An Evaluation of Two Approaches to Drinking Risk Reduction with College Students: Cognitive-Behavioral Skills Training and Motivational Feedback

By

Curtis K. Greaves

Dissertation Submitted to the Faculty of the Virginia Polytechnic and State University in partial fulfillment of the requirements for the degree of

DOCTORAL OF PHILOSOPHY

IN

CLINICAL PSYCHOLOGY

APPROVED:

Robert S. Stephens, Chair

George A. Clum

Russell T. Jones

Ellie T. Sturgis

Richard A. Winett

February 29, 1996

Blacksburg, Virginia

Keywords: Alcohol, Harm Reduction, Self-efficacy, Prevention
AN EVALUATION OF TWO APPROACHES TO DRINKING RISK REDUCTION WITH COLLEGE STUDENTS: COGNITIVE-BEHAVIORAL SKILLS TRAINING AND MOTIVATIONAL FEEDBACK

By
Curtis K. Greaves
Robert S. Stephens, Chairperson
Psychology Department

(ABSTRACT)

The current study examined the relative effectiveness of motivational feedback compared to cognitive-behavioral skills training delivered in bibliotherapy format to college students. The effectiveness of matching alcohol abuse interventions with participant's stage of change was also explored. The study's design utilized an assessment only control group and collateral informants to strengthen the validity of the conclusions.

Participation in the cognitive-behavioral skills training and motivational feedback interventions did not lead to greater reductions in participants' alcohol use and alcohol related problems than assignment to an assessment only control group. No significant differences were found between these three groups on any of the drinking measures from pre-test to 1-month and from pre-test to the 2-month follow-up. Only time effects were observed on alcohol...
related problems and frequency of heavy alcohol use across the 3 experimental conditions.

Tentative explanations for the lack of support for the effectiveness of these interventions are discussed in the paper including sample size and statistical power, intervention compliance, and intervention fidelity. A number of changes which might enhance the effectiveness of these interventions are also discussed in the paper.

The study also found no significant Intervention X Stage of Change X Time interactions to support the effectiveness of matching intervention to participants’ stage of change. Tentative hypotheses for this finding are discussed in the paper including issues related to the measurement of stages of change.

Competing hypothesis regarding the relative and incremental utility of outcome and self-efficacy expectancies were also examined in the study. Pre-test efficacy expectancies consistently predicted a significant, proportion in participants’ frequency of alcohol use and moderate use at 1 and 2-month follow-ups beyond concurrent use. Outcome expectancies were unable to add to the prediction of drinking behavior beyond self-efficacy and concurrent drinking behavior. This pattern of results support Bandura’s (1986) view that efficacy expectancies subsume most of the predictive power of outcome
expectancies. Further, as predicted by Bandura, prior drinking behavior alone did not fully explain future use, rather students perceptions of efficacy also guided future use.
ACKNOWLEDGMENT

I like to first thank God for giving me the strength to persevere throughout my years at Virginia Tech. I would also like to extend much thanks to my mother, father, Godmother, brother and numerous other relatives who have stood by me and believed in me throughout the course of my life. Without them I feel that I would not have achieved as much as I have including receiving this degree. I give credit to Robert S. Stephens who was my chairperson on both my thesis and dissertation. He was very supportive, sympathetic, met with me whenever I needed assistance and kept me on track while I was at Virginia Tech. I would like to thank Randy, Greg, Susanna, and Joe for their support, too. In the time that I was at Virginia Tech I became good friends with each in a unique manner and hope to continue these friendships for years to come. Finally, I would like to wish all of those that I have mentioned the best in the future you all were part of making a dream I had come true.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1-18</td>
</tr>
<tr>
<td>Hypotheses</td>
<td>18-20</td>
</tr>
<tr>
<td>Participants</td>
<td>20-22</td>
</tr>
<tr>
<td>Design</td>
<td>22-23</td>
</tr>
<tr>
<td>Procedures</td>
<td>23-27</td>
</tr>
<tr>
<td>Motivation Feedback Condition Description</td>
<td>28-30</td>
</tr>
<tr>
<td>Cognitive-Behavioral Skills Condition Description</td>
<td>30-32</td>
</tr>
<tr>
<td>Measures Description</td>
<td>32-42</td>
</tr>
<tr>
<td>Results</td>
<td>42-62</td>
</tr>
<tr>
<td>Discussion</td>
<td>62-75</td>
</tr>
<tr>
<td>References</td>
<td>76-83</td>
</tr>
<tr>
<td>Consent Form</td>
<td></td>
</tr>
<tr>
<td>Appendix A</td>
<td></td>
</tr>
<tr>
<td>Timeline Follow-Back Technique</td>
<td></td>
</tr>
<tr>
<td>Appendix B</td>
<td></td>
</tr>
<tr>
<td>Young Adult Alcohol Problems Screening Test</td>
<td></td>
</tr>
<tr>
<td>Appendix C</td>
<td></td>
</tr>
<tr>
<td>Health and Demographics Questionnaire</td>
<td></td>
</tr>
<tr>
<td>Appendix D</td>
<td></td>
</tr>
<tr>
<td>Blood Alcohol Level Conversion Table</td>
<td></td>
</tr>
<tr>
<td>Appendix E</td>
<td></td>
</tr>
<tr>
<td>Manipulation Check Questionnaire</td>
<td></td>
</tr>
<tr>
<td>Appendix F</td>
<td></td>
</tr>
<tr>
<td>Motivational Feedback Report</td>
<td></td>
</tr>
<tr>
<td>Appendix G</td>
<td></td>
</tr>
<tr>
<td>Cognitive-Behavioral Skills Training Manual</td>
<td></td>
</tr>
<tr>
<td>Appendix H</td>
<td></td>
</tr>
<tr>
<td>Alcohol Use Disorders Indentification Test</td>
<td></td>
</tr>
<tr>
<td>Appendix I</td>
<td></td>
</tr>
<tr>
<td>Drug Use Questionnaire</td>
<td></td>
</tr>
<tr>
<td>Appendix J</td>
<td></td>
</tr>
<tr>
<td>The Alcohol Coping Efficacy Scale</td>
<td></td>
</tr>
<tr>
<td>Appendix K</td>
<td></td>
</tr>
</tbody>
</table>
Alcohol Coping Skills Assessment Instrument ... Appendix L
Situational Self-Efficacy Expectancy Measure... Appendix M
Outcome Expectancy Scale ......................... Appendix N
Stages of Changes 4 Questions (Categorical) ... Appendix O
Socrates (Stages of Change) (Continuous) .... Appendix P
Tables ..................................................... 196-210
List of Tables

Participants’ Stage of Change Across Conditions ... Table 1
Zero-order Correlations Participant and Collateral Reports of Participant Drinking Behaviors ........... Table 2 Means and Standard Deviations Drinking Behaviors and Problems Across Conditions .................. Table 3 Zero-order Correlations Pre-test Expectancies by Drinking......................................................... Table 4 Zero-order Correlations 1-month Expectancies by Drinking ..................................................... Table 5 Zero-order Correlations Outcome Expectancy by Self-efficacy .................................................. Table 6 Pre-test Expectancies Predictors of 1-month Moderate Use ..................................................... Table 7 Pre-test Expectancies Predictors of 1-month Heavy Use ......................................................... Table 8 Pre-test Expectancies Predictors of 2-month Moderate Use ..................................................... Table 9 Pre-test Expectancies Predictors of 2-month Heavy Use ........................................................... Table 10 Means and Standard Deviations for Socrates Subscales by Stages of Change Categories ................. Table 11 Zero-order Correlations Pre-test Stages of Change Subscales by Drinking ........................................... Table 12
Zero-order Correlations 1-month Stages of Change

Subscales by Drinking ........................................... Table 13

Pre-test Stages of Change Predictor of 1-month Drinking ........................................... Table 14

Pre-test Stages of Change Predictor of 2-month Drinking ........................................... Table 15
An Evaluation of Two Approaches to Drinking Risk Reduction with College Students: Cognitive-Behavioral Skills Training and Motivational Feedback

Most college students do not exhibit alcohol dependence (Baer, 1993), but many college students exhibit numerous alcohol related problems (Burrell, 1992; Hanson & Engs, 1986; Hughes & Dodder, 1984; O'Hare, 1990; State Council of Higher Education for Virginia, 1993; Werch & Gorman, 1988). For example, Gliksman (1988) found that in making the transition from high school to college, incoming students' alcohol related problems increased over their first seven months of their first academic year. Some problems included major and minor school difficulties, social and legal problems, and illnesses following alcohol consumption. Other researchers have reported similar problems such as vomiting after drinking, blackouts, drinking and driving, vandalism, missed classes, and decreased academic performance (Engs & Hanson, 1988; State Council of Higher Education for Virginia, 1993; Werch and Gorman, 1988). Furthermore, over 50% of students in several studies reported at least one type of negative consequence due to alcohol use (Burrell, 1992; Engs & Hanson, 1988; Hughes & Dodder, 1984; State Council of Higher Education for Virginia, 1993; Walfish, Wentz, Benzing, Brennan, & Champ,
Collectively, these studies suggest that a fairly large number of college students are consuming alcohol in a manner that is detrimental to their health and academic performance, thus warranting some form of early intervention. Given that few students exhibit alcohol dependence and that a large proportion of students report at least some problems associated with their alcohol use, an orientation that focuses on secondary prevention is most appropriate for college students. In a survey of 900 accredited 4 year colleges and universities, over 90% of these institutions had some form of alcohol abuse prevention program (Schneider & Porter-Shirley, 1989). However, very few of these programs have been systematically evaluated for their ability to impact on actual drinking behavior or related problems (Greaves, 1994).

Heavy drinking for some students may not be just a right of passage limited to their college years. Fillmore & Midanik (1984) indicated that of the young men who were categorized as heavy drinkers at the initial assessment 19% still met the criterion for heavy drinker at a 4 year follow-up. Donovan, Jessor, & Jessor (1983) reported that at a follow-up conducted at least 3 years post-college that 30% of the students originally categorized as problem drinkers still met the criterion.
A review of the literature suggests that most prevention efforts targeting college student drinking are educational in nature (Greaves, 1994). These prevention programs attempt to teach students "responsible drinking" by disseminating legal and pharmacological information regarding alcohol's physical and psychological effects (Berkowitz & Perkins 1987; Gonzalez, 1987). A major assumption of these programs is that increased awareness through general information will result in attitudinal changes and subsequent behavior change (Berkowitz & Perkins, 1987). Most of these programs are ineffective in reducing alcohol use or related problems (Greaves, 1994). Thus, there is a need to continue to identify effective prevention options to decrease college student alcohol abuse. Two intervention approaches which may be useful with the college student population are cognitive-behavioral coping skills training (Chaney, O'Leary, and Marlatt; 1978; Miller & Munoz, 1990) and motivational interviewing (Miller & Rollnick, 1991; Miller, 1989).

Programs that use the cognitive-behavioral coping skills training framework go by a number of titles including behavioral self-control training, alcohol skills training, skills training, and cognitive-behavioral mood management training. However, all of these programs have in common the central goal of helping client's identify situations that
may trigger heavy drinking episodes and learn coping strategies to deal with these situations effectively. In contrast, motivational interviewing is a system developed to increase client motivation to change (Miller, 1989). Motivational interviewing attempts to help a client become more aware of and personally responsible for his or her problems with alcohol, thereby, increasing the probability that a client takes actions needed to change an abusive drinking pattern. A central strategy in motivational interviewing that is used to attain this goal is the creation of a discrepancy between a person's current behavior and important personal behaviors. A discrepancy can be created by presenting college students with feedback on how their current alcohol patterns are related to various personal (e.g. blackouts, lower academic grades) and social risks (e.g. getting into fights with significant others) which are inconsistent with how they view themselves.

Both cognitive-behavioral skills training and motivational interviewing based interventions have been evaluated for their effectiveness in reducing problem drinking. In the clinical literature a large number of studies have been conducted which have evaluated cognitive-behavioral coping skills training programs (Chaney, O'Leary, & Marlatt, 1978; Miller, Taylor, & West, 1980; Sanchez-Craig, 1980; Jones, Kanfer, & Lanyon, 1982; Foy, Nunn, &
Rychtarik, 1984; Graber & Miller, 1988; Alden, 1988; Ito, Donovan, & Hall, 1988; Kadden, Getter, Cooney, & Litt, 1989; Monti, Abrams, Binkoff et al., 1990). Collectively, these studies support the utility of cognitive-behavioral skills training in reducing alcohol use and related problems in clinical settings.

Two studies have examined the effectiveness of cognitive-behavioral skills training in a secondary prevention context with college students (Baer, Kivalahan, Fromme & Marlatt, 1989; Kivalahan, Marlatt, Fromme, Coppel & Williams, 1990). Kivalahan, Marlatt, Fromme, et al. (1990) compared the effectiveness of an alcohol skills training program compared to a didactic alcohol information program and an assessment only control group. The results indicated a reduction from baseline to 12 month follow-up on drinks per occasion which was significantly greater in the skills training group compared to the assessment only. However, no significant differences were found between the skills training group and the alcohol information group on drinks per occasion at 12-month follow-up.

Baer, Kivlahan, Fromme, and Marlatt (1989) evaluated the utility of three different formats to the alcohol skills training program (Kivlahan, Marlatt, Fromme, Coppel, & Williams, 1989). The three different formats were a classroom format, correspondence format and professional
advice format. The results indicated that for participants who completed each format there were significant reductions in drinking from pre-test to follow-up on the drinking indices of drinks per week, hours above a .055 % mg. blood alcohol level per week, and peak blood alcohol level.

Evaluations of motivational interviewing techniques have been conducted in the context of the Drinkers Check-up (Miller, Sovereign, & Krege, 1988). The Drinker's Check-up attempts to motivate individuals to change their drinking behavior by creating a discrepancy between personal goals and current behavior. First, information is obtained from participants on their drinking patterns, problems associated with use, and risk factors for future problems (e.g. family history, tolerance levels). Next, this assessment information is used to give clients feedback on how their drinking patterns and problems compare to other individuals, as well as on their risk for future problems with their alcohol use. This information is presented to the clients in a non-judgemental manner and clients are left to determine if changes are needed in their drinking behavior.

