects in each group. Thus, each classification group (substance abusers, minimal substance users, and non-substance users) contained an equal number of males and females. This design was adopted in order to reduce the chance of statistical bias in analyzing the data and is in line with recent recommendations for orthogonal analyses of variance (Milligan, Wong, & Thompson, 1987). Although it was obvious that some groups may be over-represented in this sample (e.g., substance abusing females), it was believed to be of greater importance to establish the nature of differences in alcohol expectancies between males and females, using a statistically unbiased analysis, rather than to determine the relative distribution of each gender within the classification groups.

The group criteria were defined so as to allow a comparison of alcohol expectancy patterns between heavy substance users and minimal substance users within this population. Additionally, previous research (Christiansen et al., 1982) indicates that expectations for the positively reinforcing effects of alcohol exist prior to personal experience with these effects. For

this reason, it was decided to include a group of non-substance users to provide a comparison of expectancy patterns between minimal substance users and abstainers. The inclusion of the non-user group was designed to provide information regarding differential expectations between persons who have some experience with substances use (e.g., 10 or more times in their lifetime) but are not currently using on a frequent basis, and those who have never engaged in substance use.

All participation in the study was voluntary and was carried out according to the ethical guidelines of Oklahoma State University and the vocational training facility. Because students who enter the training program are considered to be under the guardianship of the program (in loco parentis), consent for participation of those under 18 years of age was granted by the program administration as well as by each individual subject.

Materials

The assessment instruments used in this study were a Cursory Substance Use Questionnaire, the Alcohol Expectancy Questionnaire (AEQ), the Customary Drinking Record (CDR), and the Demographic Data Sheet (DDS) (Brown et al., 1980).

The Cursory Substance Use Questionnaire was a previously-existing part of the admission process in

the facility at which this research was conducted. It is a brief semi-structured interview which assesses the amount and frequency of current substance use, use during the past 12 months, and lifetime use. The interview includes questions about tobacco, alcohol, marijuana, opioids, sedative/hypnotics/tranquilizers/ barbiturates, cocaine, amphetamines, PCP, hallucinogens, inhalants, and "other" substances. The complete Cursory Substance Use Interview appears in Appendix C.

The AEQ is a structured 120-item questionnaire designed specifically to measure expectations of the positively reinforcing effects of moderate alcohol consumption in adults with diverse drinking habits (Brown et al., 1980). Items are structured in an agree-disagree format, with an agree response indicating the belief that a moderate amount of alcohol (a "few" or a "couple" of drinks) can produce a particular effect (e.g., "After a few drinks, I am usually in a better mood" or "Alcohol enables me to fall asleep more easily"). The standard form of the AEQ appears in Appendix D. It has been reported (Brown, 1985b) that the AEQ has demonstrated satisfactory test-retest reliability (mean $\underline{r}$ = .71) and internal consistency ($\underline{\alpha}$ = .78) for the AEQ. The low educational level of many of the subjects might have prohibited adequate understanding with the standard administration of the

AEQ (i.e., some words may not have been understood by some subjects). For this reason, an audiotape form of the AEQ was slightly altered. Following the presentation of each item containing a word or words not commonly understood (based on subjective clinical experience with this population), the item was presented in a reworded form using language which was simpler and more commonly understood. For example, the item "My feelings of isolation and alienation decrease when I drink," was followed by the statement, "That means, my feelings of isolation and aloneness decrease when I drink."

A complete list of the items altered on the audiotaped AEQ appears in Appendix E.

The CDR is a 32-item questionnaire which was administered in semistructured interview format (Brown et al., 1980). The CDR obtained, via self-report, the subject's usual drinking pattern, drinking context, preferences, history of consumption, physical distress related to drinking, and family history of alcohol related problems. The complete CDR appears in Appendix F.

The DDS is a 16-item questionnaire which was also administered in an interview format and obtained demographic information typically related to drinking patterns (Brown et al., 1980). Information such as gender, age, marital status, ethnic background,

education, occupation, socioeconomic status, and religious background and frequency of church attendance was elicited by the DDS. The DDS, like the CDR, was administered in interview format rather than by questionnaire due to the limited reading ability of the subject population. The complete DDS appears in Appendix G.

Procedure

A 15 minute semistructured interview was conducted with each new student entering the vocational training program as part of the standard admission process. Interviews were conducted within 36 hours following the students' arrival at the center. The first part of the interview assessed substance use by self-report of present use, use during the past 12 months, and lifetime use. If the individual was not found to meet the criteria for any of the three classification groups, no further information was obtained and they were excluded from the study. If the individual did meet the criteria for one of the three groups, the individual was fully informed as to the nature of the study and invited to participate. Subjects were informed that all information obtained for the study would be confidential and anonymity would be guaranteed. Subjects were also informed that it was the policy of the vocational training program that health services staff and counselors have access to the

part of the drug use information obtained as part of the program's standard entrance interview. The informed consent statement appears in Appendix H. Following the signing of the informed consent statement, the interview was continued for an additional 15 minutes, during which time the CDR was administered in interview form. Interviews were conducted by one licensed clinical psychologist or one of four psychology graduate students with at least masters level training in psychology.

The subjects then returned approximately one week later for an additional one hour session during which the AEQ was administered in both written and audiotape form, and the DDS was completed in interview form. The AEQ and DDS were administered by trained undergraduate research assistants.

An expectancy score was calculated for each subject on the six AEQ scales by adding together the number of items on each scale answered in the critical (always affirmative) direction. Because the AEQ scales contain varying numbers of items, the scale scores were transformed into standard scores (*Z* scores) in order to allow comparisons among scales. This procedure would also allow a comparison with past expectancy research which also utilized *Z* score transformations (Brown et al., 1985). Using data obtained during the semi-structured interview administration of the Cursory

Substance Use Questionnaire, a modified Quantity-Frequency Index (QFI) score for alcohol consumption (Cahalan et al., 1969) was also calculated for each subject. The QFI score was calculated to provide a means of validating subject selection criteria and to allow comparisons between the present sample and a normative sample drawn separately from the same population (see Appendix A for details).

CHAPTER III

RESULTS

Quantity-Frequency Index Comparisons

The sample selected for the present study and the normative sample drawn randomly did not differ with respect to mean QFI scores (see Appendix H). The results of a 3 X 2 ANOVA using QFI scores as the dependent variable indicated a main effect for substance use classification group, $F(5, 54) = 19.2$, $p < .0001$, but no main effect for Gender and no Group X Gender interaction effect. Follow-up Duncan's multiple range tests indicated there was a significant difference in QFI scores between the abusers and the minimal users and between the abusers and the abstainers, in the expected directions. The minimal users and the abstainers, however, did not differ in mean QFI scores.

Multivariate Analysis

The first step in the analysis was to determine if differences existed among the three classification groups with respect to alcohol expectancy profiles. Since it was expected that males and females would have differing expectancy profiles, this first step in the

analysis also involved exploring possible differences according to subject gender. In order to detect the existence of these predicted differences, a 3 X 2 multivariate analysis of variance (MANOVA) was conducted using the six AEQ scale scores as the dependent measures to determine the amount of variance in AEQ profiles which could be accounted for by group membership (abusers, minimal substance users, or abstainers) and/or subject gender. The results indicated a significant main effect for group. As predicted, significant differences in alcohol expectancy profiles were found among the three classification groups, Wilks' Lambda $F(12, 98) = 3.52$, $p < .001$. Contrary to predictions, however, there was no significant main effect for gender nor was there any significant Group X Gender interaction effect detected by the MANOVA. Thus, within the present sample, males and females did not differ in overall alcohol expectancy profiles.

Univariate Analyses

The second step in the analysis involved determining whether significant differences existed among groups on the six individual expectancy scales. Although males and females were not found to have different overall expectancy profiles, including subject gender as a variable in these analyses seemed useful for guiding future research. Thus, a 3 X 2

univariate analysis of variance (ANOVA) was conducted on each expectancy scale to determine whether a significant amount of variance in AEQ scale scores could be accounted for by group membership and/or subject gender. As illustrated in Table 2, the ANOVAs revealed significant differences among classification groups across all expectancy scales with the exception of the Arousal and Power scale (Scale VI). Respective Duncan's multiple range tests at the $p < .05$ probability level were conducted to determine the more precise meaning of differences between group means detected by the ANOVAs.

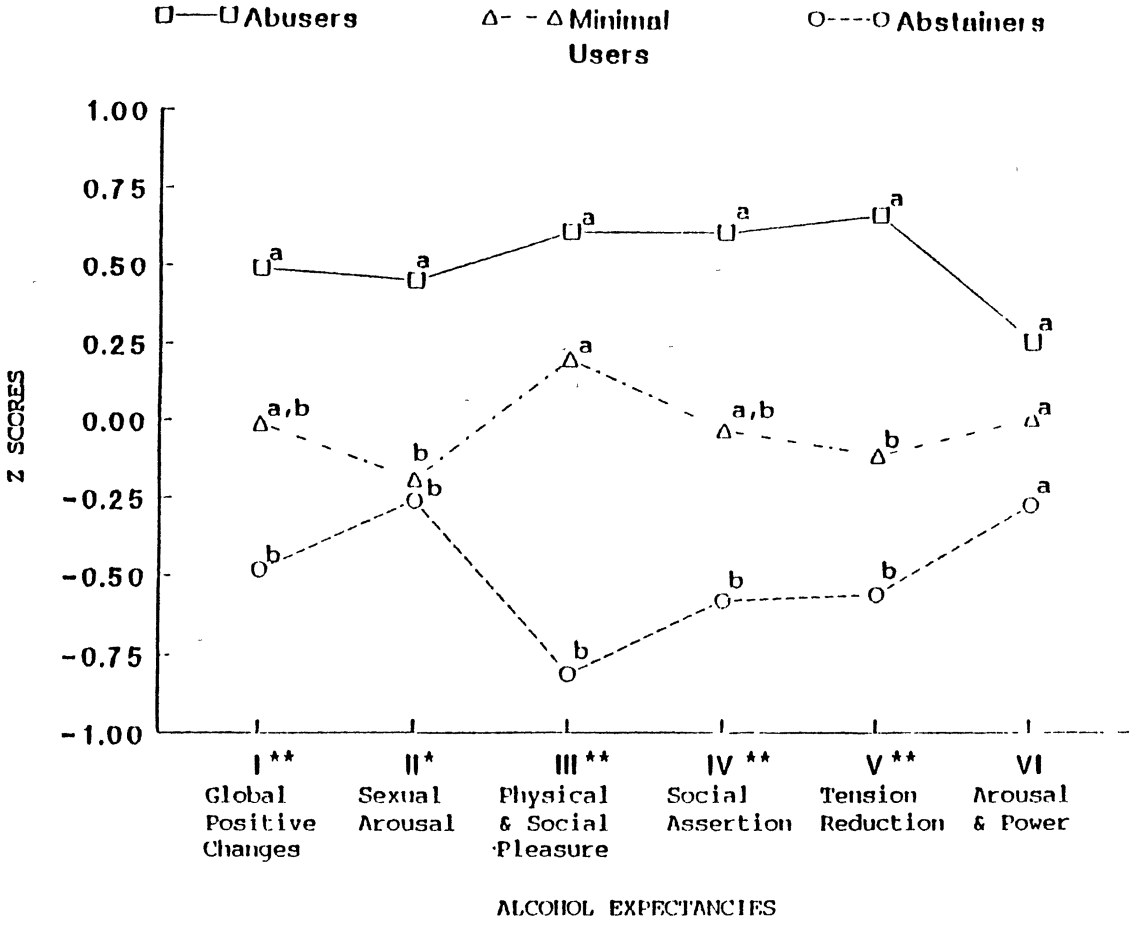
Abstainers versus Abusers. As illustrated in Figure 1, the mean alcohol expectancy score for substance abusers differed from that of abstainers on five of the six expectancy scales. As predicted, substance abusers expected significantly more Global Positive Changes, Social and Physical Pleasure, Social Assertion, and Tension Reduction than did those who abstain from substance use. Substance abusers were also found to expect more Sexual Enhancement from alcohol than did the abstainers. This latter finding, while not predicted, is consistent with the overall hypothesis. These data indicate that the AEQ expectancy scales were effective in discriminating between substance abusers and abstainers.