Several studies have been conducted by Miller and his colleagues to evaluate the impact of personalized feedback on drinking behavior in the context of the Drinkers Check-up (Miller, Sovereign, & Krege, 1988; Miller, Benefield, & Tonigan, 1993; Bien, 1992; Brown & Miller, 1993). The first
evaluation of the Drinker's Check-up was conducted by Miller, Sovereign, and Krege (1988) they recruited 42 individuals from the general population through a local paper. They found that six weeks after the participants received the Drinker's Checkup their alcohol use decreased significantly, although modestly. Alcohol consumption decreased from 45 to 33 standard drinks per week (27% reduction), and peak blood alcohol level decreased from .164 mg % to .116 mg % (29%). Miller and his colleagues (Miller, Benefield, & Tonigan, 1993) investigated the utility of the Drinker's Checkup again with individuals recruited from the general population. Some of the participants were given the Drinker's Checkup while others were placed on a six week waiting list. The researchers found that at a six week follow-up participants who received the drinker's checkup reported significantly less weekly consumption, lower peak blood alcohol levels, and fewer drinking days than the control waiting list group (effect sizes of .54, .56, and .78, respectively). Additionally, two studies have been conducted to determine if motivational interviewing can enhance a client's motivation for change prior to entry into a more extensive treatment program. Both these studies found that at 3 month follow-up, those receiving the motivational interviewing reported significantly less drinking and more abstinent days than those who did not
receive motivational interviewing prior to more extensive treatment (Bien, 1992; Brown & Miller, 1993). Thus, these findings support the utility of the Drinker's Checkup as a motivational enhancer to more extensive treatments (Bien, Miller, & Tonnigan, 1993).

Two studies have been conducted with college students to evaluate the impact of personal feedback on drinking behaviors. Agnonistelli, Brown, and Miller (in press) examined the impact of personalized feedback about drinking patterns and risk for future problems on 26 students' drinking patterns. Participants were assigned randomly to receive feedback immediately or to wait 6 weeks. Feedback was mailed to students which included their weekly average number of standard drinks compared to other Americans, their peak estimated BAL, and their personal risk of alcohol problems as reflected in tolerance and family history of alcohol problems. The researchers found that participants who received the feedback reduced their alcohol use from pre-test to the 6 week follow-up. Between groups tests revealed a Group X Time interaction. Participants receiving feedback decreased their mean standard drinks per week by 7.9 drinks, whereas the control participants demonstrated no changes on this measure across time. Within groups tests indicated that the feedback group decreased their average weekly peak BALs significantly. However, the feedback group
had significantly higher pre-test scores on this measure than the control group, thus the decrease in average weekly BAL may have reflected regression to the mean rather than an effect of the intervention. The highest peak BAL remained elevated for both groups with no effect of time. More promising results have been reported by Baer (1993) at the University of Washington. Over the last two years researchers at the University of Washington have been testing the effectiveness of a secondary prevention program based on Miller's motivational interviewing principles (Miller & Rollnick, 1992). Participants in this study were recruited from the incoming Freshman class at the University of Washington. Participants selected were randomly assigned to receive a feedback and advice interview or no intervention. The feedback condition was similar to the interventions that have been previously used by Miller and his colleagues in their evaluation of the drinker's checkup (Miller, Sovereign, & Krege, 1988; Bien, 1992, Brown & Miller, 1993; Miller, Benefield, & Tonigan, 1993). In the University of Washington's feedback group (Baer, 1993) students were provided with information about their drinking rates and norms, and risk factors associated with drinking. Preliminary results indicate that the college students exposed to the feedback interview had decreased their drinking significantly more from Fall to Spring semester
than their peers in the assessment only condition. These results have been found on the drinking indices of frequency of use, average quantity, and peak quantity. Thus, these finding further support the utility of providing students with feedback to motivate them to change their drinking patterns. Although cognitive-behavioral skills training and motivational feedback interventions have both been found to be effective in reducing problem drinking among college students Miller and Rollnick (1991) have indicated that these two approaches do differ conceptually. Thus, across these two approaches changes in students' drinking may occur because of different processes. Cognitive-behavioral skills training assumes that all students are motivated to change in contrast motivational interviewing does not. The stages of change model (Prochaska, DiClemente, & Norcross, 1992) is useful in understanding how these two prevention approaches operate differently in changing drinking behavior. In stages of change terms (Prochaska, DiClemente, & Norcross, 1992) cognitive-behavioral skills training approaches assume that college students are in the "determination stage" (note this stage has also been called the "decision stage" and "preparation stage" in other writings by Prochaska and DiClemente). In the determination stage individuals have decided to take steps to change their drinking behavior. They appear committed to action. Thus, providing college
students with coping skills will lead to changes in drinking behavior because these students are sufficiently motivated to change their behavior but only lack the skills needed to drink moderately. Motivational interviewing (Miller, 1983; Miller and Rollnick, 1991) assumes that many college students will be in the "contemplation stage" and will not be committed to making a change in their drinking. They are unsure if a change is really necessary in their behavior. The Drinker's Check-up, by providing feedback on students' drinking patterns and future risks, would function to move students from contemplation stages into the determination and action stages. According to the motivational interviewing framework once college students attain sufficient motivation they will look for resources in their environment to change their drinking patterns (Miller & Rollnick, 1991). Thus, each of these prevention strategies should have differential effects on college students who are entering prevention programs at different stages of change (Prochaska, DiClemente, & Norcross, 1992). The cognitive-behavioral skills training approach should be more effective with college students entering prevention programs in the determination and action stages. On the other hand, motivational interviewing should be more helpful for college students who are in the precontemplation and contemplation stages.
Bibliotherapy is one method to disseminate interventions such as cognitive-behavioral skills training and the Drinker's Check-up in a manner which is cost effective and appealing to college students. In the area of alcohol abuse treatment a number of studies have been conducted which have evaluated the effectiveness of alcohol abuse interventions in bibliotherapy format. Most of these studies have assessed the effectiveness of cognitive-behavioral skills training in self-help formats. Cumulatively, these studies support the utility of cognitive-behavioral skills training in bibliotherapy format in reducing alcohol use and related problems in problems drinkers (Miller and Taylor, 1980; Miller, Taylor, and West, 1980; Miller, Gribskov, & Mortell, 1981; Heather, Whitton, & Robertson, 1986; Heather, Robertson, MacPherson, Allsop, & Fulton, 1987; Heather, Kissoon-Singh, & Fenton, 1990). Cognitive-behavioral skills training in bibliotherapy format has fared as well as cognitive-behavioral treatment with therapist contact and other more extensive treatments in reducing alcohol use and alcohol related problems (Miller & Taylor, 1980; Miller, Taylor, & West, 1980; Miller, Gribskov, & Mortell, 1981; Skutle & Berg, 1987). Similarly, cognitive-behavioral skills training in bibliotherapy format has been shown to be as effective in reducing college students alcohol use as cognitive-behavioral skills training
presented in a classroom format and in a brief consultation format with a therapist (Baer, Kivlahan, Fromme, et al. 1989). Collectively, these findings suggest that the content of cognitive-behavioral skills training may be delivered effectively in bibliotherapy format.

The closest approximation of an evaluation of motivational interviewing in bibliotherapy has come in the form of one study conducted by Agostinelli, Brown & Miller (in press). As indicated earlier they provided college students with personalized feedback on their drinking habits and found subsequent decrease in alcohol use as a function of this feedback. This finding suggests that motivational interviewing techniques may be effective in bibliotherapy format.

The use of cognitive-behavioral skills training and interventions based on the Drinker's Check-up in bibliotherapy format may be more appealing to college students than other programs. There are several reasons why these programs and this format may be attractive to heavy drinking college students. First, these two program focus on harm reduction rather than abstinence. The goal of reducing ones drinking may be more acceptable to most students who may not consider their drinking patterns pathological enough to accept a goal of abstinence in the college drinking environment (Baer, 1993). Second, these
programs avoid labeling students as alcoholics or problem drinkers. They focus on helping individuals learn more about their own drinking and accept responsibility for their drinking patterns (Baer, 1993; Miller and Rollnick, 1991). Third, students may be more receptive to a self-help manual format where they do not have to directly discuss the problems they are having with alcohol use with another person, thus further reducing the stigma associated with obtaining treatment. Finally, in the past alcohol abuse prevention programs for college students have typically extended over weeks. These programs probably attract students who are very committed to changing their drinking patterns (Berkowitz, 1989). Students who are ambivalent about their drinking behavior would probably not commit themselves to attending these extensive programs. The Drinker's Check-up and cognitive-behavioral skills training in self-help format can provide students with important information about their drinking in a brief time limited format which may be appealing to many students. Thus, the aforementioned characteristics of the cognitive-behavioral skills training and the Drinker's Check-up in bibliotherapy format may increase the participation rates of college students in secondary prevention programming.

A number of hypotheses about the effectiveness of the cognitive-behavioral skills training and the drinker's check
up are suggested by Bandura's social cognitive theory (1986). The social cognitive perspective suggests that students who are taught coping skills to avoid drinking heavily should feel more confident or efficacious in their abilities to control their drinking than students who are simply given feedback about their drinking patterns and possible outcomes related to their alcohol use. Further, with enhanced self-efficacy the actual use of coping responses learned through the intervention should increase and subsequently, heavy drinking should decrease (Bandura, 1977, 1986). In general, Bandura's social cognitive theory hypothesizes that self-efficacy should be able to predict drinking patterns for college students after they are exposed to a prevention intervention. Furthermore, in regards to the predictive utility of self-efficacy Bandura's conceptualization proposes that self-efficacy to avoid heavy alcohol use should be a better predictor of behavior than the types of outcomes that student's envision occurring if they change their behavior. People's beliefs about outcomes following behavior change are hypothesized to be closely linked to their perceived ability to perform a behavior. Thus, if college students perceive themselves as lacking the skills to drink in moderation they will envision negative outcomes. Conversely, if they perceive themselves as having adequate skills they will envision positive outcomes
(Bandura, 1986). Alternatively, other theorists such as Eastman & Marzillier (1984) believe that people do estimate the likelihood of various outcomes independent of their self-efficacy appraisals. Thus, they hypothesize that outcome expectancies add to the prediction of behavior beyond self-efficacy expectancies.

There is little research examining the predictive utility of self-efficacy in regard to college student drinking. However, one study examined the relationship between self-efficacy and outcomes after college students were exposed to a cognitive-behavioral skills training program (Fromme, Kivlahan, and Marlatt, 1986; Kivlahan, Marlatt, Fromme et al., 1990). These researchers found no significant differences in self-efficacy expectancies across time between college students exposed to cognitive-behavioral skills training and those who were in an assessment only group. Thus, there was no support found for Bandura's contention that helping a person attain skills would increase their self-efficacy and subsequently lead to behavior change (Bandura, 1977). A potential explanation for their findings was the lack of content validity of the self-efficacy measure used in their study. The self-efficacy measure was developed solely with a clinical sample. Thus, some of the situations that the scale tapped, such as avoiding drinking heavily when feeling urges,
cravings, and negative physical sensations, may be atypical to most college drinkers. The inclusion of these items on the scale may have lead to overconfidence by students in these situations, and possibly ceiling effects across the scale on the measure. In fact, the researchers indicated that students ability to avoid drinking too much in social situations were considerably lower than when experiencing urges or negative emotional states (Fromme, Kivlahan, & Marlatt, 1986). Similarly, Carey (1993) found that college students were more likely to drink heavy in social situations where they were feeling pressured to drink and during pleasant times with others, rather than in situations where they had negative emotions, cravings, or urges. This finding further suggests that college students heavy drinking may be a circumscribed behavior occurring primarily in social situations. Thus, in the future in order to increase the content validity of self-efficacy measures used in the college population it may be more important to assess college's students abilities to avoid drinking heavily in social situations. Further, operationalizing heavy drinking and immoderate drinking in terms of blood alcohol levels may also increase the predictive validity of self-efficacy measures with college students since traditionally self-efficacy measures in the alcohol field have simply asked
subjects to rate their confidence to avoid drinking "heavily" without giving them an objective target goal.

The current study was designed to evaluate the effectiveness of cognitive-behavioral skills training and a motivational feedback intervention delivered in bibliotherapy format to college students on measures of alcohol consumption and related problems. Both these approaches were compared to an assessment only control group. The motivational feedback intervention was based on the Drinker's Check-up (Agostinelli, Brown, & Miller, in press), whereas the cognitive-behavioral skills training intervention was adapted from the work of Baer and his colleagues (Baer, Kivlahan, Marlatt, Fromme et al., 1991). Furthermore, the study was constructed to test a number of theoretical relationships between pre-test characteristics (e.g. stage of change) and outcomes in the respective prevention conditions. The following hypotheses were tested in the study:

1) Participants in the cognitive-behavioral skills training and motivational feedback interventions will decrease their alcohol use and alcohol related problems significantly more from pre-test to 1-month follow-up and from pre-test to 2-month follow-up than participants in the control group. However, in the case of moderate alcohol use it would be
predicted that participants in the active conditions would demonstrate significantly greater increases on this measure as compared to the control group.

2) Participants in later stages of change at pre-test who were assigned to the cognitive-behavioral skills training intervention will decrease their alcohol use and related problems more than participants who are in later stages of change at pre-test and exposed to the motivational feedback intervention. Conversely, participants in earlier stages of change at pre-test who were assigned to the motivational feedback intervention will decrease their alcohol use and related problems more than participants in earlier stages of change in the cognitive-behavioral skills training intervention.

3) Participants in the cognitive-behavioral skills training intervention will increase their use of coping strategies to control their drinking and self-efficacy for drinking moderately significantly more from pre-test to the 1-month and from pre-test to the 2-month follow-up than participants in the motivational feedback intervention and assessment only control group.
4) Self-efficacy at pre-test and 1-month follow-up will be a significant predictor of drinking behavior at the 2-month follow-up beyond the effects of concurrently assessed drinking behavior and outcome expectancies. Based on Bandura's (1986) conceptualization, outcome expectancies will not add to the prediction of drinking beyond efficacy expectancies. Alternatively, Eastman & Marzillier (1984) propose that outcome expectancies related to drinking in moderation at pre-test and 1-month follow-up should be a unique predictor of drinking behavior at 2-month follow-up beyond current drinking behavior and self-efficacy.