Table 2

ANOVAs for Group Main Effects

AEQ Scale	SS	$F(2, 57)$	p
I. Global Positive Change	9.35	5.72	0.01
II. Sexual Enhancement	6.07	3.71	0.05
III. Physical & Social Pleasure	21.28	16.20	0.0001
IV. Social Assertion	14.02	8.93	0.001
V. Tension Reduction	15.43	10.56	0.001
VI. Arousal and Power	2.80	1.44	ns

Figure 1. Mean Alcohol Expectancy Scores by Group



*p < .05 for ANOVAs **p < .01 for ANOVAs

Note. Means that do not share a common superscript differ significantly at p < .05.

Minimal Users versus Abusers. Contrary to expectations, there were relatively few differences between the minimal users group and the abusers group with respect to positive alcohol expectations. As compared to minimal substance users, substance abusers expected significantly more Tension Reduction, as was predicted. The two groups did not, however, differ as predicted with respect to expectations of Global Positive Changes, Social and Physical Pleasure, or Social Assertion. Substance abusers also held greater expectations for Sexual Enhancement than did the minimal users. Although again, not predicted, this latter finding is consistent with the overall hypothesis. Thus, within the present sample, greater expectations of Tension Reduction and Sexual Enhancement effectively discriminated between those who use drugs abusively and those who have had some initial experiences with psychoactive substance use (i.e., 10 or more times in their lifetime) but who are not regular users.

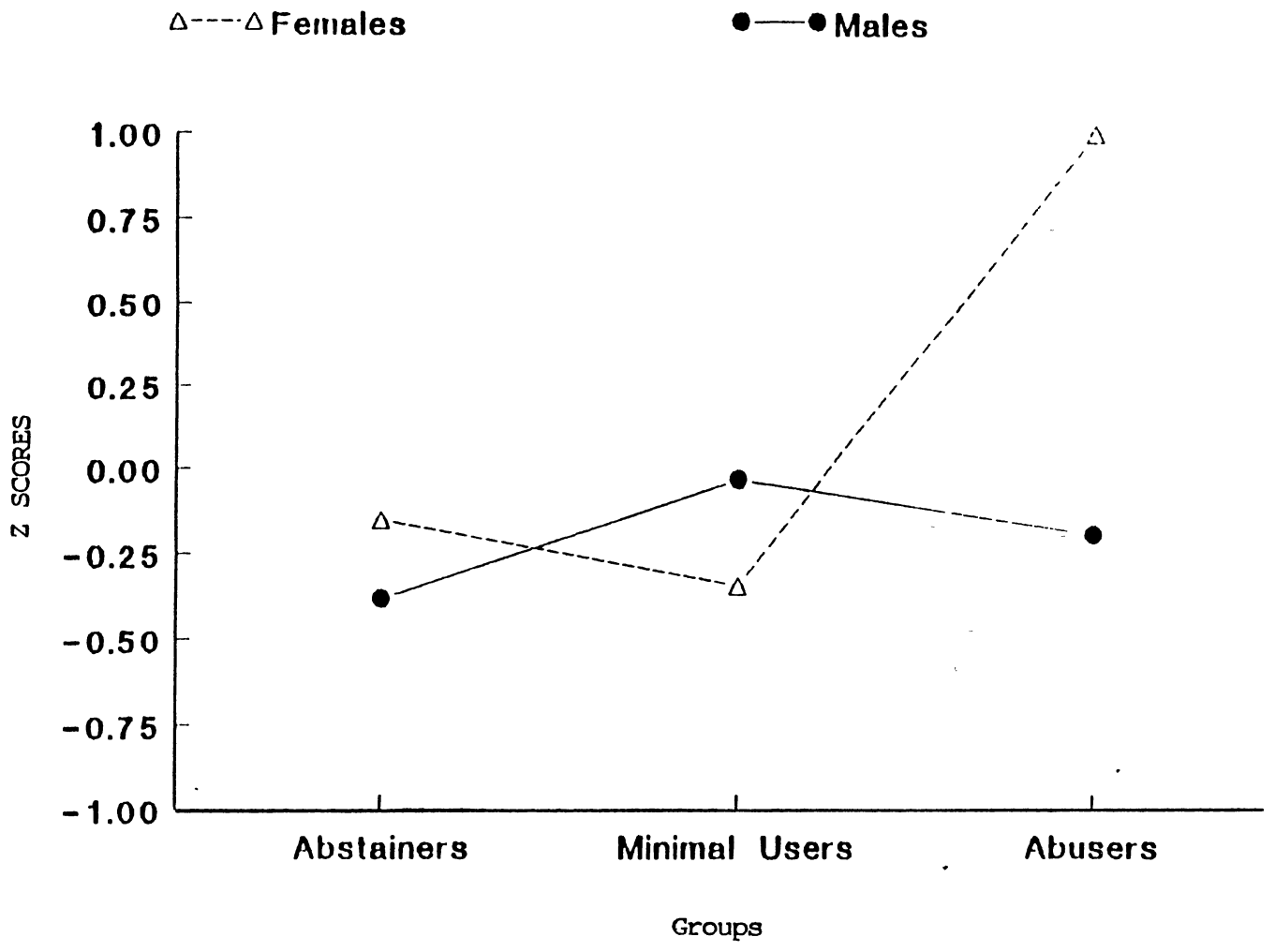
Abstainers versus Minimal Users. Comparisons between the abstaining and the minimal using group also revealed few differences in expectancy scores. Minimal substance users expected greater positive effects on the Physical and Social Pleasure dimension (Scale III) than did the abstainers, but did not differ significantly on any of the other expectancy factor

scales. Thus, predicted differences between abstainers and minimal substance users on the Social Assertion and Tension Reduction scales were not found within the present sample.

Gender Differences. The univariate ANOVAs yielded main effects for gender on Scale I (Global Positive Change) and Scale V (Tension Reduction), $F(1, 54) = 3.97$ and 4.64, respectively, $p < .05$. A Group X Gender interaction effect was also detected for Scale II (Sexual Enhancement), $F(2, 54) = 3.91$, $p < .05$. Examination of group means revealed that females expected significantly more Global Positive Changes ($M = 9.2$, $SD = 7.6$) and Tension Reduction ($M = 5.0$, $SD = 3.2$) than did males ($Ms = 6.0$, 3.6 and $SDs = 5.8$, 2.8, respectively), regardless of typical substance use pattern.

Simple effects tests were used to explore the interactive effects of subject gender and substance use with relation to expectations of Sexual Enhancement (Scale II). Females were found to have significantly higher expectations for sexual enhancement than males, but only among the substance abusers group, $F(1, 54) = 9.72$, $p < .01$. Men and women within the abstainers and minimal users group did not differ with respect to this scale, $Fs(1,54) = .32$ and .57 respectively. As Figure 2 illustrates, expectations for sexual enhancement were related to level of substance use among the females,

Figure 2. Group X Gender Effect for Sexual Enhancement Scale (Scale II)



$F(2, 54) = 14.39$, $p < .001$, but not among the males, $F(2, 54) = .36$, ns. Follow-up Duncan's multiple rangetests indicated that female abusers differed significantly ($p < .01$) from both the abstaining and minimal substance using females, who did not differ from each other. Together, these results would suggest that, within the present sample, expectations for sexual enhancement were related to level of substance use among the females only, and female substance abusers expected greater sexual enhancement from alcohol use than did any other subject group.

Relationship Between Alcohol Use and Other Drug Use

A correlational analysis was used to detect possible significant relationships among extent of alcohol use, use of marijuana and other drugs, and alcohol expectancies. Subjects' reported use of marijuana, cocaine, amphetamines, sedatives, opiates, PCP, hallucinogens, inhalants, and any other drugs used during the past 30 days (not including alcohol) were summed to form an overall substance use index which reflected the total number of times that psychoactive substances other than alcohol or cigarettes had been used during the previous 30 days. Pearson correlations indicated that, as predicted, there was a significant positive relationship between extent of alcohol use and extent of other psychoactive substance use,

$r(58) = .32$, $p < .05$. As expected, frequency of alcohol use was also positively correlated with alcohol expectancy scales. As presented in Table 3, subjects who reported frequent alcohol consumption tended to hold significantly higher expectancy scores across four of the six AEQ scales.

Relationship Between Other Drug Use and AEQ Scores

The anticipated relationship between psychoactive substance use other than alcohol and positive reinforcement expectancies for alcohol was also investigated using a correlational analysis. As can be seen in Table 3, extent of psychoactive substance use (not including alcohol) was positively correlated with all six expectancy factors of the AEQ at or beyond the $p < .05$ probability level. As predicted, individuals holding high expectations of positive reinforcement from alcohol also tended towards frequent psychoactive substance use, whereas subjects having relatively low alcohol expectancies tended toward infrequent use of psychoactive substances, even when alcohol is not considered.

Age Differences

The final part of the analysis was designed to test the hypothesis that there would be significant differences in age among the three substance use classification groups. A univariate ANOVA was

Table 3

Pearson Correlation Coefficients for AEQ Scales and Substance Use

AEQ Scale	Other Drug Use r	Alcohol Use r
I. Global Positive Change	.27*	.37**
II. Sexual Enhancement	.38**	.21
III. Physical & Social Pleasure	.35**	.44***
IV. Social Assertion	.32**	.45***
V. Tension Reduction	.45***	.37**
VI. Arousal & Power	.27*	.23

Note. (df = 58) for all correlations.

*$p < .05$. **$p < .01$. ***$p < .001$.

performed using age as the dependent variable (see Table 1 for means and standard deviations). The results indicated that, inconsistent with predictions, there were no differences in mean age among substance abusers, minimal substance users, or abstainers within the present sample, $F(2, 54) = .50$.

CHAPTER IV

DISCUSSION

The results of the present study demonstrate a relationship between expectations of reinforcing effects from alcohol use and level of psychoactive substance use in an under-educated, low SES population of adolescents and young adults. Comparisons between those who abstain from substance use and those who use substances either minimally or abusively yielded significant differences in the AEQ's alcohol expectancy profiles. Substance abusers consistently held higher expectations for reinforcing effects from alcohol than did minimal substance users who, in turn, expected more reinforcement than abstainers.

It should be noted that the present study provides evidence only that a positive relationship exists between alcohol expectancies and substance use and abuse. As with all correlational data, the present results cannot be interpreted with respect to causality. Whereas previous authors (Brown et al., 1980; Brown et al., 1985; Christiansen et al., 1982; 1985) have discussed similar results as supporting the

hypothesis that one's cognitions regarding the positive effects of substance use may play a role in influencing decisions to use or not use alcohol (Leigh, 1989), it is equally plausible to hypothesize that drinking experience itself could lead to the endorsement of more expectancy statements, or some third (or more) factor may influence both expectancies and drinking pattern. The question of a causal relationship between cognitive factors and psychoactive substance use must await future research. The comparison of findings from the present study to previous work, and the interpretation of the present data as being consistent with hypotheses regarding the role of expectancies in substance use and abuse, is not meant to imply causation. With this preface in mind, the results of the present study may be viewed as consistent with the hypothesis that those individuals who use psychoactive substances frequently and abusively may do so, at least in part, because they expect substantial positive effects from doing so.

Comparisons between substance abusers and non-users on the AEQ scales yielded significant differences on five of the six scales. Substance abusers were found to have greater expectations of Global Positive Change, Sexual Enhancement, Social and Physical Pleasure, Social Assertion and Tension Reduction when compared to those who have never used alcohol or other drugs.

The results of the present study regarding comparisons between substance abusers and minimal substance users were surprising. Given the substantial difference in substance use habits, it was expected that there would be pervasive differences in expected reinforcing effects from alcohol. Although substance abusers tended to endorse more positive expectancy statements with reference to alcohol use across all scales, statistically significant differences were found on only two of the six AEQ scales. Substance abusers were found to expect significantly more Sexual Enhancement and Tension Reduction than did the minimal substance users. Although these findings are consistent with prior research (e.g., Brown, Creamer, & Stetson, 1987; Christiansen & Goldman, 1983; Rohsenow, 1983), the finding that abusers and minimal users did not differ significantly with respect to positive expectations for Global Positive Changes, Social and Physical Pleasure, and Social Assertion was unexpected. These results, however, bring up several interesting points. If those who use substances minimally hold expectations for reinforcement from the use of drugs which are similar to those who abuse drugs, then some other intervening mechanism(s) must be related to differences in substance use patterns.

One such intervening mechanism may be individual differences in the quality of early experiences with

substance use. It is possible that those who choose to use psychoactive drugs on an infrequent basis, do so because they hold stronger negative expectations for drug use resulting from aversive early experiences. Although the expectancy statements of the AEQ do not include anticipated negative consequences from drinking alcohol, previous work has found that higher negative expectations for alcohol use are related to nonuse of drugs (Christiansen et al., 1982; Southwick, et al., 1981).

An alternative explanation might lie in the modification of substance use expectations through substance use experiences. It is possible that sufficient experience with drugs to become familiar with the reinforcing effects results in a rapid and substantial increase in positive expectations to a level near that of abusers. Further substance use may then increase expectations only slightly and in specific ways. This possibility might account for the relatively few significant differences between abusers and minimal users. Again, such an explanation would posit the existence of other intervening factors which influence drug use and would further point out the need to examine a variety of biological and psychosocial factors which might influence substance use patterns.

A third explanation for the present results may be related to the method of subject classification. Given that slightly over half of the substance abusers reported using marijuana but not alcohol abusively, the measurement of alcohol expectancies may account for only part of the variance in psychoactive substance use. The present sample of substance abusers may hold different expectations for reinforcement from alcohol use as compared to other drug use. Thus, the assessment of expectations related to alcohol use may not provide an accurate assessment of those expectations related to use of other psychoactive substances. Although the present results suggest some similarities in expectancy structures, future research aimed at the development of techniques to assess expectations for the effects of marijuana and other drugs should allow further clarification of such expectational differences.

Gender Differences

The present results regarding gender differences in expectations of the reinforcing effects of alcohol are difficult to interpret. The multivariate analysis of variance on the overall expectancy profiles did not differ significantly between males and females within the present sample. Despite this finding, each specific expectancy factor was investigated separately with respect to gender effects. Although such

differences may not be reliably interpreted in the present study, discussion of possible expectational differences between men and women will be useful in guiding future research on gender effects with the same or similar populations. For example, the present data suggest the possibility that females expect greater overall Global Positive Changes and Tension Reduction than do males. As this would be in direct contrast with previous findings within a college student population (Rohsenow, 1983), these results suggest the possibility that the relationship between positive expectations for alcohol use and subject gender may depend on the population under study. Further investigations which allow comparisons across various subject populations should help to assess this possibility.

The present data also suggest that both subject gender and substance use pattern may be related to expectations of sexual enhancement. Females expected greater sexual enhancement than males within the abusers group but not within the abstainers or minimal users groups. Further, expectations of sexual enhancement may be related to level of substance use for the females only. The present study suggests that, within this population, female abusers may expect greater sexual enhancement than all other subject groups. These results provide an interesting contrast

with previous studies investigating gender differences. However, further investigation of the relationship between expectations, subject gender, and typical substance use habits is needed.

Alcohol Use and Use of Other Drugs

As in previous work cited earlier (Battistich & Zucker, 1980; Wechsler, 1976), the present study demonstrated a significant positive correlation between extent of alcohol use and extent of other drug use. Those subjects who reported frequent use of alcohol also tended toward frequent use of other psychoactive drugs as well. To the extent that drinking alcohol and using other psychoactive drugs are considered similar behaviors, their underlying mediational mechanisms may also be similar. A positive relationship between psychoactive substance use and alcohol expectancies would be congruent with this hypothesis of similar underlying cognitive mechanisms.

Alcohol Expectancies and Use of Alcohol and Other Drugs

The results of the correlational analyses with the six alcohol expectancy scales and both alcohol and drug use were significant for both extent of alcohol use and extent of other psychoactive substance use. Not surprisingly, those subjects who reported frequent use of alcohol also tended to hold higher expectations for reinforcing effects from alcohol on four of the six AEQ

scales. With the exception of Scale II (Sexual Enhancement), the correlations between extent of alcohol use and AEQ expectancies correspond to the results of the univariate ANOVAs for group differences.

A significant positive correlation was also found between extent of psychoactive substance use other than alcohol and all six alcohol expectancy scales of the AEQ. Similar to the relationship with extent of alcohol use, those subjects who reported frequent use of psychoactive substances other than alcohol also tended to hold higher expectations for reinforcing effects from alcohol use.

Difficulties in the precise quantification of drug use has been an ongoing problem in this type of research. Variability in drug potency, purity, duration of effects, and modes of ingestion, make precise measurement extremely difficult. This type of drug use variability, which was not accounted for in the present study, provide limitations for studies concerning psychoactive substance use other than alcohol.

With this qualifier in mind, it is interesting to note that psychoactive substance use (not including alcohol) was significantly correlated with all six expectancy scales, whereas alcohol use alone was significant for only four of these scales. It is also

worth noting that in most cases, extent of psychoactive substance use was found to have nearly as strong or stronger correlation coefficients when compared to extent of alcohol use. It is possible, therefore, that alcohol expectancies are equally as related to psychoactive substance use other than alcohol as they are to alcohol use. Perhaps expectations regarding alcohol are a subgroup of a more general set of expectations which may mediate (or are determined by) all types of psychoactive substance use. Once again, causality cannot be inferred from the present data.

Age and Substance Use

Inconsistent with predictions, there were no differences in mean ages among the three substance use classification groups. Whereas previous work has found that alcohol use among adolescents tends to increase with age (Christiansen et al., 1982), the present study did not indicate such age differences. It is possible that the present subjects tended to develop abusive substance use patterns at a younger age as compared to the high school student population in the Christiansen et al. study. That study also included subjects from the 12-19 year age group whereas the present study represented those 16 to 24 years of age. This restricted age range may have influenced the present results.

Relationship to Previous Work

The results of the present study with regard to comparisons of abusers and abstainers are consistent with previous studies in the area (Brown et al., 1980; Brown et al.,1985; Christiansen & Goldman, 1983; Southwick et al., 1981). The replication of a relationship between alcohol expectancies and overall psychoactive substance use provides another demonstration of this relationship among a population not previously studied. Thus, the present findings not only serve to validate previous findings but also demonstrate the robust nature of this relationship. Similar results in previous studies have been viewed as consistent with the hypothesis that alcohol expectancies may play a significant role in determining alcohol use patterns (Brown et al., 1985; Christiansen et al., 1985; Christiansen et al., 1982; Leigh, 1989). Nevertheless, causality remains an open question.