Method

Participants

Participants were 100 college students recruited at Virginia Polytechnic and State University by flyers, class announcements and through the introductory psychology pool. The sample was composed of 51% females. The mean age of the sample was 19.6 (SD = 1.19). Racial composition of the sample was 86% Caucasian, 4% Asian, 3% African-American, 2% Hispanic and 5% classified themselves as other. Twenty-two percent of the participants were affiliated with the Greek system at Virginia Polytechnic and State University.

Initially 142 participants completed the screening session. Participants who exhibited at least six alcohol
related problems over the previous two months or indicated that they reached or exceeded a blood alcohol level (BAL) of .08 % mg. at least three times over the last month were eligible to participate in the study. This BAL was chosen because individuals are defined as being under the influence of alcohol when their BAL is .08 % mg or higher in the state of Virginia. Further, attaining a BAL of .08 % mg or higher places a person at an increased risk for a variety of negative consequences (Miller & Munoz, 1990). In regards to alcohol related problems, reports of 6 or more negative consequences suggests that alcohol consumption is having a negative impact on a student's life which would warrant concern and suggest the need for intervention. A total of 108 students met this eligibility criteria.

Participants who reported liver disease, stomach ulcers, heart disease, or other illness that may be made worse by drinking were excluded from the study (n = 1). Women who were pregnant were not allowed to participate in the study as well (n = 0). Further, students who indicated that they were taking tranquilizers, sedatives, sleeping pills, antidepressants, or any other drug or medication that is dangerous when combined with alcohol were also ineligible for the study (n = 1).

Of the 106 eligible students 100 agreed to participate in the study and completed an additional pre-test assessment
session. Participants were then randomly assigned across three intervention conditions. At that point 1 participant assigned to the motivational feedback condition dropped out of the study before receiving the intervention. Participants were distributed across the 3 intervention conditions such that in the bibliotherapy cognitive-behavioral skills training intervention, bibliotherapy motivational feedback intervention, and the assessment only waiting list group there were 34, 34, and 31 participants, respectively. The 1 and 2-month follow-up assessment sessions were completed by 96 and 91 participants, respectively.

**Design**

The design was a 3 (intervention: cognitive-behavioral skills training versus motivational feedback versus assessment only control condition) X 3 (time: pretest versus 1 month follow-up versus 2 month follow-up) X 2 (stages of Change: contemplation versus determination) mixed-model factorial design. For the purpose of the current study the precontemplation and contemplation stages were collapsed and defined as the contemplation stage. Also, the determination and action stages were collapsed and defined as the determination stage. Intervention condition and stages of change were between participant factors. Time was a within participants factor. Participants (see Table 1 for sample
size in each condition) were blocked on stages of change (contemplation versus determination) and then randomly assigned to the 3 intervention conditions (cognitive-behavioral versus motivational feedback versus assessment only control condition).

**Procedures**

In order to remove the stigma associated with alcohol abuse, students were recruited through announcements that indicated "if you wanted to learn more about or change your drinking you" can receive free materials related to these topics through a research project being conducted by the Psychology Department. It was emphasized that participating in the study would not lead to a label or diagnosis. They were also told that they would be paid a total of $10 if they completed the pre-test, 1 and 2-month follow-up assessment sessions in the study.

Participants completed the screening session in small groups and individually. Upon arriving, participants were given an informed consent form. The contents of the consent form were reviewed orally with the participants by the experimenter. Included in the consent form (see Appendix A) was information informing participants that they would be required to give the name of a person who could verify their drinking at the 1 and 2-month follow-ups. Further, participants were asked to give the experimenter a phone
number where they could be contacted and told if they were eligible to participate in the study. Participants were asked to sign the consent form and a duplicate copy of the consent form was offered to the participants. Next, participants' recent alcohol use was assessed with the timeline follow-back technique (Sobell, Sobell, Klajner, Pavan, and Basian, 1986). The timeline follow-back technique (see Appendix B) presented participants with a calendar and asked them to provide retrospective estimates of their drinking over a 30 day period including the number of drinks they consumed on each day and time period over which the drinks were consumed. In addition, participants completed the Young Adult Alcohol Problems Screening Test (see Appendix C; Hurlbut and Sher, 1992) which assessed their recent alcohol related problems, and several questions assessing general health and demographics (see Appendix D).

At the pre-test session participants were given a definition of moderate drinking which helped orient them to several questionnaires related to moderate alcohol consumption. A BAL level of .05% mg or below was used as an operational definition of moderate drinking. Using a BAL conversion table (see Appendix E), participants were instructed on how to determine the number of standard drinks that they could consume over a 4 hour period so as to maintain a BAL of .05 % mg or below. A BAL of .05% or below
was chosen because it has been previously identified by researchers (Baer, Kivlahan, Marlatt, Fromme, et al., 1991) as an appropriate target goal for college students to reduce risks associated with alcohol use. Participants inserted these values into the blanks on the dependent measures of outcome expectancies, coping-efficacy, and self-efficacy. The use of expectancy measures conceptualized on blood alcohol levels further standardized these measures across participants. The participants also completed items assessing family history of alcohol related problems, and questionnaires assessing use of coping strategies to avoid drinking heavily, stages of change, and alcohol related problems.

After completing these questionnaires, they were told that they would be contacted to pick up their materials over the next week. However, they were also told that some participants would be assigned to a waiting list group and these individuals would receive their materials in approximately two months. Within one week after the pre-test session participants assigned to the two active interventions were invited in to pick up their self-help materials. At that time the experimenter gave each participant a brief introduction to their self-help materials and indicated that they would be asked on a voluntary basis to submit summary sheets about these
materials at the 1-month follow-up. They were also scheduled for their 1-month follow-ups sessions and given an index card with the date, time, and location of their 1-month follow-up session. This procedure was also used to remind participants about their 2-month follow-up. The 1-month follow-up was conducted with separate assessment sessions for each of the three experimental conditions to decrease the likelihood of contamination across the conditions. Participants were also told that they would be contacted by phone to be reminded of the date of their 1 and 2-month follow-ups. It was emphasized throughout the study that in no way was any monetary incentive linked to them reducing their alcohol use or related problems. Rather the incentive payment was only contingent on them completing the three assessment sessions.

At the 1-month follow-up session participants were assessed on their recent alcohol use using the timeline follow-back technique. They also completed measures of alcohol related problems, stages of change, self-efficacy, coping-efficacy, outcome expectancy, and use of coping strategies to avoid drinking heavily. Participants in the motivational feedback and cognitive-behavioral condition also completed a manipulation check questionnaire (see Appendix F) which assessed if they read their materials and their perceptions of the nonspecific qualities of the
reading materials such as clarity and interest. Further, participants in the cognitive-behavioral skills training condition turned in summary sheets which assessed the key points of the six sections of their skills training manual. Similarly, participants in the motivational feedback condition turned in summary sheets that asked them questions about their personalized feedback report. Participants who did not turn these sheets in at that time were told that they could still submit them at a designated drop off point within the next week.

At the 2-month follow-up participants were assessed on their alcohol use over the last month using the timeline follow-back technique, alcohol related problems, and recent use of coping behaviors to avoid drinking heavily. Participants who completed the 1 and 2-month follow-up sessions were paid $5 at the completion of each follow-up session, thus, they could receive a total of $10 for completing both sessions. They also signed a form indicating that they received payment for completing the 1 and 2-month follow-up sessions. Student athletes on scholarship were ineligible to receive payment for their participation. Thus, participants were also given the option to receive extra class credit for completing the follow-up sessions.
Motivational feedback condition

The motivational feedback intervention (see Appendix G) was based on principles of motivational interviewing (Miller & Rollnick, 1991) and was adapted from the Drinker's Check Up (Miller, Soveriegn, & Kregge, 1988). The goal of this intervention was to establish a discrepancy between how students perceived themselves and their actual behavior (e.g. drinking patterns). Each student was provided feedback on her or his current drinking behavior and risks for alcohol related problems as compared to others in a nine page report. This feedback is thought to motivate a person to action in relation to modifying drinking behavior so that the person's drinking behavior is consistent with important life goals. In Prochaska and Diclemente (1992) terms, it should facilitate a movement from the "contemplation stage" into the "determination stage" in regards to modifying drinking behavior.

Based on pre-test assessment data, participants in the motivational feedback condition were given personalized information regarding their own alcohol use patterns, risks associated with use, and the severity of the negative consequences from their drinking this information was provided in a 9 page report. First, each participant was given information on her or his weekly average number of standard drinks based on self-reports of the prior 30 days.
The personal score of each participant was compared with the U.S. population norms according to gender, by converting the student's own level into a percentile score. The student's computer-estimated peak BAL over the previous 30 days as well as weekly Peak BAL were also provided. Next, feedback on the student's level of personal risk of alcohol problems, as reflected in tolerance (based on peak BAL), other drug use, and family history (from their self-report of problems among blood relatives) was provided. Each participant was also given feedback to reflect the overall severity of her or his negative consequences from drinking. Finally, each participant was given a list of self-reported negative consequences in order for the participant to understand the specific areas (i.e. academic, health, legal) in which alcohol was impacting negatively in his or her life. The feedback related to negative consequences was generated from the Alcohol Use Disorder Identification Test (AUDIT; Babor & Grant, 1989) which assesses recent problems, and the Young Adult Alcohol Problem Screening Test (YAAPST; Hurlburt & Sher, 1992) which assesses a host of negative consequences including those that are thought to occur at a high rate among college students. At the end of the feedback report there were summary sheets which asked participants questions about the main points of their feedback reports. Participants were asked to turn these sheets in to the
experimenter at the 1-month follow-up. These sheets served as a check on whether participants in fact read the self-help materials.

**Cognitive-behavioral skills training condition**

The cognitive-behavioral skills training intervention (see Appendix H) was adapted from the Alcohol Skills Training Manual (Baer, Kivlahan, Marlatt, Fromme, et al., 1991). The intervention's goal was to facilitate the development of self-control, responsible decision making, and coping skills (Kivlahan, Marlatt, et al. 1990). The cognitive-behavioral skills training intervention was packaged in a self-help manual format which was thirty-five pages in length. The manual consists of six sections focusing on the following content areas: (1) training in BAL estimation and information related to alcohol effects at different BALs; (2) setting goals and limits when drinking; (3) identification of situational components of heavy drinking; (4) moderation strategies to moderate drinking as applied to celebrations and other social situations; (5) assertiveness training and drink refusal skills; (6) and changing moods without drinking including relaxation training. Each of these sections also contained a suggested exercise to help the students apply the major theme of the section to their own drinking experiences. Further, at the end of each section there was a summary sheet which asked
participants questions on the main points of the section. Participants were asked to turn these sheets into the experimenter at the 1-month follow-up. A number of themes covered in the Alcohol Skills Training manual (Baer, Kivlahan, Marlatt, Fromme, et al., 1991) were intentionally left out of the cognitive-behavioral skills training manual in the current study. These themes included short and long term effects of drinking, beliefs about alcohol effects, and relapse prevention issues. These themes were left out for two reasons. First, in a previous evaluation of the alcohol skills training manual (Baer, Kivlahan, Fromme, & Marlatt, 1989) it was found that participants had difficulty completing the manual which consisted of more than 100 pages. Thus, one goal of the proposed study was to create a brief version of cognitive-behavioral skills training that would be attractive to college students and hopefully increase participants' completion rates. Second, several of the themes were not retained in the manual to prevent contamination of the two active intervention conditions. A central goal of the motivation feedback condition is to create a discrepancy between students' current drinking behavior and goals of their lives. It was thought that having participants in the cognitive-behavioral skills training condition read about the outcomes related to long and short-term alcohol use might serve to create a
discrepancy between their current drinking behavior and important goals in their life (e.g. health). Thus, for these reasons the cognitive-behavioral skills training was shortened to consist of 33 pages.

Measures

Timeline Follow-back Technique. The timeline follow-back technique was used to assess recent drinking at pre-test, and 1 and 2-month follow-up assessment sessions. Drinking measures created by the timeline follow-back technique served as primary dependent variables in the proposed study. The timeline follow-back technique (Sobell, Sobell, Klajner, Pavan, & Basian, 1986) presents participants with a calendar and asks them to provide retrospective estimates of their drinking over a specified period. In this study a 30 day period was assessed at each assessment point. Participants were also asked to recall the number of hours over which they consumed the drinks on each drinking occasion in order to compute BAL. Participants were prompted to use memory aides to help them recall their drinking, including listing key dates on the calendar (e.g. dates of parties, when bands played, and test dates), using appointment books to recall drinking occasions, and converting quantities of various beverages to a common alcohol unit using a standard drink conversion table. The timeline follow-back technique has been shown to
demonstrate high test-retest reliability across various populations including college students (Sobell & Sobell, 1991). Furthermore, Sobell and Sobell (1991) indicated that drinking variables derived from the timeline follow-back technique have been shown to be significantly positively correlated with two established measures of alcohol related problems (Alcohol Dependence Scale: Skinner & Allen, 1982; Short Michigan Alcohol Screening Test: Selzer, Vinokur, & Van Rooijen, 1975). The flexibility of the timeline follow-back technique allowed for the construction of the following drinking indices which served as primary dependent variables in this study: frequency of moderate alcohol use defined as the number of drinking occasions at or below a BAL of .05% mg, and frequency of heavy alcohol use defined as the number of drinking occasions above at or above a BAL of .08% mg.

Young Adult Alcohol Problem Screening Test. This instrument is a unidimensional scale that consists of 27 items that assess the frequency of traditional problems associated with alcohol abuse and problems that are thought to occur at higher levels in the college population (e.g. missing classes at school, receiving a lower grade on an exam or in a class). This measure served as a dependent variable in the proposed study and was also a source of feedback in the motivational feedback condition. At pre-test the measure was used to assess problems over a two
month period and one month periods at each of the two follow-ups. A total scale score was attained by summing items on the scale. Thus, participants total scale scores could range from 0-162. Higher scores on the scale reflected greater recent alcohol related problems. Pre-test total scale scores were divided by two in order to make them comparable with the two follow-up total scale scores. The Young Adult Alcohol Problem Screening Test (YAAPST: Hurlbut & Sher, 1992) has demonstrated strong internal consistency (alpha .83) and high test-retest reliability (correlation .73). Further, the YAAPST has been shown to explain 42% of the variance in Diagnostic Interview Schedule DSM-III alcohol abuse and dependence (Hurlbut & Sher, 1992) suggesting that it has high criterion validity. In the current study alpha coefficients ranged from .88 -.91 at the various assessment points.