Whereas previous studies have demonstrated similar results among mostly Caucasian college students and adults of middle to high socioeconomic strata, this study assessed the relationship of alcohol expectancies with alcohol and other drug use in a low SES, primarily ethnic minority population of young people who had limited educational experience. It should be noted that since subject ethnicity was allowed to vary randomly, the substance use classification groups were

not balanced with respect to ethnic background (see Table 1). This imbalance among the three subject classification groups may have influenced the present results. Nevertheless, populations having low educational attainment, low socioeconomic status, and ethnic minority status are particularly important to study, since these characteristics have been associated with more frequent substance abuse problems (Cahalan et al., 1969; Lex, 1985; Parker & Parker, 1980). Despite the use of differing methodologies across different educational levels, socioeconomic classes, ethnic cultural groups, maturational levels, and psychoactive substance use habits (cf. Brown et al., 1985; Christiansen et al., 1985), alcohol expectancies have consistently been shown to be significantly related to alcohol consumption.

Expectancies as a Mediator

The results of the present study are also consistent with prior work which has suggested that alcohol expectancies play a mediational role in the development of problem substance use patterns. Again, it should be noted that a cause and effect relationship cannot be established from the present data. As in prior research (Christiansen et al., 1982), however, specific expectations for reinforcement from alcohol were found within a group of subjects who had never had any direct experience with psychoactive substance use

(i.e., abstainers). Thus, it would appear that expectations for reinforcement from psychoactive substance use exist among adolescents the very first time they use them. Since placebo effects are capable of altering actual experience of psychoactive substance effects (Christiansen et al., 1982; Roehling & Goldman, 1987), the expectation that substance use will produce a particular effect may operate to help produce this effect, and thereby may reinforce that specific expectation. The more strongly a drug user expects a psychoactive substance to produce a desired outcome in a particular situation, the more likely he or she would be expected to use the drug. The nature of an individual's early experiences with drugs could determine which expectations are reinforced and the strength of this reinforcement. The attribution of any causal effect between cognitive expectancies and substance abuse, however, must await future longitudinal study.

Further evidence for such a mediational model of early experience comes from comparisons with the minimal substance users group. In the present study, minimal users were selected based on their having sufficient experience with alcohol and/or other drugs to be familiar with the resulting effects. Differences between abstainers and minimal users may then be, in part, related to these initial drug use experiences.

Although differences in expectations related to alcohol use between these two groups were not as pervasive as predicted, minimal substance users were found to expect significantly more social and physical pleasure from alcohol use than did the abstainers.

Prior research has demonstrated that expectations of enhanced social behavior best discriminated between nondrinking and light drinking high school students (cf. Goldman, Brown, & Christiansen, 1987). It is reasonable to assume that those who use psychoactive substances only a few times a year might confine drinking to special occasions (e.g., birthday, anniversary, New Year's Eve party). If drinking only takes place in such "party" situations, then it would be expected the the social pleasure expectation would be most salient and therefore most strongly reinforced. These results are therefore consistent with the hypothesis that previously-existing expectations may interact with early alcohol use experiences to influence subsequent alcohol use patterns. Once again, however, such cause and effect relationships cannot be validated by the results of the present study. It is equally plausible to presume, based on the present data, that infrequent drinking results in little need to rationalize drinking and, therefore, infrequent endorsement of positive expectations from its use. Such causal relationships

must be validated through future longitudinal study (Leigh, 1989).

Extension of Previous Work

The results of the present study also extend previous work in that prior studies have compared groups of subjects classified according to alcohol use only. Studies indicating a strong relationship between alcohol use and use of other psychoactive substances (Battistich & Zucker, 1980; Wechsler, 1976) suggest a strong possibility that subject classification according to alcohol use alone may not take into account subjects' total psychoactive substance use.

Subjects in the present study were classified according to both alcohol and other psychoactive substance use. Thus, the abstainers were selected on the basis of having never had direct experience with either alcohol or other substances. The minimal users group was defined as different from the abstainers primarily on an experiential basis. Minimal users were selected as having had at least 10 direct experiences with psychoactive drugs (alcohol and/or other drugs) but not currently using any psychoactive substance on a regular basis (i.e., two days per month or less).

Given that 65% of the abusers group used marijuana abusively, the results of the present study may be viewed as indicative of a relationship between positive

reinforcement expectations from alcohol use and frequency of overall psychoactive substance use. Although the present study assessed expectation of reinforcement from alcohol, it is possible that some of these expectations overlap with positive expectations for use of marijuana or other drugs.

High Risk Profile

The results of the present study also allow the identification of those specific expectations related to problem substance use within the present population. Substance abusers were found to expect greater Global Positive Changes, Sexual Enhancement, Social and Physical Pleasure, Social Assertion, and Tension Reduction than those who abstain from substance use. To the extent that cognitive expectancies may eventually be used for the identification of those individuals at high risk for the development of substance use problems, it will be important to have information regarding abusers' expectancy profiles for use among a variety of different populations. The similarities between the results of the present study and that of previous research concerning alcohol use among various populations (e.g., Brown, 1985a; Brown et al., 1985; Brown, Creamer, & Stetson, 1987), provides further evidence that similar patterns of greater positive expectations are found among those who abuse

alcohol and those who abuse other psychoactive substances.

Clinical Implications

Studies such as the present one lend support to the theoretical model of alcohol expectancies. However, the true utility of the model needs to be tested longitudinally. To the extent that reinforcement expectancies can be utilized to effectively predict the development of substance use problems later in life, cognitive expectancy research holds great potential for targeting early intervention methods.

The clinical implications of such a model are also important. If early alcohol expectancies are capable of predicting the development of substance abuse problems over a meaningful time span, then adolescents at high risk for the development of psychoactive substance use problems can be identified prior to any direct experience with psychoactive substances and guided into early prevention programs aimed at decreasing their risk status. Further, if alcohol expectancies do play an important role in decisions about substance use, then direct intervention at the cognitive expectancy level may allow more individualized, effective, and lasting treatment programs. Preliminary results using longitudinal methodology have been encouraging (Brown, 1985;

Christiansen, Smith, Roehling, & Goldman, 1989). However, continued investigations with larger and more diverse populations will be necessary in order to validate the utility of the expectancy model in predicting individuals' future psychoactive substance use behavior.

Suggestions for Future Research

The present study clearly demonstrates that alcohol expectancies are related to psychoactive substance use within this population. The generalizability of these results to other populations is difficult. The characteristics possessed by those individuals who volunteer for enrollment in a residential educational-vocational training center are certain to be unique. Differences in ethnic cultural background, socioeconomic level, and educational level also make generalization difficult. However, the similarities between the present results and those of numerous other studies in the area suggest some generalization may be possible. Future research designed to allow a direct comparison between matched subjects of different demographic characteristics is needed.

Prior research has suggested that expectations of reinforcement from alcohol use may play a mediational role in alcohol abuse (Christiansen et al., 1982; Leigh, 1989). These alcohol expectations also

appear to be significantly related to psychoactive substance use. Further research is needed to define the expectations related to the use of a variety of psychoactive substances other than alcohol. More precise methodology for quantifying other drug use habits is also lacking. It is hoped that the results of the present study will provide some preliminary data which will stimulate future research in this area.

Further investigation with respect to negative expectations is also suggested. Since few differences in positive expectations for alcohol use were found between abstainers and minimal users, other expectations, such as negative expectations, may be the more salient anticipated outcome factors that discriminate these individuals. Recent research has also suggested that the differential values placed on both positive and negative expectations may be an important factor in determining drug use characteristics (Leigh, 1987; 1989). Thus, further research assessing negative expectations among all types of psychoactive substance users and abstainers, as well as the values placed on both positive and negative expectations, will be important.

The present data also suggest the possibility that early experiences with alcohol and other psychoactive substance use may reinforce either positive or negative expectations. Future research assessing the

relationship between the quality of early experiences with psychoactive substances and later substance use is needed. Further exploration of the mechanisms that may interact with socially learned expectations and the quantitative and qualitative aspect of initial substance use is also needed. Few studies have included assessment of initial substance use experiences in their data collection. However, some evidence exists that a higher percentage of alcoholic subjects are able to remember their first drinking experience with alcohol and rated this experience with significantly higher positive ratings than did nonalcoholics (Senter et al., 1979). Alcoholics also report having their "best high" at a significantly younger age and their "worst high" at a significantly older age than do nonalcoholics. These data indicate that the consequences of early experience with alcohol may be significant in mediating later drinking patterns. Therefore, future research regarding these early experience variables is suggested.

The results of expectancy studies with respect to gender differences have been contradictory and inconclusive. Future research must concentrate on delineating these differences which may suggest differential motivations for substance use between men and women. While it is obvious from the present and previous studies that gender differences do exist, the

precise description of these differences must await future research.

Not replicated in the present study are previous findings suggesting that the expectancies of heavy substance users become more refined and crystalized with increasing drug use experience (Brown et al., 1980; Christiansen et al., 1982; Christiansen et al., 1985). Whereas prior work has found that less experienced drinkers hold more global expectancies, while heavy drinkers hold more specific expectations for sexual enhancement and arousal and aggression, the present study indicates that an abusive substance use pattern in this population is associated with higher alcohol expectancy endorsement across both global and specific expectancy factors. Results similar to those of the present study have also been obtained by other researchers (Brown et al., 1985; Southwick et al., 1981). Further research will be necessary to define the exact ways in which expectations for reinforcement change with increasing substance use experience and age.

Much research remains to be done in validating experimental hypotheses related to the alcohol expectancy model (Leigh, 1989). However, those studies conducted to date have made it clear that continued research regarding the role of expectations in the development of substance use problems holds the

potential for increasing the understanding of how such problems develop and how psychoactive substance use problems are best treated. Therefore, continued research on alcohol expectancies will likely have theoretical, scientific, and clinical advantages for the future.

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APPENDIX A

NORMATIVE DATA

In order to obtain normative data about the population under study, information regarding substance use habits was collected from a random sample of subjects. Because the present study selected subjects from the ends of a continuum of substance use (i.e. abstainers and minimal users compared to abusers), generalization of the resulting data to the population as a whole would be difficult in the absence of information about the distribution of such characteristics within the larger population. Further, such information about a population which has received limited study in the past was considered useful in itself.

METHOD

Subjects

A random sample of 100 subjects was taken from among a total of 917 new enrollees entering a vocational-educational training facility between January 1987 and December 1987. This time period was the same year during which data collection took place for the expectancy study. Subjects who were selected as

part of the alcohol expectancy study were excluded from this sample. The demographic characteristics of this sample are listed in Table A-1.

Procedure

Records of the random sample subjects were reviewed and information from their original entrance interviews regarding their self-reported substance use habits was recorded. Relevant demographic information about these subjects was also recorded.

A less extensive version of the Cursory Substance Use Questionnaire (original version) which was part of the previously-existing enrollment procedure was administered in a semi-structured interview format by facility counselors with at least a Bachelors Degree in a social science and two years experience in the field. The original interview included questions about the type, quantity, and frequency of alcohol use and the types of drugs used (i.e., marijuana, cocaine, PCP, heroine, and/or any others specified). The enrollees were informed that this information would be available to the facility medical staff and counselors, but would otherwise remain confidential. They were also informed that this information might be used for the anonymous reporting of statistical information and had given their signed consent for such uses of the information obtained.

Table A-1

Normative Sample Demographic Characteristics

Subjects	100
Males	68
Females	32
Mean Age (yrs)	19.4 (SD = 2.0)
Range	16-24
Mean Education (yrs)	10.0 (SD = 1.9)
Range	6-12
Blacks (%)	70
Whites (%)	25
Other (%)	5

Because the original Cursory Substance Use interview used a different response classification format than that used for the expectancy study, and because some comparison between the random sample and the study sample was desirable, expectancy study subjects' responses were recorded as the most equivalent response on the original questionnaire response format. For example, "Between four drinks and a pint" was recorded as "4-5 drinks." The resulting data were examined with respect to substance use characteristics and is considered representative of the population under study.

QFI Calculations

Subjects' responses regarding their usual quantity and frequency of alcohol consumption, along with the type of alcohol which they usually consume, were used to calculate a Quantity-Frequency Index (QFI) of alcohol consumption (Cahalan et al., 1969). By assigning ordinal weight values according to the reported frequency of drinking, and then adjusting this value according to the amount of alcohol consumed and its absolute alcohol content, a reliable estimate of alcohol intake is obtained which is independent of alcohol content of the beverage consumed. Thus the QFI allows comparisons in absolute alcohol intake between those who consume alcohol in various forms (i.e., beer, wine, or liquor).

RESULTS

The characteristics of this sample are roughly similar to those of the expectancy study sample with regard to age, education, and ethnic background (see Table 1). Thus, the subjects in the expectancy study and the present normative study are comparable.

QFI Score Distribution

Using the QFI scores resulting from the above method of calculation, an estimate of the population distribution for alcohol consumption was obtained. As can be seen in Figure A-1, the distribution of QFI scores is markedly skewed toward the abstaining end of the continuum and indicates a large number of persons who abstain from drinking alcohol. In fact, 27 percent of the normative sample indicated they never drank alcohol.

The usual drinking habits of those who did consume alcohol are presented in Table A-2. The modal drinking pattern suggested that the majority of subjects reported that they consume one to three beers, once per week or less (QFI = .12 to .30). However, a large number of individuals reported drinking from four to five drinks or beers on two to three days per week (QFI = .38 to .76). The remaining drinkers would appear to be heavy alcohol consumers, with a small percentage falling toward the extreme end (QFI = 1.1 to 2.1).

Mean QFI scores for both the normative sample and

Figure A-1. Quantity-Frequency Index Score Distribution for Random Sample

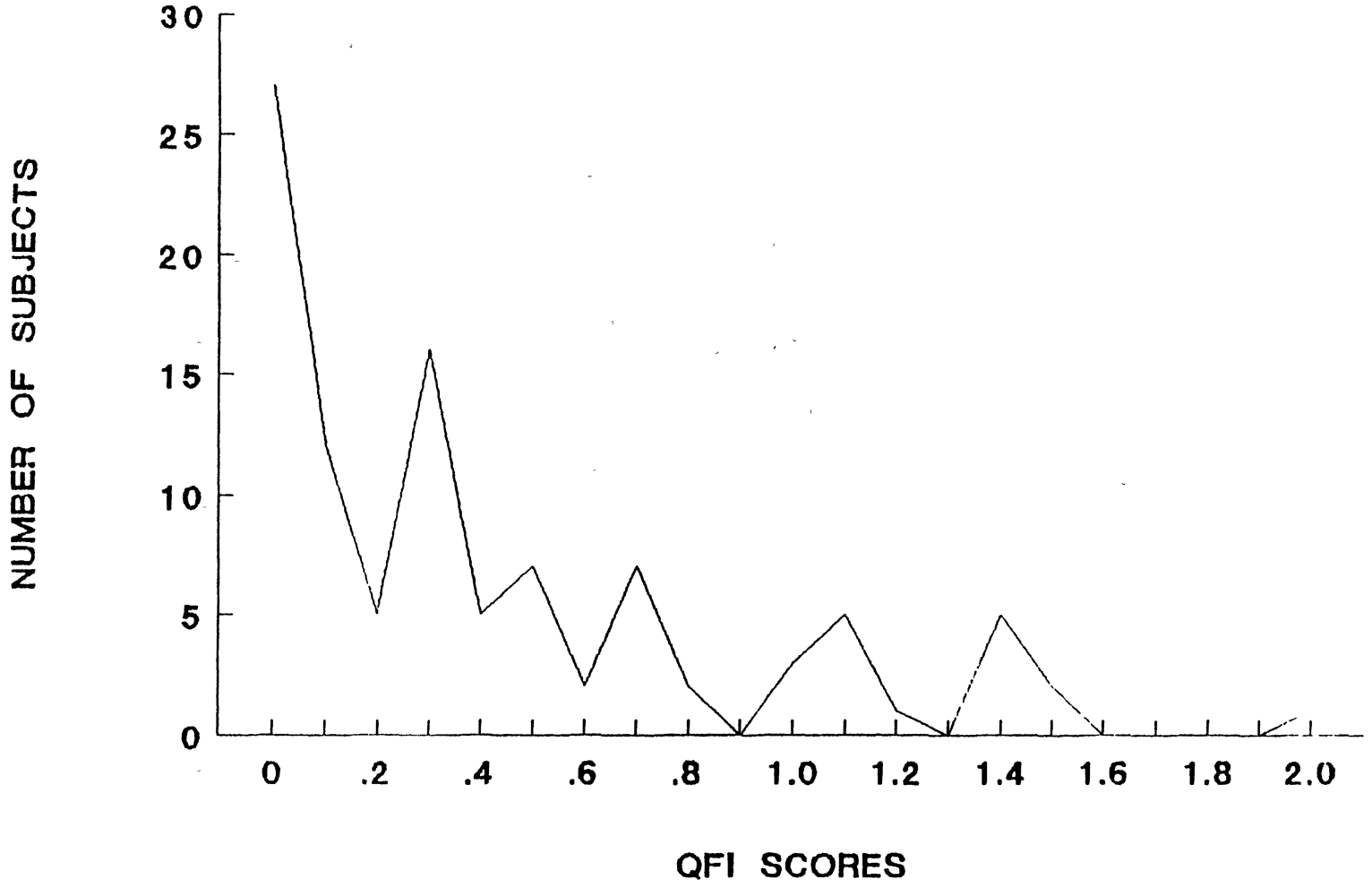

Table A-2

Normative Sample Alcohol Consumption

Drinking Variable	Percentage
Usual Frequency of Drinking	
Drink once per week or less	73
Drink 2-3 days per week	26
Drink 4-5 days per week	0
Drink 6-7 days per week	1
Usual Quantity Consumed	
1-3 drinks	54
4-5 drinks	24
6 drinks	8
6+ drinks	14
Usual Type of Alcohol Consumed	
Beer	78
Wine	7
Liquor	15

Table A-3

Mean Quantity-Frequency Index Scores

Sample	n	M	SD
Normative Sample	100	.43	.47
Males	68	.46	.45
Females	32	.35	.48
Study Sample	60	.50	.74
Abstainers	20	.00	.00
Minimal Users	20	.36	.28
Males	10	.37	.36
Females	10	.36	.20
Abusers	20	1.13	.95
Males	10	1.14	.97
Females	10	1.12	.98

the study sample are contained in Table A-3. A comparative t-test between the sample means did not indicate a statistically significant difference between the two samples with respect to QFI scores, $t(158) = 0.8$.

Drug Use Characteristics

When drug and alcohol use are considered together, a slightly different picture emerges. Eight percent of the normative sample reported current marijuana use but no current use of alcohol. Thus, the proportion of subjects who abstain from both drug and alcohol use falls to 19 percent. Of those subjects who report current use of alcohol, 77 percent report current use of marijuana also. Of those who use both alcohol and marijuana, 66 percent use other drugs as well.

The other drug use characteristics of this population are illustrated in Table A-4. Only 17 percent of the normative sample indicated no use of drugs other than alcohol or cigarettes. Of those subjects who reported using at least one drug other than alcohol or cigarettes, all of them used marijuana. Cocaine and amphetamine use was also prominent. No subjects reported current use of other drugs who did not also report current use of marijuana. Thus, overall, over 80 percent of this population reports current use of either marijuana or alcohol and nearly 70 percent of these individuals use

Table A-4

Current Other Drug Use of Normative Sample

Drug Use Variable	Males (%)	Females (%)	All (%)
No drug use	19	16	35
Use of at least one drug	49	16	65
Marijuana	49	16	65
Cocaine	4	7	11
Amphetamines	7	4	11
Sedatives	5	2	7
Hallucinogens	2	4	6
Inhalants	2	1	3
Other drugs	4	2	6
Opiates	0	1	1
Use of 2+ drugs	11	7	18
Use of 3+ drugs	7	6	13
Use of 4+ drugs	4	4	8
Use of 5-8+ drugs	3	2	5

both. Of those who use both marijuana and alcohol, two-thirds use at least one other drug in addition to alcohol and marijuana.

DISCUSSION

Generalizability of the Expectancy Data

The information resulting from the random sample provide an estimate regarding alcohol and drug use in the present population. While 27 percent of the sample report current abstinence from alcohol use, only 19 percent report abstinence from other drug use, specifically marijuana. These data also allow a comparison between the sample collected for the expectancy study and larger population. The lack of any difference in mean QFI scores between the random sample and the expectancy study sample would suggest that the expectancy data are generalizable to the larger population.

Comparison with Similar Population Studies

Although the high proportion of non-alcohol users within the present population might seem somewhat unexpected at first, a high proportion of non-alcohol users has also been noted in previous work focusing on Blacks (Harper, 1978) and low income populations (Forney, et al., 1984) and groups having low educational attainment (Zucker & Harford, 1983). Given the high number of subjects possessing these

characteristics in the present sample, similar results would be expected.

It is also interesting to note that the population distribution of alcohol use mirrors that of the study sample. Specifically, a large number of the random sample report abstinence or infrequent alcohol use. This level of use is reflected in the Abstaining and Minimal Using groups of the expectancy study.