Alcohol Use Disorders Identification Test. This instrument was designed to identify persons who are at risk of developing problems with alcohol (see Appendix I). This measure was used to provide participants in the motivational feedback condition with feedback on recent alcohol related problems (alpha = .82). The Alcohol Use Disorders Identification Test (AUDIT) consists of items that focus on the preliminary signs of harmful, hazardous drinking and identifies mild dependence symptoms (Babor, & Grant, 1989).
These researchers have defined harmful alcohol use as drinking which has already caused alcohol problems. Hazardous alcohol use is defined as a drinking pattern that carries with it a high risk of future impairment to physical or mental health but has not lead to either of these outcomes. The AUDIT consists of 10 items, with 3 questions assessing amount and frequency of drinking, 3 questions about alcohol dependence symptoms, and 4 items that deal with personal and social problems related to alcohol abuse. For each item participants have a choice of 4 responses weighted on a scale of 0 to 4, thus, the highest possible score on the scale is 40. Higher scores on the scale reflect greater current harmful alcohol use and future risk for alcohol related problems. Scores 0-7 are defined as a low, 8-15 medium, 16-25 high, and 26-40 very high.

**Collateral Respondent Interview.** The Collateral Respondent Interview (Marlatt & Baer, 1994) was constructed to obtain collateral reports of alcohol use behaviors. The questionnaire is constructed to have collateral informants report participants use of alcohol, alcohol related problems, relationship to the participant, degree of contact with participant, and confidence in his or her reports of the participant's drinking behaviors.

**Drug Use Questionnaire.** The Drug Use Questionnaire (DUQ) was constructed to assess lifetime use of various
drugs that have a high dependency potential including cocaine, crack, heroin, methadone, and opium (see Appendix J). Further, the instrument assesses frequent use of marijuana, hash, amphetamines, stimulants, diet pills, tranquilizers, and barbiturates. In the motivational feedback condition the instrument is used to provide participants with feedback on their risk for problems based on their other drug use. The rationale is that frequent use of other drugs or any use of drugs with higher dependence potential is related to greater risk of serious consequences and complications (Miller, Zweben, Diclemente, & Rychtarik, 1992).

**Alcohol Coping-Efficacy Scale.** The Alcohol Coping Efficacy Scale (ACES; Greaves, Stephens, & Curtin, 1992) consists of 21 items corresponding to different behavioral skills for avoiding excessive alcohol consumption (e.g. refusing unwanted drinks, keeping track of the number of drinks consumed). The ACES (see Appendix K) served as a dependent measure in the study and also as predictor of drinking behavior at follow-up. The coping strategies were a representative subset of those previously identified by Werch and colleagues (1986, 1988) as strategies used by college students to limit their drinking. Participants indicate on a scale ranging from 0 to 100 their perceived ability in using the coping strategies to avoid drinking the
number of drinks that would give them a BAL of above .05% mg. Higher scores on this scale reflect greater confidence in their ability to use these specific strategies in order to avoid drinking heavily. The total scale score is computed by averaging participant’s scores for each individual item on the scale. In this study the alcohol coping-efficacy scale demonstrated strong internal reliability with alphas ranging from .92 to .94.

**Alcohol Coping Skills Assessment Measure.** This measure served as a dependent variable in the proposed study. The Coping Skills Assessment Measure (see Appendix L) was adapted from the Student Substance Use Survey (Werch & Gorman, 1986). One section of this questionnaire assesses students' use of 37 behavioral self-control strategies to deliberately limit drinking. Werch and Gorman (1986) found through factor analysis that these self-control strategies fell into seven factors when applied to college students. The seven factors based on their content were defined as rate control, self-reinforcement and punishment, alternatives, avoidance, limiting driving and cash, controlling food and time, and awareness. However, an examination of the eigenvalues associated with this factor analysis (Werch & Gorman, 1986) suggested that the use of these coping responses represent a unidimensional continuum in the college population. Most of the variability in
college students coping skills related to limiting their drinking could be explained by 1 factor. Thus, for the purpose of the current study 21 items representative of the dimensions proposed by Werch & Gormon (1986) and corresponding to the strategies assessed on the ACES were retained. For each item participants are asked how often they used the coping strategy to limit their drinking over the last two months. Participants respond to each item on a five-point likert scale where 0 indicated that the participant never used the strategy and 5 indicated that the strategy was used very often. In the current study alpha coefficients ranged from .84 to .95 across the various assessment points.

Situational Self-Efficacy Expectancy Measure. The Situational Self-Efficacy measure (see Appendix M) is based on a modified version of the Situational Confidence Questionnaire which was developed through factor analysis in a clinical population by Annis & Graham (SCQ, Annis & Graham, 1988). This measure served as a dependent variable in the proposed study and also as a predictor of drinking behavior at follow-up. The scale was constructed to assess an individual's perceived ability to avoid drinking the number of drinks that would give them a BAL of above .05% mg. heavily in various situations. A number of items were added to the SCQ which tapped into situations that are
frequently encountered by college students. Further, a factor analysis with data collected from a sample of college students yielded a two factor solution with items from the original SCQ (Greaves, Stephens, Curtin, 1992). Two subscales were created, one subscale (alpha = .96 to .97) assessed self-efficacy to avoid drinking heavily in positive situations (e.g. if I wanted to celebrate with a friend) and when feeling positive emotional states (e.g. if I felt confident and relaxed). The other subscale (alpha = .91) assessed this ability in negative situations (e.g. if I had an argument with a friend) and when feeling negative emotional states (e.g. if I were angry at the way things had turned out).

Outcome Expectancy Measure. The outcome expectancy measure (OEM; see Appendix N) was adapted from the Outcome Expectancy Scale (Solomon & Annis, 1990) which assesses how strongly an individual expects certain consequences to happen to him or her if he or she refrains from drinking heavily. The OEM served as a dependent variable and predictor of drinking outcome at follow-up. Several items related to outcomes which are specific to college students were added to the original scale to make it more applicable to college students (e.g. I would have fewer conversations when I am in social situations, I would do better in school). On a likert scale ranging from 1-5 where 1 is
equivalent to strongly disagree and 5 is equivalent to strongly agree, participants rate the likelihood that certain events would occur if they refrained from drinking the number of drinks that would give them a BAL of above .05% mg. Factor analysis from a pilot study with college students suggested two subscales that were consistent with the factor structure found in a clinical sample by Solomon and Annis (1990). One subscale titled benefits (alpha .90 -.92) assessed how strongly a person expected positive outcomes to happen if she or he refrained from drinking above moderate levels (e.g. I would feel better about myself, I would have more energy to do things). The second subscale titled costs assessed how strongly a person expected negative outcomes (alpha = .90 -.91) to happen if she or he refrained from drinking above moderate levels. For each of these subscales, scores were computed for participants by summing items on the specific scale. This yielded indices of each participant's beliefs related to the outcomes that would occur if he or she drank moderately. Higher scores on these subscales reflected stronger beliefs that specific outcomes would occur if they refrained from drinking above moderate levels.

Stages of Change. Participants were asked a series of 4 questions that would place them into 4 mutually exclusive categories reflecting their current stage of change (see
Appendix 0). This measure was adapted from Prochaska & DiClemente (1992) who have applied this categorization process to smoking cessation. The 4 possible stages were precontemplation, contemplation, determination, and action. Precontemplators were people who were not seriously considering reducing their alcohol use in the next 6 months nor reported any such reductions in their drinking (n = 40). Contemplators were people who were seriously considering reducing their heavy alcohol use in the next 6 months (n = 6). People in the determination stage were planning to cut down on their drinking in the next 30 days and had made an attempt to cut down in the past year (n = 2). People in the action stage had made reductions in their drinking (n = 51). In the current study the maintenance stage was not included because eligible participants entered the study drinking at levels that were defined as warranting intervention. In the current study the precontemplation and contemplation stages were collapsed and defined as the contemplation stage. Also, the determination and action stages were collapsed and defined as the determination stage. The contemplation and determination categories were used as a blocking factor in the study. This blocking factor was used to test the differential effectiveness of the two active interventions based on participant’s pre-test stage of change (contemplation versus determination).
The Socrates (Miller, Tonnigan, Montgomery et al, 1990) is a measure designed to assess Prochaska and DiClemente's five stages of change (1992) in relation to alcohol use (see Appendix P). The measure consists of 40 items with 8 items specific to each stage. All items use a five-point Likert scale that range from 'Strongly disagree' to 'Strongly agree'. Scale scores are derived by summing the responses to the items on each of the five subscales. Scale scores range from 5 to 40. Six items in the precontemplation scale are reversed scored. Categorical assignment to stage of change based on this measure has not been defined in prior research with drinkers. Thus, in the current study the Socrates was used in exploratory analyses to test the relationship between participants' scale scores and their categorical assignment to the stages of change. The alpha coefficients on the five subscales ranged from .79 to .91 at pre-test and 1-month follow-up.

Results

Randomization of participants to intervention conditions. In order to assess if randomization to the intervention conditions was successful in the study separate multivariate analysis of variance (MANOVA) were conducted on the dependent variables at pre-test. The dependent variables were frequency of moderate alcohol use, frequency of heavy alcohol use, and alcohol related problems. The
independent variable in this group of analyses was intervention condition (motivational feedback versus cognitive-behavioral skills training versus assessment only control condition). The results indicated no significant differences on any of the pre-test dependent variables across the three intervention conditions, p > .05. These findings suggest that randomization to intervention condition was successful in the study.

**Intervention compliance.** At the 1-month follow-up participants were asked ten true or false questions about the contents of their self-help materials. For each participant her or his questions were scored based on intervention condition. Participants on average answered 75% (SD = 19.91) of the questions correctly. There were no significant differences found between the 2 intervention conditions on the percent of materials participants recalled being part of their self-help materials p > .05.

Participants in the active conditions were also asked to hand in summary sheets in relation to the materials they read in their respective prevention conditions. The results indicated that 72% of the participants handed in at least partly completed summary sheets. Participants answered on average 68% (SD = 44.06) of the answers on the summary sheets correctly. Participants who did not hand in any summary sheets were given 0% correct scores. If
participants who failed to hand in summary sheets are excluded the mean percent answered correctly was 94.5 (S.D. = 12.21). Analysis of variance was conducted between intervention conditions on the percent of participants who handed in at least partly completed sheets and on the percent of correct answers submitted. There were no significant differences found between the motivational feedback and cognitive behavioral skills training groups on the percent of participants who handed in at least partly completed summary sheets or on the percent of correct responses submitted \( p > .05 \).

**Collateral reports of drinking behaviors.** At both the 1 and 2-month follow-up collaterals were asked several questions related to their friend's drinking behaviors via a 5 minute telephone interview. The collaterals were given no compensation for completing this interview. This may account for the low compliance rates by collaterals. Collateral interviews were completed at rates of 58% at the 1-month follow-up and 53% at the 2-month follow-up. Since a large percentage of collaterals did not complete the interview analyses of variance (ANOVAs) were conducted to determine if there were significant differences at baseline, 1-month, or 2-month follow-ups between participants whose collaterals completed interviews versus those who did not. No significant differences were observed between these two
groups on total drinks consumed, frequency of alcohol use, frequency of heavy alcohol use, or alcohol related problems scores at any of the assessment points.

In general, the correlations between participant and collateral reports of drinking behaviors were high (See Table 2). The correlations on these measures increased from the 1-month to the 2-month follow-up. Further, paired t-Tests were used to analyze for potential differences between participant and collateral reports on the measures of frequency of alcohol use, average drinks per occasion, and total drinks per week at both 1 and 2-month follow-ups. These measures were chosen because they were comparable across participant questionnaires and collateral telephone interviews. The results indicated that there were no significant differences between participants' and collaterals' reports on average drinks per occasion and total drinks consumed per week at both 1 and 2-month follow-ups. Similarly, no significant differences were found between participants and collaterals on the measure of frequency of alcohol use at the 1-month follow-up. However, at the 2-month follow-up significant differences were observed between participants' and collaterals' reports of frequency of alcohol use at the 1-month follow-up \( (1,47) \)
\[ t = 4.02 \ p < .05. \] Participants reported greater frequency of alcohol use \( (M = 8.70; \ SD = 6.41) \) than collaterals \( (M = \)
6.59; SD = 5.51) over the previous 30 days at the 1-month follow-up..

Effects of intervention condition and stage of change on drinking behavior and related problems. Drinking behavior outcome and changes in alcohol related problems as a function of intervention condition and stage of change were analyzed using the MANOVA approach to repeated measures. Separate 3 (intervention: cognitive-behavioral skills training versus motivational feedback versus assessment only control group) X 3 (time: pre-test versus 1-month follow-up versus 2-month follow-up) X 2 (stages of Change: contemplation versus determination) MANOVAs for repeated measures were conducted on each drinking related variable. Intervention and stages of change were between-participants factors and time was a within-participant factor. The following measures served as dependent measures: frequency of moderate alcohol use; frequency of heavy alcohol use; and alcohol related problems. Significant Intervention X Time X Stages of Change effects on the drinking variables would suggest support for the hypothesis that participants obtained differential benefits from the interventions based on their pre-test stages of change. In order to determine at what point in time (e.g. pre-test to 1-month follow-up versus 1-month to 2-month) significant differences were observed 3 (Condition) X 2
(Stages of Change) X 2 (Time) MANOVAs were performed on drinking indices that were found to have significant effects across the 3 assessment points.

In relation to total problems a time effect was found, Wilk's Lambda = .787, approximate $F(2,81) = 10.96, \ p < .05$. Further analyses revealed that participants increased their total problems significantly from pre-test to the 1-month follow-up, $F(2,86) = 10.45, \ p < .05$ (See Table 3). However, significant reductions were observed from 1-month to the 2-month follow-up, $F(2,82) = 22.17, \ p < .05$. No other significant main or interaction effects were observed on this measure.

A time effect was also observed on the frequency of heavy alcohol use measure, Wilk's Lambda = .083, approximate $F(2,82) = 3.75 \ p < .05$. Additional analyses revealed that there were significant differences on the measure of frequency of heavy alcohol use between pre-test and the 1-month follow-up, $F(1,87) = 6.95 \ p < .05$. Participants reported significantly less heavy alcohol use at 1-month follow-up compared to pre-test. No other significant main or interaction effects were observed on this measure. No significant main or interaction effects of condition, stages of change, or time were observed on the measure of frequency of moderate alcohol use.
Effects of condition and stage of change on drinking behavior and related problems with Spring Break controlled. The current study was conducted during a period which included Spring Break. Spring Break is considered to be an atypical heavy drinking period for many students. Participants' drinking related behaviors during Spring Break were assessed separately in order to determine if their presence attenuated the effects of the intervention conditions. Paired t-Tests were used to analyze if participants heavy alcohol use, moderate alcohol use, and related problems per week differed significantly from Spring Break compared to the rest of the follow-up period. The results indicated no significant differences between springbreak drinking behaviors and the rest of the follow-up period, \( p > .05 \).

Separate 3 (intervention) X 3 (time) X 2 (stages of change) repeated measures MANOVAs were conducted on several drinking variables after removing the Spring Break data from the follow-up period. The drinking measures used in this analyses were frequency of heavy alcohol use per week, frequency of moderate alcohol use per week, and total problems per week. The results indicated that the removal of Spring Break did not lead to subsequent Intervention X Time effects nor Intervention X Stages of Change X Time effects on any of the drinking indices, \( p > .05 \). However,
time effects were observed on the total problems per week, Wilk's lambda = .882, approximate F(2,81) = 5.37, p < .05, and the frequency of heavy alcohol use per week measure, Wilk's Lambda = .867, approximate F(2,82) = 6.30, p < .05. These findings were consistent with the previous analyses that was conducted with the inclusion of Spring Break problems and drinking behaviors. No time effects were observed on the frequency of moderate alcohol use measure.

Floor effects on drinking behaviors diminishing the effectiveness of the interventions. In order to explore whether the effects of the interventions may have been masked by differences in participants' drinking history, the measures of frequency of heavy alcohol use and related problems at pre-test were blocked into thirds. Effects of intervention on drinking behaviors were then re-analyzed using a 3 (Intervention) X 3 (Time) X 3 (Drinking Level: Heavy versus medium versus low) repeated measures MANOVA on each of these drinking measures. For each drinking variable its pre-test drinking measure was used as the drinking level factor. For example, pre-test frequency of heavy alcohol use was used to create the drinking blocking factor in the analysis of floor effects on the frequency of heavy alcohol use variable.

No significant Intervention X Time X Drinking Level interactions were observed on the frequency of heavy alcohol
use measures $p > .05$. Again only time effects were observed on the measures of alcohol related problems and frequency of heavy alcohol use. A similar analysis was conducted to assess for ceiling effects on the measure of frequency of moderate alcohol use. No significant Intervention X Time X Drinking level interaction was observed on the measure of frequency of moderate alcohol use. Thus, there was no indication that ceiling effects masked the effectiveness of the interventions on modifying moderate alcohol use.

Effects of gender, and Greek membership on the effectiveness of prevention intervention on drinking behaviors. Previous research has found that males in the Greek system benefited less than their peers from a motivational interviewing based intervention (Baer, 1993), thus analyses was conducted to test this hypothesis. A 3 (intervention) X 3 (time) X 2 (gender: female versus male) X 2 (Greek membership: yes versus no) repeated measures MANOVA was conducted on each of the dependent variables. No significant Intervention by Gender by Greek Membership by Time effects were observed on frequency of moderate or heavy alcohol use or alcohol related problems $p > .05$. Further, the results did not demonstrate any main or interaction effects other than time effects on frequency of heavy alcohol use and alcohol related problems.
Effects of condition and prevention compliance on drinking behaviors. To determine if participant compliance with the prevention interventions may have moderated the effectiveness of the prevention interventions on drinking behaviors separate 2 (intervention: cognitive-behavioral skills training versus motivational feedback) X 3 (time: pre versus 1-month follow-up versus 2-month follow-up) X 2 (compliance: high versus low) mixed-model repeated measures MANOVAs were conducted on the dependent variables. The compliance measure of submitting at least partly completed intervention summary sheets to the experimenter was used as the compliance factor in the above analyses. Participants who handed in at least partly completed summary sheets were placed in the high compliance groups (n = 46) while those who did not were placed in the low compliance groups (n = 18). The results indicated that there were no Condition X Compliance X Time effects observed on any of the drinking related variables \( p > .05 \). No main effects of compliance or interaction effects of Compliance by Time were observed \( p > .05 \).

Similarly, the above analyses was conducted using percent of correct summary sheet answers submitted as a compliance factor. Participants who submitted 90% of the correct answers on their summary sheets were placed in the high compliance condition while those receiving less than
90% were placed in the low compliance condition. Again, no Condition X Compliance X Time effects were observed on any of the drinking variables or alcohol related problems $p > .05$. Further, no main effects of compliance or interaction effects of Compliance by Time were observed $p > .05$.

Effects of condition and stage of change on use of coping strategies. To test for increases in participants' use of coping skills from pre-test to the 1-month follow-up based on their assignment to intervention condition and their stage of change, a 3 (intervention) $\times$ 2 (time: pre versus 1-month follow-up) repeated measures MANOVA was conducted on the measure of use of coping skills. A significant Intervention X Time effect on use of coping strategies would suggest support for the hypothesis that participants use of coping strategies would differ significantly as a function of the different interventions.

On the measure of use of coping strategies a significant time-effect was found, Wilk's Lambda = .818, approximate $F(2,80) = 8.87$, $p < .05$. Participants increased their use of coping strategies significantly from pre-test, $M = 1.78$ ($SD = .84$) to the 1-month follow-up, $M = 2.31$ ($SD = 1.64$), $F(1.86) = 13.08$, $p < .05$. However, the analyses also revealed significant reductions in the use of coping strategies between pre-test and the 2-month follow-up, $M = 1.52$ ($SD = 1.15$), $F(1.83) = 5.08$, $p < .05$. No other main
effects or interaction effects were observed on this measure. These findings suggest that at no time during the study did participants in any of the groups use these coping strategies often.

**Effect of intervention condition on expectancies.** To test for effects of intervention and stages of change on participant’s self-efficacy, coping-efficacy, and outcome expectancies from pre-test to the 1-month follow-up, separate 3 (intervention: cognitive-behavioral versus motivational feedback versus assessment only control group) X 2 (time: pre-test versus 1-month follow-up) repeated measures MANOVAs were conducted on measures of self-efficacy and coping-efficacy. A significant Intervention X Time effect on self-efficacy or coping-efficacy would suggest support for the hypothesis that participants efficacy expectancies would differ significantly as a function of the different intervention conditions.

A main effect of time was observed on the negative situations and emotional states self-efficacy subscale, F(1,87) = 6.34 p < .05. Participants increased their self-efficacy to drink in moderation in negative situations and when experiencing negative emotional states significantly from pre-test, M = 70.91 (SD = 21.65) to the 1-month follow-up, M = 74.62 (SD = 19.63). No other main or interaction effects were observed on this subscale.
In relation to the positive emotional states and situations self-efficacy subscale no significant main effects or interactions effects were observed on this measure \( p > .05 \). Participants' mean score on this measure was 56.10 (SD = 22.21) at pre-test and 55.07 (SD = 22.69) at the 1-month follow-up.

No main or interaction effects were observed on the measure of coping-efficacy which assessed students' abilities to use various coping strategies to drink in moderation, \( p > .05 \). Participants' mean score on the coping-efficacy scale was 60.50 (SD = 18.83) at pre-test and 62.48 (SD = 18.17) at the 1-month follow-up. Similarly no main or interaction effects were observed on the measures of outcome expectancies which assessed benefits and costs associated with limiting drinking to moderate levels \( p > .05 \). At pre-test participants' mean score on the benefits subscale was 75.10 (SD = 15.70) and at the 1-month follow-up 72.21 (SD = 15.65). Mean scores on the cost scale were 49.33 (SD = 12.89) at pre-test and 48.20 (SD = 13.12) at the 1-month follow-up.

The relative utility of outcome and efficacy expectancies in predicting drinking behaviors. The next group of regression analyses were conducted to test a number of theoretical relationships proposed by Bandura (1986) between efficacy expectancies, outcome expectancies and
future behavior. According to Bandura self-efficacy should be a significant predictor of drinking behavior at follow-up beyond outcome expectancies. However, outcome expectancies will not add to the prediction of drinking beyond efficacy expectancies.

Univariate relationships between the expectancies and drinking variables were first explored using zero-order correlations. These relationships are reported in Tables 4 through 6. A moderate negative relationship was observed between self-efficacy measures and negative outcome expectancies related to drinking in moderation. In general, self-efficacy and outcome expectancies at pre-test and 1-month follow-up were not significantly correlated with future moderate alcohol use. Self-efficacy in positive situations and when experiencing positive emotions at pre-test and 1-month follow-up tended to correlate moderately and negatively with heavy alcohol use at 1 and 2-month follow-ups. Outcome expectancies related to costs at pre-test and 1-month correlated moderately and positively with 2-month heavy alcohol use.

The relative utility of outcome and self-efficacy expectancies in predicting the drinking variables was then compared using regression analyses. In this set of analyses the ability of self-efficacy and outcome expectancies to predict future drinking behavior were tested comparing pre-
test to 1-month follow-up, pre-test to 2-month follow-up, and 1-month to 2-month follow-up data. For example, each measure of 1-month follow-up drinking was regressed hierarchically on pre-test drinking followed by pre-test outcome expectancies then pre-test self-efficacy expectancies. The regression was performed again, this time entering self-efficacy expectancies prior to outcome expectancies. Comparison of the amount of variation in 1-month follow-up drinking behavior explained by each construct after controlling for the other construct's contribution allowed for an assessment of their relative predictive utility beyond pre-test drinking behavior.

The relative utility of pre-test expectancies in predicting 1-month follow-up drinking behaviors. When the pre-test measure of frequency of moderate alcohol use was entered into equation first it explained 7.7% of the variability in the frequency of moderate alcohol use at 1-month follow-up (see Table 7). Next, the self-efficacy measure at pre-test was entered and able to significantly predict an additional 4% of the variance of the frequency of moderate alcohol use at the 1-month follow-up. Outcome expectancy at pre-test did not add to the prediction of the frequency of moderate alcohol use at the 1-month follow-up after past use and self-efficacy was controlled. When the outcome expectancy measure was entered into the equation
prior to self-efficacy it did not predict a significant proportion of variance in the frequency of moderate alcohol use at the 1-month follow-up. Self-efficacy did not predict a significant proportion of the variance of frequency of moderate alcohol use after controlling for outcome expectancy’s contribution. In addition, the results indicated that neither pre-test self-efficacy or outcome expectancy measures predicted a significant amount of variance in the frequency of heavy alcohol use at 1-month after controlling for pre-test frequency of heavy alcohol which predicted 5.6% (see Table 8).

The relative utility of pre-test efficacy expectancies in predicting 2-month drinking behaviors. Pre-test frequency of moderate alcohol use was entered into the equation first and predicted 5.6% of the variance in frequency of moderate alcohol use at the 2-month follow-up (see Table 9). Next, pre-test self-efficacy significantly predicted an additional 4.8% of the variance in the frequency of moderate alcohol use at the 2-month follow-up. Outcome expectancy at pre-test did not explain additional variance beyond self-efficacy’s contribution. Further, outcome expectancy when entered into the equation before self-efficacy did not predict a significant proportion of variance in the frequency of moderate alcohol use. However, self-efficacy did predict significantly 4.8% of the variance
in the frequency of moderate alcohol use after controlling for outcome expectancy. The results indicated that neither self-efficacy or outcome expectancy at pre-test were able to predict a significant proportion of variance in the frequency of heavy alcohol use at the 2-month follow-up after controlling for pre-test frequency of heavy alcohol which predicted 5.3% (see Table 10).

The relative utility of 1-month expectancies in predicting 2-month drinking behaviors. The results indicated that 1-month frequency of moderate alcohol use and heavy alcohol use were able to predict 4.5% and 6.1% of their comparable measures at the 2-month follow-up. After controlling for 1-month drinking behavior neither the self-efficacy or outcome expectancy measures at the 1-month follow-up were able to predict a significant proportion of the variance in the frequency of moderate alcohol use or heavy alcohol use at the 2-month follow-up.

Relationships between categorical and continuous measures of stages of change. The relationships between the categorical and continuous measures of stages of change were explored by assessing if participants in the different stages of change as identified by the categorical measure differed on subscale scores on the Socrates. A MANOVA was conducted for each Socrates subscale score at both follow-ups. The independent variable in these analyses was
participants' categorical stage of change. The dependent variable was Socrates subscale score. For the purpose of this analyses only data from participants in the precontemplation and action stages were retained. These participants' data were retained because it was observed at pre-test that very few participants were in either the contemplation or determination stages. The results indicated that participants in the precontemplation stage differed significantly on all of the Socrates subscale scores from those participants in the action stage \( p < .05 \). These results are presented in Table 11 along with means and standard deviations for subscale scores on the Socrates by the categorcial stage of change. The pattern of differences between participants in the precontemplation stage and those in the action stage were consistent with Stage of Change Theory (Prochaska & DiClemente, 1992). Participants in the precontemplation stage scored higher on the Socrates precontemplation subscale compared to those in the action stage. In contrast, participants in the action stage scored significantly higher on all other Socrates subscales than participants in the pre-contemplation stage.

The relative utility of pre-test stages of change in predicting 1-month drinking behaviors. Univariate relationships between the Stages of Change subscales and drinking variables were first explored using zero-order
correlations (see Tables 12-13). These results indicated that moderate alcohol use tended to correlate moderately and positively with maintenance subscale scores. Precontemplation scores at 1-month correlated minimally and negatively with moderate alcohol use at both follow-ups. Determination scores correlated positively with moderate alcohol use at 1-month follow-up. In general, the contemplation subscale at pre-test and 1-month correlated positively with heavy alcohol use at both follow-ups. Conversely, the precontemplation score at 1-month correlated negatively with heavy alcohol use at 2-month follow-up.

The utility of Stages of Change in predicting different indices of drinking was then explored using regression analyses. Concurrent drinking behavior was first entered into the regression equation to control for it's contribution in predicting future drinking. Next, Socrates subscale scores were entered as a block into the equation to determine if they explained future drinking beyond concurrent drinking behavior's contribution. These analyses were conducted on the frequency of moderate and heavy alcohol use variables.