As would be expected, those adolescents identified as substance abusers in the expectancy study sample contained individuals with higher QFI scores when compared with the general population. For example, the highest QFI score identified in the normative sample was 2.03 whereas the maximum score found in the study sample was 2.88. Thus the selection criteria used for the classification of the Abusers Group was effective at identifying subjects at the extreme abusive end of the drinking continuum. Taken together, these data further support the generalizability of the expectancy data to the general population.

Additional Conclusions Suggested by the Data

As a whole, these data bring up several interesting points. Although the present study was designed to compare the extremes of substance use patterns, the prevalence within this population of persons who drink more than the minimal users but less

than the abusers (i.e., those who drink small to moderate quantities of alcohol on one to two days per week) would argue for the inclusion of light and moderate drinking samples in future research. Nevertheless, the results of the present study may be viewed as generalizable to the population sampled.

Second, these data point out the prevalence of drug and alcohol use within this population and also stress the importance of assessing alcohol and other drug use in identifying substance use patterns. Since eight percent of alcohol abstainers in this study use marijuana, the potential exists for misidentifying these subjects as non-substance users if only alcohol consumption patterns are assessed.

Finally, the prevalence of polysubstance use serves to illustrate the severity of substance use patterns among this population. The high proportion of subjects using other drugs concurrent with alcohol also points out the necessity of assessing both alcohol and drug use in future research. Since over half of the population use other drugs in addition to alcohol, drug use may provide a potential confound in research assessing correlates of alcohol abuse only. Thus, the direct or interactive effects of other drug use on factors thought to be associated with alcohol abuse warrants consideration in future research.

APPENDIX B

CRITERIA FOR EXPERIMENTAL GROUP ASSIGNMENT

Group: NONUSERS

Criteria: Individual has never used alcohol or drugs at any point in his/her life. (If the individual has only had sips of alcohol as a child given to them by an adult on three or less occasions, then he/she would still be appropriate for this group.)

Group: MINIMAL USERS

Criteria: Individual meets all five criteria specified below.

1. Individual has used alcohol at least 10 times in his/her life or individual has used marijuana at least 10 times in his/her life.
2. Individual has a current frequency (past year) of use of alcohol or marijuana that averages two days per month or less.
3. Current (past year) use of alcohol and marijuana does not include any binges (e.g., continuous intoxication for 12 or more hours).
4. Frequency of use of alcohol or marijuana has never been more than an average of two days per month.

5. Individual has used drugs other than alcohol and marijuana only three times or less in entire life. This does not include use of medication as prescribed.

Group: ABUSERS

Criteria: Individual meets <u>at least one</u> of the criteria specified below.

1. Individual drinks alcohol, as specified below, on two or more days per week.
   a. 3 six-packs
   b. 1 fifth or liter of liquor
   c. 3 bottles of wine
2. Individual drinks alcohol, as specified below, on four or more days per week.
   a. 4 beers
   b. 4 mixed drinks
   c. 4 glasses of wine
3. Individual uses drugs other than alcohol on four or more days per week.

APPENDIX C

CURSORY SUBSTANCE USE QUESTIONNAIRE

Y N 1. Do you smoke cigarettes?

____ 1a. If yes, how many per day?

Y N 2. Over the past 12 months, have you used any alcohol?

Y N 2a. If no, have you ever had any alcohol to drink (other than sips an adult have you as a child on 3 or less occasions)?

Y N 2b. If yes, to #2 or #2a, would you say that you had used alcohol 10 or more times over your whole life?

Y N 2c. If yes to #2, on the average, how often have you been drinking alcohol over the past 12 months? (Circle one category only)

_____ times per year or month or week

2d. If yes to #2, what kind of alcohol do you usually drink?

_____ Beer

_____ Wine

_____ Liquor

2e. If yes to #2, how much of this kind of alcohol do you usually drink at a time? (Number of beers, glasses of wine, or mixed drinks)

_____ 1

_____ 2 - 3

_____ 4 - 5

_____ 6

_____ > 6 (specify:_____)

Y N 2f. If yes to #2, in the past 12 months, have you had any days in which you drank a lot of alcohol and stayed high for most or all of the day (more than 12 hours)?

Y N 2g. If yes to #2, prior to the past 12 months, have you typically used alcohol any more often than you just described?

2h. If yes to #2, what has been your most frequent use of alcohol, for at least a one month period, over your whole life? (Circle one category only)

_____ # times per year or month or week

Y N 3. Over the past 12 months, have you used any marijuana ("weed", "pot")?

Y N 3a. If no, have you <u>ever</u> used any marijuana, even to experiment with?

Y N 3b. If yes, to #3 or #3a, would you say that you had used marijuana 10 or more times over your whole life?

3c. If yes to #3, on the average how often have you been using marijuana over the past 12 months? (Circle one category only)

_____ # times per year or month or week

Y N 3d. If yes to #3, in the past 12 months, have you had any days in which you used a lot of marijuana and stayed high for most or all of the day (more than 12 hours)?

Y N 3e. If yes to #3, prior to the past 12 months, have you typically used marijuana any more often than you just described?

3f. If yes to 3e, what has been your most frequent use of marijuana, for at least a one month period, over your whole life? (Circle one category only)

_____ # times per year or month or week

Y N 4. Over the past 12 months, have you used any drugs other than marijuana?

4a. If yes - Specify:

Y N Opioids (e.g., heroin)?

Y N Sedative / Hypnotics / Tranquilizers / Barbiturates (e.g., Valium, Quaaludes)/

Y N Cocaine?

Y N Amphetamines (e.g., "speed")/

Y N PCP?

Y N Hallucinogens (e.g., LSD, mushrooms)?

Y N Inhalants (e.g., glue, liquid paper, paint)?

Y N Other(s) - Specify:_____)

Y N 4b. If no to #4, have you ever used any drugs, not including marijuana, even to experiment with?

4c. If yes, to #4b - Specify:

Y N Opioids (e.g., heroin)?

Y N Sedative / Hypnotics / Tranquilizers / Barbiturates (e.g., Valium, Quaaludes)/

Y N Cocaine?

Y N Amphetamines (e.g., "speed")

Y N PCP?

Y N Hallucinogens (e.g., LSD, mushrooms)?

Y N Inhalants (e.g., glue, liquid paper, paint)?

Y N Other(s) - Specify:_____)

4d. If yes to #4 or #4b - Specify the number of times you have used each of the substances below over your whole life. Also, specify how often you have been using each substance over the past 12 months.

# times in life	current frequency	circle one category	
_____	_____	per year or month or week	Opioids
_____	_____	per year or month or week	Sedatives/ Hypnotics/ Tranquilizers/ Barbiturates
_____	_____	per year or month or week	Cocaine
_____	_____	per year or month or week	Amph.
_____	_____	per year or month or week	PCP
_____	_____	per year or month or week	Halluc.
_____	_____	per year or month or week	Inhalants
_____	_____	per year or month or week	Other(s) - Specify: _____

APPENDIX D

ALCOHOL EXPECTANCY QUESTIONNAIRE III

The following pages contain statements about the effects of alcohol. Read each statement carefully and respond according to your own personal thoughts, feelings and beliefs about alcohol now. We are interested in what you think about alcohol, regardless of what other people might think.

If you think that the statement is true, or mostly true, or true some of the time, then mark "true" or "A" on the answer sheet. If you think the statement is false, or mostly false, then mark "false" or "B" on the answer sheet. When the statements refer to drinking alcohol, you may think in terms of drinking any alcoholic beverage, such as beer, wine, whiskey, liquor, rum, scotch, vodka, gin, or various alcoholic mixed drinks. Whether or not you have had actual drinking experiences yourself, you are to answer in terms of your beliefs about alcohol. It is important that you respond to every question.

PLEASE BE HONEST. REMEMBER, YOUR ANSWERS ARE CONFIDENTIAL

RESPOND TO THESE ITEMS ACCORDING TO WHAT YOU PERSONALLY BELIEVE TO BE TRUE ABOUT ALCOHOL

1. Alcohol can transform my personality.
2. Drinking helps me feel whatever way I want to feel.
3. Some alcohol has a pleasant, cleansing, taste.
4. Alcohol makes me feel happy.
5. Drinking adds a certain warmth to social occasions.
6. Sweet, mixed drinks taste good.
7. When I am drinking, it is easier to open up and express my feelings.
8. Time passes quickly when I am drinking.
9. When they drink, women become more sexually relaxed.
10. Drinking makes me feel flushed.
11. I feel powerful when I drink, as if I can really influence others to do as I want.
12. Drinking increases male aggressiveness.
13. Alcohol lets my fantasies flow more easily.
14. Drinking gives me more confidence in myself.
15. Drinking makes me feel good.
16. I feel more creative after I have been drinking.
17. Having a few drinks is a nice way to celebrate special occasions.

18. I become lustful when I drink.
19. When I am drinking I feel freer to be myself and to do whatever I want.
20. Drinking makes it easier to concentrate on the good feelings I have at the time.

ANSWER ACCORDING TO YOUR CURRENT PERSONAL BELIEFS

21. Alcohol allows me to be more assertive.
22. When I feel "high" from drinking, everything seems to feel better.
23. Alcohol decreases my hostilities.
24. If I am nervous about having sex, alcohol makes me feel better.
25. Drinking relieves boredom.
26. I find that conversing with members of the opposite sex is easier for me after I have had a few drinks.
27. After a few drinks, I feel less sexually inhibited.
28. Drinking is pleasurable because it is enjoyable to join in with people who are enjoying themselves.
29. I like the taste of some alcoholic beverages.
30. If I am feeling restricted in any way, a few drinks make me feel better.
31. Men are friendlier when they drink.
32. It is easier for me to meet new people if I've been drinking.
33. After a few drinks, it is easier to pick a fight.

34. Alcohol can eliminate feelings of inferiority.
35. Alcohol makes women more sensuous.
36. If I have a couple of drinks, it is easier to express my feelings.
37. I feel less bothered by physical ills after a few drinks.
38. Alcohol makes me need less attention from others than I usually do.
39. Alcohol makes me feel closer to people.
40. After a few drinks, I feel more self-reliant than usual.

ANSWER ACCORDING TO WHAT YOU PERSONALLY BELIEVE NOW

41. After a few drinks, I don't worry as much about what other people think of me.
42. When drinking, I do not consider myself totally accountable or responsible for my behavior.
43. Alcohol enables me to have a better time at parties.
44. Anything which requires a relaxed style can be facilitated by alcohol.
45. Drinking makes the future seem brighter.
46. I am not as tense if I am drinking.
47. I often feel sexier after I have had a couple of drinks.
48. Having a few drinks helps me relax in a social situation.
49. I drink when I am feeling mad.

50. Drinking alone or with one other person makes me feel calm and serene.
51. After a few drinks, I feel brave and more capable of fighting.
52. Drinking can make me more satisfied with myself.
53. There is more camaraderie in a group of people who have been drinking.
54. My feelings of isolation and alienation decrease when I drink.
55. A few drinks make me feel less in touch with what is going on around me.
56. Alcohol makes me more tolerant of people I do not enjoy.
57. Alcohol helps me sleep better.
58. Women are friendlier after they have had a few drinks.
59. I am a better lover after I have had a few drinks.
60. Women talk more after they have had a few drinks.

ANSWER ACCORDING TO WHAT YOU PERSONALLY BELIEVE NOW

61. Alcohol decreases muscular tension.
62. Alcohol makes me worry less.
63. A few drinks make it easier to talk to people.
64. After a few drinks I am usually in a better mood.
65. Alcohol seems like magic.
66. Women can have orgasms more easily if they have been drinking.

67. At times, drinking is like permission to forget problems.
68. Drinking helps me get out of a depressed mood.
69. After I have had a couple of drinks, I feel I am more of a caring, sharing person.
70. Alcohol decreases my feelings of guilt about not working.
71. I feel more coordinated after I drink.
72. Alcohol makes me more interesting.
73. A few drinks make me feel less shy.
74. If I am tense or anxious, having a few drinks makes me feel better.
75. Alcohol enables me to fall asleep more easily.
76. If I am feeling afraid, alcohol decreases my fears.
77. Having a drink in my hand can make me feel secure in a difficult social situation.
78. Alcohol can act as an anesthetic; that is, it can deaden pain.
79. I enjoy having sex more if I have had some alcohol.
80. I am more romantic when I drink.
81. I feel more masculine / feminine after a few drinks.
82. When I am feeling antisocial, drinking makes me more gregarious.
83. Alcohol makes me feel better physically.

84. Sometimes when I drink alone or with one other person it is easy to feel cozy and romantic.

ANSWER ACCORDING TO WHAT YOU PERSONALLY BELIEVE NOW

85. I feel like more of a happy-go-lucky person when I drink.
86. Drinking makes get-togethers more fun.
87. Alcohol makes it easier to forget bad feelings.
88. After a few drinks, I am more sexually responsive.
89. If I am cold, having a few drinks will give me a sense of warmth.
90. It is easier to act on my feelings after I have had a few drinks.
91. I can discuss/argue a point more forcefully after I have had a drink or two.
92. A couple of drinks makes me more outgoing.
93. A drink or two can make me feel more wide awake.
94. A drink or two makes the humorous side of me come out.
95. Alcohol make me more outspoken or opinionated.
96. I tend to be less self-critical when I have something alcoholic to drink.
97. I find that conversing with members of the opposite sex is easier for me after I have had a few drinks.
98. Drinking makes me feel flushed.

99. It is easier to remember funny stories or jokes if I have been drinking.
100. After a few drinks I am less submissive to those in positions of authority.
101. Alcohol makes me more talkative.
102. I am more romantic when I drink.
103. Men can have orgasms more easily if they have had a drink.
104. A drink or two is really refreshing after strenuous physical activity.
105. Alcohol enables me to have a better time at parties.

ANSWER ACCORDING TO WHAT YOU PERSONALLY BELIEVE NOW

106. I can be more persuasive if I have had a few drinks.
107. Drinking makes people feel more at ease in social situations.
108. Alcohol helps me sleep better.
109. After a drink or two, things like muscle aches and pains do not hurt as much.
110. Drinking increases female aggressiveness.
111. Alcohol makes me worry less.
112. Alcohol makes it easier to act impulsively or make decisions quickly.
113. Alcohol makes me feel less shy.
114. Alcohol makes me more tolerant of people I do not enjoy.

115. Alcohol makes me need less attention from others than I usually do.
116. A drink or two can slow me down, so I do not feel so rushed or pressured for time.
117. I feel more sexual after a few drinks.
118. Alcohol makes me feel better physically.
119. A couple of drinks makes me more aroused or physiologically excited.
120. Things seem funnier when I have been drinking, or at least I laugh more.

APPENDIX E

AEQ ITEMS ALTERED ON THE AUDIOTAPE

Number	Item
1.	Alcohol can transform my personality. That means, alcohol can change my personality.
18.	I become lustful when I drink. That means, I become "horny" when I drink.
40.	After a few drinks, I feel more self-reliant than usual. That means, after a few drinks, I can handle things on my own more than usual.
44.	Anything which required a relaxed style can be facilitated by alcohol. That means, anything that requires being laid back can be made easier by alcohol.
50.	Drinking alone or with one other person makes me feel calm and serene. That means, drinking alone or with one other person makes me feel calm and happy.
53.	There is more camaraderie in a group of people who have been drinking. That means, there is more togetherness in a group of people who have been drinking.

54. My feelings of isolation and alienation decrease when I drink. That means, my feelings of isolation and aloneness decrease when I drink.

56. Alcohol makes me more tolerant of people I do not enjoy. That means, alcohol makes it easier to deal with people I do not like.

82. When I am feeling antisocial, drinking makes me more gregarious. That means, when I am feeling like I want to be alone, drinking makes me more outgoing and sociable.

95. Alcohol makes me more outspoken or opinionated. That means, alcohol makes me talk more or be more stubborn about what I think.

100. After a few drinks, I am less submissive to those in positions of authority. That means, after a few drinks, I am less likely to give in to people in positions of authority.

114. Alcohol makes me more tolerant of people I do not enjoy. That means, alcohol makes it easier to deal with people I do not like.

119. A couple of drinks makes me more aroused or physiologically excited. That means, a couple of drinks makes me more aroused and physically excited.

APPENDIX F

CUSTOMARY DRINKING RECORD (CDR)

1. I prefer to drink: 1=Beer 2=Wine 3=Liquor
   (including mixed drinks)
2. I usually drink: 1=Beer 2=Wine 3=Liquor
   (including mixed drinks)
3. My usual drinking pattern includes drinking in the morning:

   1=Never
   2=Once per week 4= 3 - 5 days
   3=Twice per week 5= 6 - 7 days

4. My usual drinking pattern includes drinking in the afternoon including with lunch:

   1=Never
   2=Once per week 4= 3 - 5 days
   3=Twice per week 5= 6 - 7 days

5. My usual drinking pattern includes drinking in the evening including with dinner:

   1=Never
   2=Once per week 4= 3 - 5 days
   3=Twice per week 5= 6 - 7 days

6. WHEN I DRINK I AM USUALLY WITH:

1= No one, I usually drink alone

2= Family members

3= Friends

4= People I meet in bars or whever I drink

5= Other

7. WHEN I DRINK I AM USUALLY AT:

1= Home, my place

2= The home of someone else, a friends house

3= A social event (party, luncheon, or dinner)

4= Bar or Lounge

5= No place special (street, car, etc.)

8. I HAVE HAD A HANGOVER:

1=Never 3=4-10 times

2=1-3 4=Over 10 times

9. I HAVE BEEN NAUSEOUS AND VOMITED BECAUSE OF ALCOHOL:

1=Never 3=4-10 times

2=1-3 4=Over 10 times

10. I HAVE HAD AN EPISODE OF THE SHAKES AFTER DRINKING:

1=Never 3=4-10 times

2=1-3 4=Over 10 times

11. I HAVE HAD A BLACKOUT (LAPSE OF MEMORY) FROM DRINKING:

    1=Never 3=4-10 times

    2=1-3 4=Over 10 times

12. I HAVE HAD A CONVULSION OR SEIZURE FROM DRINKING:

    1=Never 3=4-10 times

    2=1-3 4=Over 10 times

13. I HAVE HAD THE DTs (SAW, FELT OR HEARD THINGS THAT WERE NOT REALLY THERE) BECAUSE OF DRINKING:

    1=Never 3=4-10 times

    2=1-3 4=Over 10 times

14. IN THE LAST SIX MONTHS, WHAT IS THE MOST ALCOHOL YOU HAVE CONSUMED IN A SINGLE SITTING (AT ANY ONE TIME):

    1= Nothing, I have not had a drink in six months

    2= 1-4 drinks or 2-8 beers

    3= 5 drinks up to a pint of liquor or 8-15 beers

    4= Between a pint and a fifth of liquor or up to 24 beers

    5= Over a fifth of liquor or more than a case of beer

15. IN YOUR LIFETIME, WHAT IS THE MOST ALCOHOL YOU HAVE CONSUMED IN A SINGLE SITTING (AT ANY ONE TIME):

    1= Nothing, I have not had a drink in six months

    2= 1-4 drinks or 2-8 beers

    3= 5 drinks up to a pint of liquor or 8-15 beers

    4= Between a pint and a fifth of liquor or up to 24 beers

    5= Over a fifth of liquor or more than a case of beer

16. HOW MANY YEARS AGO DID YOU START TO DRINK:

    1= Never drank

    2= 1-3 years

    3= 4-8 years

    4= 9-15 years

    5= Over 15 years

17. ABOUT HOW MANY DAYS PER WEEK DO YOU DRINK (If you are now abstaining, answer for when you were drinking):

    1= Never drink

    2= Once per week or less

    3= 2-3 days per week

    4= 4-5 days per week

    5= 6-7 days per week

18. ABOUT HOW MUCH DO YOU DRINK WHEN YOU DRINK: (If you are now abstaining, answer for when you were drinking):

    1= Nothing, I never drink

    2= 1-3 drinks

    3= Between 4 drinks and a pint

    4= Between a pint and a fifth

    5= Over a fifth

19. ARE YOU CURRENTLY ABSTAINING FROM ALCOHOL:

    1= No, I am drinking as usual

    2= Yes, I have not had a drink for 1-14 days

    3= Yes, I have not had a drink for 2 weeks to one month

    4= Yes, I have not had a drink for 1-6 months

    5= Yes, I have not had a drink for over 6 months

20. ARE YOU CURRENTLY PARTICIPATING IN AN ALCOHOL TREATMENT PROGRAM:

    1= No

    2= Yes, outpatient alcohol treatment program (including AA)

    3= Yes, inpatient alcohol treatment program

21. IN THE PAST, HAVE YOU EVER BEEN IN AN ALCOHOL TREATMENT PROGRAM:

    1= No

    2= Yes, once

    3= 2-4 treatments

    4= 5-9 treatment programs

    5= 10 or more treatments

22. HAVE YOU EVER BEEN IN TROUBLE WITH THE LAW BECAUSE OF BEHAVIOR WHILE DRINKING? (Include Driving while under the influence of alcohol, Drunk and disorderly conduct, Resisting arrest, Etc.)