The results indicated that the frequency of moderate alcohol use at pre-test accounted for 8.6% of the variability in frequency of moderate alcohol use at 1-month follow-up (see Table 14). The stages of change measure
predicted an additional 16.2% of the variance in the frequency of moderate alcohol use at the 1-month follow-up. Stages of change at pre-test did not account for significant amounts of the variability in the frequency of heavy alcohol use at the 1-month follow-up after controlling for concurrent drinking behavior.

**Relative utility of pre-test stages of change in predicting 2-month drinking behaviors.** Pre-test frequency of moderate alcohol use was able to predict significantly 5.4% of the variance in 2-month moderate alcohol use (see Table 15). Stages of Change at pre-test then accounted for an additional 13.1% of the variance in the frequency of moderate alcohol use at the 2-month follow-up. In addition, pre-test frequency of heavy alcohol use significantly predicted 5.2% of the variance in 2-month drinking patterns. Stages of change at pre-test did not explain significant amounts of the variance in the frequency of heavy alcohol use at the 2-month follow-up after controlling for pre-test drinking behavior.

**The relative utility of 1-month stages of change in predicting 2-month drinking behaviors.** The results indicated that frequency of moderate alcohol use at 1-month follow-up accounted for 4.5% of the variability in 2-month frequency of moderate alcohol use. Stages of change at the 1-month follow-up was then entered and did not predict
significant amounts of variance in the frequency of moderate alcohol use at the 2-month follow-up. Similarly, frequency of heavy alcohol use at the 1-month follow-up accounted for 6% of the variability in 2-month frequency of heavy alcohol use. Stages of change at the 1-month follow-up did not explain additional variance.

Discussion

The current study examined the relative effectiveness of motivational feedback compared to cognitive-behavioral skills training delivered in bibliotherapy format to college students. The effectiveness of matching alcohol abuse interventions with participant’s stage of change was also explored. The study’s design utilized an assessment only control group and collateral informants to strengthen the validity of the conclusions. Participants were a group of college students who volunteered and received monetary incentives or class credit for participating in the study. Thus, the generalizability of the results to other students may be limited.

The results indicated that participation in the cognitive-behavioral skills training and motivational feedback interventions did not lead to greater reductions in participants’ alcohol use and alcohol related problems than assignment to an assessment only control group. No significant differences were found between these three
groups on any of the drinking measures from pre-test to 1-month and from pre-test to the 2-month follow-up. The results demonstrated only time effects on several of the drinking indices across the 3 experimental conditions. Time effects were observed on alcohol related problems and frequency of heavy alcohol use. In relation to alcohol related problems a pattern was observed where participants increased their alcohol related problems from pre-test to the 1-month follow-up and then decreased them at 2-month follow-up back to pre-test levels. This observed pattern may have been related to the time frame of the assessments. For many participants their pre-test assessment period included Winter break. Thus, they were at home for this period. The questionnaire that assessed their alcohol related problems taps into many domains that are campus specific. Thus, these students may not have had the opportunities to have these problems while at home which may account for the lower levels of problems initially reported. The increase at 1-month follow-up and decrease at 2-month follow-up in problems may reflect semester variations in drinking. Students may spend more time socializing and drinking when they first return to school and then decrease their socializing as their coursework increases.

On the measure of frequency of heavy alcohol use participants decreased their drinking significantly from
pre-test to the 2-month follow-up. This time effect may have been caused by reactivity to assessment. At pre-test participants completed questionnaires that assessed their drinking which may have made them more aware of their heavy drinking. Thus, this awareness may have motivated them to reduce their heavy alcohol use.

The findings related to intervention effectiveness are inconsistent with other recent findings. Miller and Agnostelli (in press) presented one group of students with motivational feedback through the mail while a second groups' exposure was delayed six weeks. Their results indicated that students who were exposed to the motivational feedback reported significantly fewer mean standard drinks per week at the 6-week follow-up than those who were on the waiting list. Baer (1993) also found that students who completed a motivational interviewing based intervention reduced their drinking significantly more from baseline to follow-up than students in an assessment only control group.

The lack of support for the effectiveness of these interventions may be accounted for by a number of factors. Participant compliance was evaluated as one potential moderator of intervention outcomes. Participants who completed more of the self-help interventions may have gained more benefits from the interventions. Several compliance measures were used in the study. No differences
were observed across the two interventions on any of these compliance indices which suggests that the two interventions were equally appealing to the students. In general, intervention compliance was moderate. Participants self-reported on average completing 72% of the self-help materials and submitted 68% of the correct answers on their summary sheets. The compliance measure of submitting summary sheets was used in analyses which explored the relationship between drinking outcomes and intervention compliance. This measure was chosen because it was considered the most valid in the study because unlike the other compliance measures it was not based on self-reports rather it was concrete evidence of participants’ use of the self-help materials. The results of this analyses demonstrated that intervention compliance did not lead to differential outcomes in the two interventions.

Other factors such as participants’ gender, Greek membership, and student status were examined as moderators of drinking outcomes. The results indicated that regardless of gender, Greek membership, or student status similar drinking outcomes were observed across the three experimental conditions. Analyses were also conducted to determine if males in the greek system obtained fewer benefits than other students. In an ongoing study at the University of Washington Baer (1993) has observed that males
in the Greek system appear to be attaining fewer benefits from an intervention based on motivational interviewing principles compared to their peers. The results of the current study demonstrate no superior drinking reductions for college students who are not males in the Greek system. Collateral informants reports of drinking and related problems tended to correlate highly with participants'. Further participants' reports did not differ significantly from collateral reports except on the measure of frequency of alcohol use at 1-month follow-up. In that case, participants reported a significantly higher frequency of use than collaterals on the index. Thus, the lack of significant findings in the area of intervention effectiveness are probably not due to poor validity.

The study's sample size may have also limited the ability to detect significant differences between the intervention conditions and the control group (Lipsey, 1990). The estimated effect sizes between the active conditions in this study and the control condition on the measure of moderate alcohol use was .40 at the 1-month follow-up. Further, the effect size between the cognitive-behavioral skills training and control condition at the 2-month follow-up for the heavy alcohol use measure was .20. These findings are comparable to effects sizes (.28 - .45) calculated from data reported by other college student
alcohol abuse researchers (Agnonistelli et al., in press; Baer, 1993; Baer et al., 1989; Kivlahan et al., 1990). Baer (1993) observed significant reductions on several drinking indices by students exposed to the motivational interviewing based intervention. In his study each of his experimental conditions had almost five times as many participants as the current study. If the sample size in the current study had approximately 250 participants per condition significant differences would have been observed between the active conditions and control group on the measure of moderate alcohol use (Lipsey, 1990). This finding suggests that the between condition effect sizes observed in studies that have modified student drinking are relatively small.

The study also examined several hypotheses in relation to matching interventions with stages of changes. It was argued that students in the determination stage who participated in the cognitive-behavioral skills training intervention would decrease their alcohol use and related problems more than those in the determination stage who were exposed to the motivational feedback intervention. Similarly "contemplators" who were assigned to the motivational feedback intervention were expected to decrease their alcohol use and related problems more than "contemplators" in the cognitive-behavioral skills training intervention. However, no significant Intervention X Stage
of Change X Time interactions were observed to support these hypotheses.

The lack of support for the hypotheses based on stages of change theory may be attributed to the method in which participants were categorized into the different stages of change. The current study was the first effort to place drinkers into mutually exclusive stages of change. This effort is an important step in determining if it is possible to match alcohol abuse interventions to students' stage of change. The measure that was utilized in the current study was based on Prochaska and DiClemente's (1992) work with smoking cessation. Thus, the measure may not have been able to translate appropriately to the target behavior or intervention goal which was moderate alcohol use. More than half the participants were placed in the determination and action stage using the categorical schema in the study. However, participants mean scores at pre-test on the precontemplation scale were significantly higher than other Socrates' subscale scores. This finding also suggests a lack of congruence between these two measures. Thus, there is a need to develop a measure that more appropriately places drinkers into mutually exclusive stages of change. If a more valid measure is developed researchers may then be able to detect differential effectiveness across prevention interventions based on participants' stage of change.
Participant’s high mean scores on the precontemplation subscale at pre-test also gives a tentative explanation to why the cognitive-behavioral skills training intervention was not effective in changing participants' drinking behaviors. The finding suggests that most participants were in the precontemplation stage when they entered this study. Thus, they may not have recognized the need for change when they were provided with strategies to modify their drinking. This may account for students' low rate of coping strategies utilization in the study.

As part of the Drinker's Check-up assessment results are presented to participants by a therapist in a single therapy session. Within this session the therapist is able to utilize a number of strategies to enhance the effectiveness of the feedback given to participants. These strategies include but are not limited to probing of participants' reactions to the assessment results and reflective listening (Miller & Rollnick, 1991). Probing may lead to self-motivational statements which acknowledge problems or reflect consideration of change. Reflective listening may be used to further amplify students' concerns about their drinking. Thus without access to these strategies feedback given in bibliotherapy format may not be able to form a strong discrepancy between how a student perceives oneself and how she or he actually behaves. This
may partly account for the intervention's ineffectiveness. This conclusion is supported by Baer (1993) who found that college students presented with motivational feedback by a therapist were able to reduce their drinking significantly more than an assessment only control group. Thus, students may need to be exposed to interventions that are more intensive than bibliotherapy. For example, an intervention that is delivered through direct therapist contact and provides students with motivational feedback and skills to avoid heavy alcohol use may be found to be very effective.

There are certain unique aspects of the college population and the context in which students drink that may limit even the most well designed interventions. Some of the negative consequences associated with heavy drinking such as hangovers, missing classes, and getting into fights may appear minimal to college students. Further, many students may believe that heavy drinking and "partying" is a right of passage associated with their college years which will be abandoned after college. Students minimizing problematic drinking and viewing it as temporary may lead to low levels of motivation in relation to reducing drinking behaviors. Similarly, students who go to school full-time usually have flexible schedules where they only have to attend classes several hours per day. Thus, much of their time may be spent drinking and socializing. Results from
national surveys (Presley, Meilman, & Lyerla, 1993; Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994) indicate that almost 50% of college students who are categorized as drinkers consume alcohol heavily monthly. In a drinking environment where every other person drinks excessively, heavy drinking probably appears to be normal to college students. Consistent with this normalization of heavy drinking is the observation that college students have traditionally played "drinking games" where the goal of these games is to get one's peers intoxicated. These unique characteristics of college students and campuses may make it difficult to decrease student problem drinking. Thus, it may be important to consider these factors when designing interventions.

The social cognitive perspective suggested that students in the cognitive-behavioral skills training program would increase their use of coping strategies and feel more confident in their abilities to control their drinking than students who were given feedback about their drinking patterns. However, in this study differential effects on use of coping-strategies and self-efficacy were not observed across the 3 experimental conditions. All participants increased their self-efficacy to drink in moderation in negative situations and when having negative emotions. However, these situations may not be very applicable to
college students. For example, Carey (1993) found that college students were more likely to drink heavy in social situations where they were feeling pressured to drink and during pleasant times with others, than when they felt negative emotions. Students drinking appears to be a circumscribed behavior occurring primarily in positive situations, thus, self-efficacy in positive situations may be more important to change. The study did not demonstrate significant increases in students' self-efficacy in positive situations and when feeling positive emotional states. This may partly account for why use of coping responses to avoid drinking heavily did not increase, and thus heavy drinking did not decrease (Bandura, 1977, 1986).

Tests of competing hypothesis regarding the relative and incremental utility of outcome and self-efficacy expectancies were also conducted in the study. The results indicated that pre-test efficacy expectancies consistently predicted a significant, although modest, proportion in participants' frequency of alcohol use and moderate use at 1 and 2-month follow-ups. Outcome expectancies although showing significant univariate relationships with participants' drinking behavior were unable to add to the prediction of drinking behavior beyond self-efficacy and concurrent drinking behavior. This pattern of results support Bandura's view that efficacy expectancies subsume
most of the predictive power of outcome expectancies. Further, as predicted by Bandura, prior drinking behavior alone did not fully explain future use, rather students perceptions of efficacy also guided future use.

A unique aspect of this study was the operationalization of outcome and efficacy expectancies in relation to moderate use as defined by blood alcohol levels. Objective and personalized definitions of moderate drinking allowed for a more standardized evaluation of how outcome and efficacy expectancies are related to specific levels of alcohol use. This may have increased the predictive utility of these measures. Evidence for this was in the finding that pre-test self-efficacy was able to predict 1-month follow-up moderate alcohol use beyond pre-test moderate alcohol use. In the future other researchers may wish to operationalize self-efficacy with blood alcohol levels to standardize participants definitions of a target drinking level (i.e. moderate use, heavy use) in order to enhance construct validity and predictive utility.

The study also explored the relative utility of Stages of Change in predicting drinking behavior. The findings in this area were promising. After controlling for pre-test moderate alcohol use the subscale scores of the Socrates at pre-test were able to predict at 1 and 2-month follow-ups 16 and 13% of moderate alcohol use, respectively. As noted by
Prochaska & DiClemente (1986) readiness for change is an important construct to consider when attempting to understand changes in behaviors such as college student drinking. As this was the first effort to use stages of change as a predictor of student drinking these findings need to be replicated in future studies.

Currently, on a national level a substantial number of college students are drinking at a high risk level (Presley, Meilman, & Lyerla, 1993; Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994). However, to date this study is one of a few that have used an experimental design to evaluate alcohol abuse intervention strategies with college students. Thus, more controlled studies need to be conducted to identify intervention strategies that will attract students and lead to reductions in their problematic drinking patterns. A number of changes could be made which might enhance the effectiveness of these interventions. These suggestions include combining motivational feedback with skills training and delivering the interventions through direct therapist contact. This study demonstrated that both stages of change and self-efficacy are related to college students' drinking behavior beyond concurrent drinking behavior. Thus, gaining a better understanding of how these constructs relate to student drinking may also guide researchers and clinicians to develop more effective
intervention programs. Further, since within the college population heavy drinking appears to be the norm interventions that only target the individual level may not be able to impact student drinking alone. Thus, in order to reduce college student alcohol abuse it may be necessary to also change environmental factors. Examples of areas that might be targeted include stricter enforcement and more severe penalties for underage drinking, more severe penalties for serving underage drinkers, and reducing the amount of alcohol that may be distributed per person.
References


Engs, R.C., & Hanson, D.J. (1988). University students' drinking patterns and problems: Examining the effects of raising the purchase age. Public Health Reports, 103(6), 667-673.