    1= No, never any legal problems

    2= Once

    3= 2-4 times

    4= 5-10 times

    5= Over 10 times

23. HAVE YOU EVER BEEN CONTINUOUSLY DRUNK FOR LONG PERIODS OF TIME (Like a binge of 4 or more days:)

    1= No, never

    2= Yes, once or twice 4= 7-15 times

    3= Yes, 3-6 times 5= Over 15 times

24. DOES ANYONE IN YOUR FAMILY DRINK "TOO MUCH" OR HAVE A PROBLEM WITH ALCOHOL:

    1= No 3= 2-3 families members

    2= Yes, one person 4= More than 3

25. HAS ANYONE IN YOUR FAMILY HAD JOB RELATED DIFFICULTIES BECAUSE OF ALCOHOL (arguments, separation, divorce, abuse, etc.):

    1= No 3= 2-3 families members

    2= Yes, one person 4= More than 3

26. HAS ANYONE IN YOUR FAMILY HAD RELATIONSHIP / FAMILY PROBLEMS BECAUSE OF ALCOHOL (argument, separation, divorce, abuse, etc.)

    1= No 3= 2-3 families members

    2= Yes, one person 4= More than 3

27. HAS ANYONE IN YOUR FAMILY HAD LEGAL PROBLEMS BECAUSE OF DRINKING (arrested, 502s, drunk and disorderly, fighting, spent night in jail):

    1= No 3= 2-3 families members

    2= Yes, one person 4= More than 3

28. HAS ANYONE IN YOUR FAMILY HAD HEALTH PROBLEMS BECAUSE OF DRINKING (liver problems, heart problems, diabetes complications, ulcers, etc.):

    1= No 3= 2-3 families members

    2= Yes, one person 4= More than 3

29. HAS A PROFESSIONAL EVER TOLD YOU THAT <u>YOU</u> HAVE A PROBLEM WITH ALCOHOL;

    1= No 2= Yes

30. HAS A PROFESSIONAL EVER TOLD A FAMILY MEMBER THAT HE / SHE HAD A PROBLEM WITH ALCOHOL:

    1= No 2=Yes

31. HAS ANYONE IN YOUR FAMILY BEEN TREATED IN AN ALCOHOL PROGRAM (detox, inpatient or outpatient program, AA, etc.)

    1= No 2= Yes

32. HOW WOULD YOU LABEL YOUR DRINKING PATTERN:

1= Nondrinker, abstinent

2= Infrequent/Occasional/Light social drinker

3= Moderate/Social drinker

4= Frequent/Heavy social drinking

5= Problem drinker/alcoholic/recovering alcoholic

APPENDIX G

DEMOGRAPHIC DATA SHEET (DDS)

1. SEX: 1= Male 2= Female

2. CURRENT MARITAL STATUS:

   1= Single
   2= Living with partner, unmarried
   3= Married
   4= Separated/Divorced
   5= Widowed

3. PARENTS' INCOME LAST YEAR:

   1= Under $9,000
   2= $9,000 - $14,000
   3= $14,000 - $20,000
   4= $20,000 - $35,000
   5= Over $35,000

4. YOUR INCOME LAST YEAR:

   1= Under $9,000
   2= $9,000 - $14,000
   3= $14,000 - $20,000
   4= $20,000 - $35,000
   5= Over $35,000

5. FATHER'S PRIMARY OCCUPATION:

1= Professional (Doctor, Lawyer, X-ray Technician)

2= Manager, Official, Farm Owner, Proprietor

3= Clerical worker, Realtor, Sales Representative

4= Foreman or Craftsman (tool and die maker, potter, cabinet maker)

5= Laborer, Housekeeper, Student or Other (disabled, voluntarily idle, incidental worker-less than 15 hours per week

6. MOTHER'S PRIMARY OCCUPATION:

1= Professional (Doctor, Lawyer, X-ray Technician)

2= Manager, Official, Farm Owner, Proprietor

3= Clerical worker, Realtor, Sales Representative

4= Foreman or Craftsman (tool and die maker, potter, cabinet maker)

5= Laborer, Housekeeper, Student or Other (disabled, voluntarily idle, incidental worker-less than 15 hours per week

7. YOUR PRIMARY OCCUPATION

1= Professional (Doctor, Lawyer, Xray Technician)

2= Manager, Official, Farm Owner, Proprietor

3= Clerical worker, Realtor, Sales Representative

4= Foreman or Craftsman (tool and die maker, potter, cabinet maker)

5= Laborer, Housekeeper, Student or Other (disabled, voluntarily idle, incidental worker-less than 15 hours per week

8. FATHER'S EDUCATION:

1= 0-11th grade

2= 12th grade, High school degree

3= 1-4 years college, college degree

4= Up to masters degree or post college technical degree

5= MD., Ph.D., J.D. or equivalent

9. MOTHER'S EDUCATION:

1= 0-11th grade

2= 12th grade, High school degree

3= 1-4 years college, college degree

4= Up to masters degree or post college technical degree

5= MD., Ph.D., J.D. or equivalent

10. YOUR EDUCATION

1= 0-11th grade

2= 12th grade, High school degree

3= 1-4 years college, college degree

4= Up to masters degree or post college technical degree

5= MD., Ph.D., J.D. or equivalent

11. WHAT DO YOU CONSIDER YOUR PRIMARY ETHNIC BACKGROUND:

1= Afroamerican / Black

2= Mexican / Mexican-American / Puerto Rican

3= Oriental

4= Caucasian / White

5= Other

12. WERE YOU AND YOUR PARENTS BORN AND RAISED IN THE UNITED STATES:

1= Yes 2= No

13. WHICH DO YOU CONSIDER YOUR PRIMARY RELIGION:

1= Babtist 4= Protestant

2= Catholic 5= Other

3= Jewish

(If none then leave this question blank)

14. ARE YOU CURRENTLY PRACTICING YOUR RELIGION:

1= yes, regularly attend services or participate in religious customs/ceremonies

2= yes, but not regularly

3= no, not at the present time

4= not appropriate

15. WHO ARE YOU CURRENTLY LIVING WITH:

1= Live alone

2= Live with family

3= Live with spouse or partner

4= Live with friends

5= Other

16. WHERE ARE YOU USUALLY LIVING:

1= No particular/regular place

2= Dorm, Rooming house

3= Apartment or trailer

4= House

5= Other (Half-way house, YMCA, etc.)

APPENDIX H

INFORMED CONSENT FORM

Project Title: The Relationship of Expectancies and Decision-Making to Alcohol and Drug Use

Interviewers and Experimenters: Daniel W. McNeil, Ph.D.
Steven L. Adams, M.S.
Alyssa Frank, M.S.
Michael R. Lewin
John E. Karis, M.Ed.

Procedures: This study is concerned with your attitudes and beliefs that relate to alcohol and drug use. By agreeing to participate, you will be asked to do the following things:

1. Sign this consent statement.
2. Complete one questionnaire pertaining to your expectancies about alcohol.
3. Answer a structured series of questions about your background and your use of alcohol.
4. At the end of the session, there will be a debriefing in which the purposes of this research will be discussed. If you are interested in

obtaining information and/or assistance with alcohol, drug, or mental health problems, the investigators will assist you in making arrangements.

Risks: The risks of participation are minimal. You may become tired in completing some of the questionnaires or interviews. You can choose at any point to revoke your permission for information about you to be used in the research aspects of this project.

Benefits: You will have a comprehensive assessment of your alcohol and drug use patterns and so may gain insight into yourself. The benefits to society include progress in the scientific understanding of expectancies, decision-making, and alcohol and drug use.

I understand that I can contact the investigator(s) at the address/telephone previously listed if I experience any positive or negative after-affects from participating in this study. I am also aware that I can contact the investigator(s) to request information about the outcome of the study.

I have been fully informed by the investigator(s) in this study. I am aware of what I am being asked to

do and of the risks and benefits in this study. I give permission for information about me to be used anonymously as part of this study.

Participant's Signature	Date
Witness	Date

VITA

Steven Lloyd Adams

Candidate for the Degree of

Doctor of Philosophy

Dissertation: ALCOHOL EXPECTANCIES AND SUBSTANCE ABUSE IN SOCIOECONOMICALLY DISADVANTAGED ADOLESCENTS AND YOUNG ADULTS

Major Field: Psychology

Biographical:

Personal Data: Born January 16, 1962, Great Bend, Kansas.

Education: Graduated Summa Cum Laude from Pratt Community College in May, 1982 with an Associate of Science Degree majoring in psychology; received Bachelor of Science Degree in psychology from Kansas State University in May 1984; received Master of Science Degree in clinical psychology from Oklahoma State University in July, 1986; completed requirements for the Doctor of Philosophy degree at Oklahoma State University in May, 1990

Professional Experience: Presently employed as an Associate Psychologist at the Madison County Mental Health Department, Wampsville, New York, since October, 1989; completed a Clinical Psychology Internship with a specialty in Geropsychology at Hutchings Psychiatric Center in Syracuse, New York, September, 1988 to August, 1989; worked as a Psychology Associate at the Family Mental Health Center in Tulsa, Oklahoma from August, 1987 to August, 1988; Psychology Associate at the Psychological Services Center at Oklahoma State University from August, 1985 to July, 1987; Psychology Intern in the mental health unit of Guthrie Job Corps in Guthrie, Oklahoma from August, 1986 to August, 1987;

Professional Experience (continued): Psychology Associate at the Marriage and Family Counseling Service at Oklahoma State University from August, 1986 to December, 1986 and from June, 1987 to August, 1987;Teaching Assistant, Department of Psychology, Oklahoma State University, August, 1985 to May, 1987; Teaching Apprentice, Department of Psychology, Kansas State University, August, 1984 to December, 1984; professional memberships include the Central New York Psychological Association, 1990; American Psychological Association, 1990; Oklahoma Psychological Association, 1984 to 1990; Southwestern Psychological Association, 1985 to 1990; Society of Psychologists in Addictive Behaviors, 1986 to 1990; President of Psychology Graduate Student Association, 1985 to 1987.