Sanchez, C.M. (1980). Random assignment to abstinence or controlled drinking in a cognitive-behavioral program: Short-term effects on drinking behavior. Addictive Behaviors, 5, 35-39


Investigator: Curtis K. Greaves
Number_____ Department of Psychology
Virginia Tech
(703) 231-7631

Faculty Sponsor: Robert S. Stephens, Ph.D.
Department of Psychology
Virginia Tech
(703) 231-6304

Learning More About Your Drinking Project

Consent Form

We are interested in your opinion about the usefulness of written materials created to help college student learn more about or change their drinking behavior. We are also interested in your beliefs and attitudes about the consequences of alcohol use. The information gained will be important in increasing our understanding of college student drinking, so that education and prevention programs can be better constructed to meet the needs of the college student population.

If you agree to participate, you will be asked to read written materials related to alcohol use and college students, complete several questionnaires that assess your beliefs about the effects of alcohol, and your perceived ability to make changes in your alcohol consumption. These materials are designed to help you understand your drinking behavior and to help you make changes if you want. However, you are not required to change your drinking behavior to participate in this study. Simply wanting more information about your drinking is sufficient. You may refrain from answering any question. In order for you to be eligible in the study you must provide the experimenter with a telephone number of a person who can verify your alcohol use over the next two months. This person will only be questioned about your alcohol use over the telephone.

All of your responses will be kept completely confidential and your name will be linked with your response only through a code number that appears at the top of this consent form and on the questionnaire. The signed consent form will be
stored in a separate locked file cabinet from your responses on the questionnaires and only research staff who have signed oaths of confidentiality will have access to your data.

The only risks associated with participation in the study is the personal discomfort you may feel when answering questions about your beliefs and attitudes toward the use of alcohol. You may also feel discomfort if you choose to attempt to change your drinking and are unable to accomplish this goal. You may benefit from participation in this study by learning more about your drinking, how research is conducted, the questions of the study, and how they are answered by the design and procedures. You will also have the opportunity to contact the experimenter if you wish to find out the results of the study and to ask questions regarding the study.

Your rights are as follows: a) You may refrain from answering any questions during the study. b) You are free to withdraw from the study at anytime, after a short debriefing, without penalty. If you decide not to participate, let the experimenter know immediately. The experimenter will explain the experiment in full and discuss it with you before you leave. c) If you feel discomfort as a result of your participation, appropriate referral for assistance will be made. d) The full rationale of the study will be explained to you in a debriefing session following the experiment.

Any questions may be addressed to the investigator, Curtis Greaves, at 552-3853 or 231-7631, the faculty sponsor, Dr. Robert Stephens, at 231-6304, or ______, chair of the Human Subjects Committee, at ______. You may also contact Ernest Stout, chair of Virginia Tech's Institutional Review Board, at 231-9359.

I hereby agree to voluntarily participate in the research project described above and under the conditions described above.

_________________________  ________________________
Name  Date

_________________________  
Student I.D.  Number
APPENDIX B
INSTRUCTIONS FOR COMPLETING THE TIMELINE CALENDAR

USING THE CALENDAR WHICH FOLLOWS, WE WOULD LIKE YOU TO RECALL YOUR DRINKING. THIS IS REALLY NOT A DIFFICULT TASK, ESPECIALLY WHEN YOU USE THE CALENDAR FOR REFERENCE. WE HAVE FOUND CALENDARS VERY USEFUL IN HELPING PEOPLE RECALL THEIR DRINKING. THE FOLLOWING ARE INSTRUCTIONS AND TIPS FOR COMPLETING THE CALENDAR.

1) It is important that for each day on the calendar, that you list the number of drinks you consumed. Remember by one drink we mean one 12 ounce drink of beer, one standard cocktail containing 1.5 ounce of 86 proof liquor, or one 4 ounce drink of wine.

2) On any day that you did consume an alcoholic beverage, write in the number of Drinks for each day. This includes days of combined beverage use. For example, on one day if you drank a 4 oz. glass of wine with dinner and a 12 oz. beer, you would count that as 2 drinks.

3) On all days that you did not drink any alcoholic beverage write "0". The important thing is to make sure that something is filled in for each day.

4) On days that you did drink please also indicate in the space provided the approximate number of hour(s) it took you to consume the drinks. For example, if you had 5 drinks over a 3 hour period place 5 in the drinks space and 3 in the hours space. NOTE: When estimating the number of hour(s) it took you to consume the drink(s) please round to the nearest hour. For example if it took you 1.5 hours to drink 4 drinks indicate 2 hours in the space provided. For drinking episodes that took less than one hour round to one hour.

5) While some people have felt uncomfortable filling out the calendar at first, it is usually because they are concerned they can't give a precise day-by-day account of their drinking. While this would be nice, what we want you to do is use a daily estimation method which is your best recall or guess of what you drinking was like. Put down your best estimate.

6) In filling out the calendar, we would like you to be as accurate as possible. However, if you can't recall whether you consumed an alcoholic beverage on a Monday or Thursday of a certain week, or whether it was the week of November 9th or the week of November 16th, give it your best shot.
HELPFUL HINTS:

1. Write down days that are specific to yourself, such as birthdays, test dates, parties, band dates, etc. Marking down these special days can aid in your recall of when and how much you drank.

2. If you have a planner or appointment book available, you can use it to aide in your recall your drinking.

3. Sometimes people have certain patterns to their drinking and this can help you in filling out the calendar. For example, if you usually go out with friends Friday or Saturday nights, you might recall that you would have had a certain number of drinks on those evenings, or you may have a weekend change in your drinking, or your drinking may be different depending on the season or semester.
YOUNG ADULT ALCOHOL PROBLEMS SCREENING TEST

Over the last 2 months how often have the following problems happen to you when you were drinking. For each item please circle the response that best describes the number of times each of these consequences have occurred when you were drinking over the last 2 months.

0 = 0 Times
1 = 1
2 = 2-3 Times
3 = 4-5 Times
4 = 6-7 Times
5 = 8-9 Times
6 = 10 or more times

1. Have you driven a car when you knew you had too much to drink? 0 1 2 3 4 5 6
2. Had you had a headache (hangover) the morning after you had been drinking? 0 1 2 3 4 5 6
3. Have you felt very sick to your stomach or thrown up after drinking? 0 1 2 3 4 5 6
4. Have you showed up late for work or school because of drinking, a hangover or an illness caused by drinking? 0 1 2 3 4 5 6
5. Have you not gone to work or missed classes at school because of drinking a hangover, or illness caused by drinking? 0 1 2 3 4 5 6
6. Have you gotten into physical fights when drinking? 0 1 2 3 4 5 6
7. Have you gotten into trouble at work or school because of drinking? 0 1 2 3 4 5 6
8. Have you been fired from a job or suspended or expelled from school because of your drinking? 0 1 2 3 4 5 6
9. Have you damaged property, set off a false alarm, or other things like that after you had been drinking? 0 1 2 3 4 5 6
0 = 0 Times
1 = 1
2 = 2–3 Times
3 = 4–5 Times
4 = 6–7 Times
5 = 8–9 Times
6 = 10 or more times

10. Has your boyfriend/girlfriend (or spouse), parent(s), or other near relative ever complained to you about drinking? 0 1 2 3 4 5 6

11. Has your drinking created problems between you and your boyfriend/girlfriend (or spouse) another near relative? 0 1 2 3 4 5 6

12. Have you lost friends (including boyfriend/girlfriend) because of drinking? 0 1 2 3 4 5 6

13. Have you neglected your obligations, your family, your work, or school work for two or more days in a row because of your drinking? 0 1 2 3 4 5 6

14. Has drinking gotten you into sexual situations that you later regretted? 0 1 2 3 4 5 6

15. Have you received a lower grade on an exam or paper than you should have because of drinking? 0 1 2 3 4 5 6

16. Have you been arrested for drunken driving, driving while intoxicated, or under the influence of alcohol? 0 1 2 3 4 5 6

17. Have you been arrested, even for a few hours, because of other drunken behaviors? 0 1 2 3 4 5 6

18. Have you awakened the morning after drinking and found that you could not remember a part of the evening? 0 1 2 3 4 5 6
0 = 0 Times
1 = 1
2 = 2-3 Times
3 = 4-5 Times
4 = 6-7 Times
5 = 8-9 Times
6 = 10 or more times

19. Have you had "the shakes" after stopping or cutting down on drinking (for example, your hands shake so that your coffee cup rattles in the saucer or you have trouble lighting a cigarette?)

0 1 2 3 4 5 6

20. Have you felt like you needed a drink just after you'd gotten up (that is, before breakfast)?

0 1 2 3 4 5 6

21. Have you needed larger amounts of alcohol to feel any effect, or that you could no longer get high or drunk on the amount you that used to get you high or drunk?

0 1 2 3 4 5 6

22. Have you felt that you needed alcohol or were dependent on alcohol?

0 1 2 3 4 5 6

23. Have you ever felt guilty about your drinking?

0 1 2 3 4 5 6

24. Has your doctor told you that your drinking was harming your health?

0 1 2 3 4 5 6

25. Have you gone to anyone for help to control your drinking?

0 1 2 3 4 5 6

26. Have you attended a meeting of Alcoholic Anonymous because of concern about your drinking?

0 1 2 3 4 5 6
APPENDIX D
1. Please indicate your sex. (1) Female (2) Male

2. Please put your age in the blank. ____ years

3. Please put your body weight in the blank. ____ pounds

4. What category best describes your race?
   1) Caucasian
   2) Hispanic
   3) African-American
   4) Asian
   5) Other _________

5. Please indicate which student status fits you best.
   (1) _____ Freshman
   (2) _____ Sophomore
   (3) _____ Junior
   (4) _____ Senior
   (5) _____ Special Student

6. What are your current living arrangements?
   I live in
   (1) _____ Fraternity or Sorority Special Housing
   (2) _____ Residence Hall
   (3) _____ Off Campus Apartment Complex or House
   (4) _____ With Parents

7. Are you in a sorority or fraternity
   0) No  1) Yes

8. Are you a little sister for a fraternity
   0) No  1) Yes
9. **Have any of your blood relatives had a history of alcohol problems?** If so please indicate those relatives who apply by checking the appropriate space(s). Further, if more than one grandmother, grandfather, sister, brother, aunt, or uncle has had a history of alcohol problems indicate the number in the space provided. For example, if both your grandfathers had a history of problems with alcohol you would indicate 2 in the # of grandfather(s) blank space.

Father ______  Mother ______

Sister(s) _____  # of sister(s) ____
Brother(s) _____  # of brother(s) ____
Grandfather(s) ____  # of grandfather(s) ____
Grandmother(s) ____  # of grandmother(s) ____
Aunt(s) ____  # of aunt(s) ____
Uncle(s) ____  # of uncle(s) ____
10. Are you currently under the regular care of a physician?
   
   Yes _____  No _____

   If so, for what condition?
   __________________________________________

11. Describe all medications that you currently use:
   Medication    Dosage    Frequency    Purpose
   __________________________________________
   __________________________________________

12. Have you ever had:
   a) A heart attack or stroke?     Yes ____  No ____
   b) Any indication of heart trouble? Yes ____  No ____
   c) High blood pressure?          Yes ____  No ____
   d) Diabetes?                    Yes ____  No ____
   e) Liver disease?                Yes ____  No ____

   For any items answered "Yes", please give a brief description of the disorder and the dates:

13. Are you currently pregnant or is there any possibility that you may be pregnant at this time?

   Yes ____  No ____
14. In terms of your use and reactions to alcoholic beverages, have you ever had:

a) An experience of fainting or a seizure after drinking alcohol?  
   Yes ____  No ____

b) Unusual flushing of the skin?  
   Yes ____  No ____

c) Problems with your liver?  
   Yes ____  No ____

d) Severe/unusual psychological reaction?  
   Yes ____  No ____

For any items answered "Yes", please give a brief description of the reaction/disorder and the approximate dates:

15. Please indicate in the space provided the phone number of an individual that can verify your drinking over the next 2 months. This person will only be questioned over the telephone.

Person's Name ________________________________

Person's Telephone # _________________________
16. In order for us to contact you to tell you if you are eligible to participate in the study we need a telephone number from you. Please indicate your telephone number in the space provided. Further, also give us a local mailing address so that in the future we can send you materials on alcohol if you are eligible to participate in the study. Thank you.

My Local Telephone Number ________________________________

My Local Address:

________________________________________
________________________________________
________________________________________
________________________________________
________________________________________
**Blood Alcohol Level Conversion Table**

What is Blood Alcohol Level (BAL)? BAL is the ratio of alcohol to blood in the bloodstream. BAL can typically be predicted from the amount of alcohol that is in an individual's bloodstream when that person's sex and weight are known. Throughout the questionnaires we will refer to the term heavy drinking. Following this point on moderate drinking will be defined as attaining a BAL of .05 or below during a 4 hour period. Below is the number of drinks it would take males and females, depending on their body weights, to achieve a BAL of .05 or lower over a 4 hour period. (Note one drink is equal to 12 oz of beer or 4 oz of wine or one standard cocktail containing 1.5 oz of 86 proof liquor)

**For several of the questionnaires you will be asked to refer back to this chart. If you have any questions about how to interpret it please ask the assessor.**

BAL = .05 over a four hour period

<table>
<thead>
<tr>
<th>Males</th>
<th>Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Drinks</td>
<td>Number of Drinks</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------</td>
</tr>
<tr>
<td>120 LBS or less</td>
<td>3.5</td>
</tr>
<tr>
<td>120-139 LBS.</td>
<td>4.5</td>
</tr>
<tr>
<td>140-159 LBS.</td>
<td>5</td>
</tr>
<tr>
<td>160-179 LBS.</td>
<td>5.5</td>
</tr>
<tr>
<td>180-199 LBS.</td>
<td>6.5</td>
</tr>
<tr>
<td>200-219 LBS.</td>
<td>7</td>
</tr>
<tr>
<td>220 LBS. or more</td>
<td>7.5</td>
</tr>
<tr>
<td>100 LBS. or less</td>
<td>2.5</td>
</tr>
<tr>
<td>100-119</td>
<td>3</td>
</tr>
<tr>
<td>120-139 LBS.</td>
<td>3.5</td>
</tr>
<tr>
<td>140-159 LBS.</td>
<td>4</td>
</tr>
<tr>
<td>160-179 LBS.</td>
<td>4.5</td>
</tr>
<tr>
<td>180-199 LBS.</td>
<td>5</td>
</tr>
<tr>
<td>200 LBS. or more</td>
<td>5.5</td>
</tr>
</tbody>
</table>
APPENDIX F
MANIPULATION CHECK FORM

Use the scale provided for items 1-4. Please circle one response for each question.

Strongly Disagree = 1
Disagree Somewhat = 2
Neither Disagree or Agree = 3
Agree Somewhat = 4
Strongly Agree = 5

1. The information on alcohol given to me was clear and understandable. 1 2 3 4 5

2. The information on alcohol given to me was interesting. 1 2 3 4 5

3. The information on alcohol given to me was useful in helping me change my drinking patterns. 1 2 3 4 5

4. I would recommend this information to other students. 1 2 3 4 5

5. The information given to me was useful in helping me learn more about my drinking. 1 2 3 4 5

Answer Yes or No for questions 6-15. Circle your choice

6. The information on alcohol given to me listed ways in which I can control my drinking. Yes No

7. The information on alcohol given to me gave me information on how much I drink per week compared to other Americans. Yes No

8. The information on alcohol given to me had an exercise on identifying situations in which I drink heavily. Yes No
9. The information on alcohol given to me had an exercise that had me identify how to set limits on my drinking. Yes No

10. The information on alcohol given to me gave me information on how my risk for future alcohol problems is reflected in my family's history of alcohol problems. Yes No

11. The information on alcohol given to me gave me information on how my risk for future alcohol problems is reflected in my use of other drugs. Yes No

12. The information on alcohol given to me discussed assertiveness skills. Yes No

13. The information on alcohol given to me discussed relaxation techniques. Yes No

14. The information on alcohol given to me gave me information on my average peak blood alcohol level over the time period assessed Yes No

15. The information on alcohol given to me gave me information on my highest peak blood alcohol level over the time period assessed earlier on the calendar during the screening session Yes No

16. What percent of the materials on alcohol mailed to you did you read? 0 20 40 60 80 100
Please circle Yes or No for questions 17-21 and indicate additional information where applicable.

17. Have you read any materials from other people’s reading packets in this study? Yes No

18. Over the last 2 months have you participated in any other study(s) related to alcohol use? Yes No

If you indicated yes to question 18 please indicate in the space the name of the study(s).

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

19. Over the last 2 months have you participated in any alcohol abuse prevention program(s)? Yes No

If you indicated yes to question 19 please indicate in the space the name of the prevention program(s) and the number of times you attended functions related to the program(s)

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

20. Over the last 2 months have you been in any treatment program(s) in order to change your alcohol use? Yes No

If you indicated yes to question 20 please indicate in the space provided the program you attended and the number of sessions you completed in this program

________________________________________________________________________
________________________________________________________________________
APPENDIX G
PERSONAL FEEDBACK REPORT

Name: _________________________  I.D. # __________

1. YOUR DRINKING ______________________________________

   Number of standard "drinks" per week: ___ drinks

   Your drinking relative to American Adults (same sex): ___ percentile

2. LEVEL OF INTOXICATION ________________________________

   Estimated Blood Alcohol Concentration (BAC) peaks:
   in a typical week: ___ mg %
   on a heavier day of drinking ___ mg %
3. **RISK FACTORS**

   **Tolerance Level:**
   - ___ Low (0-60)
   - ___ Medium (61-120)
   - ___ High (121-180)
   - ___ Very High (181+)

   **Other Drug Risk:**
   - ___ Low
   - ___ Medium
   - ___ High

   **FAMILY RISK FACTORS:**
   Low: 0-1  Medium: 2-3  High: 4-6  Very High: 7 +

4. **NEGATIVE CONSEQUENCES**

   **Severity of Problems**

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Very High</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 7</td>
<td>8 - 15</td>
<td>16 - 25</td>
<td>26 - 40</td>
</tr>
</tbody>
</table>

   **Your Score:** _____

   **DRINC:**
   (Ever Happened)

<table>
<thead>
<tr>
<th>Low</th>
<th>Medium</th>
<th>High</th>
<th>Very High</th>
</tr>
</thead>
<tbody>
<tr>
<td>55-60</td>
<td>61-75</td>
<td>76-90</td>
<td>91+</td>
</tr>
</tbody>
</table>

   **YAAPST:**

   These are some of the negative consequences you reported that have happened to you over the last month according to the YAAPST

   __________________________   __________________________
   __________________________   __________________________
UNDERSTANDING YOUR PERSONAL FEEDBACK REPORT

The personal feedback report summarizes results from your assessment session with us. This information is to help you understand the written report you have received.

1. YOUR DRINKING

The first line in this section shows the number of drinks that you reported having in a typical drinking week. To give you an idea of how this compares with drinking of American adults in general, the second number in section 1 is a percentile figure. This tells you what percentage of U.S. men (if you are a man) or women (if you are a woman) drink less than you reported drinking in a typical week of drinking. If this number were 60, for example, it would mean that your drinking is higher than 60 percent of Americans of your sex (or that 40 percent drink as much as you reported, or more).

How much is too much? It depends on many factors. Current research indicates that people who average three or more standard drinks per day have much higher risk of health and social problems. For some people, however, even 1-2 drinks per day would be too many. Pregnant women, for example, are best advised to abstain from alcohol altogether, because even small amounts of regular drinking have been found to increase the risk for the unborn child. Certain health problems (such as liver disease) make even moderate drinking unsafe.

Your total number of drinks per week tells only part of the story. It is not healthy, for example, to have 12 drinks per week by saving them all up for Fridays. Neither is it safe to have even a few drinks and then drive. This raises the important question of intoxication.

2. LEVEL OF INTOXICATION

A second way of looking at your past drinking is to ask what level of intoxication you have been reaching. It is possible to estimate the amount of alcohol that would be circulating in your bloodstream, based on the pattern of
drinking you reported. Blood alcohol level (BAL) is an important indication of the extent to which alcohol would be affecting your body and behavior. It is used by police and the courts, for example, to determine whether a driver is too impaired to operate a motor vehicle.

To understand better what BAL means, consider the list of common effects of different levels of intoxication.

**Common Effects of Different Levels of Intoxication**

* .02% Light and moderate drinkers begin to feel some effect (about one drink).

* .04% Most people begin to feel relaxed.

* .06% Judgment is somewhat impaired; people are less able to make rational decisions about their capabilities, for example, driving.

* .08% Definite impairment of muscle coordination and driving skills is evident. There is an increased risk of nausea and slurred speech. Legally intoxicated in the state of Virginia.

* .10% Clear deterioration of reaction time and control is measurable.

* .20% Memory "blackout" may occur, causing loss of recall for events occurring while intoxicated.

* .30% Many people lose consciousness.

* .40% Fatal dose for a normal person, breathing stops and death occurs.

The two values indicated in section 2 are computer-calculated estimates of your highest (peak) BAL during a typical week of drinking and during one of your heaviest drinking days over the last month.

It is important to note that there is no known "safe" level of intoxication when driving or engaging in other potentially hazardous activities (such as swimming, boating,
hunting, and operating tools or machinery). Blood alcohol levels as low as .04 % mg - .06 % mg can decrease crucial abilities. The only safe BAL when driving is ZERO.

3. RISK FACTORS

It is clear that some people have a much higher risk of alcohol and other drug problems. This section provides you with some information about your own level of risk, based on your personal characteristics. "High risk" does not mean that one will definitely have serious problems with alcohol or other drugs. Neither does "low risk" mean that one will be free of such problems. High risk people, however, have greater chances of developing serious problems.

Tolerance

Your peak BAL, given in Section 2, is one reasonably good reflection of your level of tolerance for alcohol. If you are reaching BAL levels beyond the normal drinking social range (especially if you are not feeling some of the normal effects of lower BALs), it means that you have a high tolerance for alcohol. This is partly hereditary and partly the result of changes in the body that occur with heavier drinking.

Some people are proud of this tolerance -- the ability "to hold your liquor" -- and think it means they are not being harmed by alcohol. Actually, the opposite is true. Tolerance for alcohol may be a serious risk factor for alcohol problems. The person with a high tolerance for alcohol reaches high BALs, which can damage the brain and other organs of the body but has no built-in-warning that it is happening. Tolerance is not a protection against being harmed by drinking; to the contrary, it makes damage more likely because of the false confidence that it encourages. It is a little bit like a person who has no sense of pain. Pain is an important warning signal. People who feel no pain can seriously injure themselves without realizing it. It is the same with people who have a high tolerance for alcohol.
Many people believe that tolerance ("holding your liquor") means that a person gets rid of alcohol at a faster rate than others. Although people do differ slightly in how quickly their bodies can clear alcohol, tolerance has more to do with actually being at a high blood alcohol level and not feeling it.

OTHER DRUG USE

A person who uses other drugs besides alcohol runs several additional risks. Decreased use of one drug may simply result in the increased use of another. The effects of different drugs can multiply when they are taken together, with dangerous results. A tolerance to one drug can increase tolerance to another, and it is common for multiple drug users to become addicted to several drugs. The use of other drugs, then, increases your risk for serious problems. Based on the lifetime drug use that you reported during the interview, your risk in this regard was judged to be low, medium, or high.

FAMILY RISK

People who have a family history of alcohol or other drug problems among their blood relatives clearly are at higher risk themselves. The exact reason for this higher risk is unknown, but it appears that the risk is inherited to an important extent. People may inherit a higher tolerance for alcohol or a body that is particularly sensitive to alcohol in certain ways. In any event, a family history of alcohol problems increases personal risk.

4. NEGATIVE CONSEQUENCES

From your reports in your assessment session, two scores were calculated to reflect the current overall severity of your negative consequences from drinking. Furthermore, some of the specific problems you reported were also highlighted in this section of your personal feedback report.
AUDIT

The AUDIT is a scale devised by the World Health Organization to evaluate a person’s problematic involvement with alcohol. Higher scores reflect more recent problems related to drinking.

YAAPST

The YAAPST scale assesses recent alcohol related problems in a person’s life. We have listed the problems that you have reported with alcohol over the last month. These findings are given to you in order to help you better understand what areas of your life have recently been negatively effected by your drinking.
Motivational Feedback Report

1. According to your feedback report what percentage of U.S. men (if you are a man) or women (if you are a woman) drink fewer drinks per week than you?

_____ percentage

2. Answer true or false. Current research indicates that people who average 3 or more drinks per day have a much higher risk of health and social problems than other people.

_____
3. What are some of the common effects of alcohol at a .20% level? Indicate your answer in the space provided.


4. What are some of the common effects of alcohol at a .04% level? Indicate your answer in the space provided.


5. According to your personal feedback report your highest blood alcohol level reported over the last month was: Indicate this value in the space below


116
6. According to your report the only safe BAL when driving is ______? Indicate your answer in the blank.

7. According to your personal feedback report what are 3 risk factors associated with an increased risk for serious alcohol problems? Indicate your answer in the space provided:
   
   ____________________________
   ____________________________
   ____________________________

8. According to your feedback report the current overall severity of your recent problems related to drinking fall into the _____________ range. Indicate your answer in the blank space.

9. What are some of the negative consequences(s) that have happen to you over the last 2 months according to your reports on the YAAPST? Indicate the problem(s) in the space provided.
   
   ____________________________
   ____________________________
   ____________________________

10. According to your feedback report what is a good reflection of your tolerance? Indicate your answer in the space provided.
    
    ____________________________
APPENDIX H
COGNITIVE-BEHAVIORAL SKILLS TRAINING MANUAL

"I'VE GOT SKILLS" ENJOYING ALCOHOL AND AVOIDING BAD TIMES: A GUIDE TO RESPONSIBLE DRINKING

ADAPTED FROM THE ALCOHOL SKILLS TRAINING MANUAL

TABLE OF CONTENTS

SECTION I: BLOOD ALCOHOL LEVELS  Page 3

Blood Alcohol Level (BAL)
Tolerance
How to Calculate BAL

SECTION II: SETTING GOALS AND LIMITS  Page 9

Suggested Exercise: Your Drinking Limit

SECTION III: AWARENESS OF SITUATIONAL COMPONENTS OF DRINKING  Page 11

Antecedents of Drinking to much
Suggested Exercise: Your Cues for Drinking

SECTION IV: CELEBRATIONS and DRINKING MODERATION  Page 15

Suggested Exercise: Moderation Strategies

SECTION V: ASSERTIVE BEHAVIOR and REFUSING DRINKS  Page 19

Suggested Exercise: Practicing Assertive Responses
Refusing Drinks: An Application of Assertiveness

SECTION VI: CHANGING MOODS WITHOUT DRINKING  Page 23

Relaxation: A Special Technique For Feeling Better
Relaxation Technique Instructions
Visual Images for Relaxing
SECTION I: BLOOD ALCOHOL LEVELS

In this section we describe how much alcohol is in your bloodstream and how to estimate it. When it comes to the effects of alcohol on behavior and the body the amount of alcohol in the bloodstream is a major factor.

The first step towards responsible drinking is knowing how much you are drinking. Blood alcohol level (BAL) is the ratio of alcohol to blood in your bloodstream. BAL is usually reported as a percentage but is sometimes reported other ways; e.g., .10% = 100 mg = one part alcohol for every thousand parts of blood.

In Virginia a person is legally presumed to be "Driving While Intoxicated" if found to be driving with a BAL equal to or greater than .08 % mg. It is important to emphasize that any evidence of impaired driving with a lower BAL is still against the law and can result in arrest and conviction.

The intoxicating effects of alcohol occur because of alcohol’s physiological action on the brain. Alcohol’s effects are fairly predictable from the amount of alcohol in the bloodstream. Thus if you know a person’s BAL, you can roughly predict what effects alcohol will be having on you. On the next page is a list which indicates what effects alcohol has at several BALs:
*.02% Light and moderate drinkers begin to feel some effect (about one drink).

*.04% Most people begin to feel relaxed.

*.06% Judgment is somewhat impaired; people are less able to make rational decisions about their capabilities, for example, driving.

*.08% Definite impairment of muscle coordination and driving skills is evident. There is an increased risk of nausea and slurred speech. Legally intoxicated in the state of Virginia.

*.10% Clear deterioration of reaction time and control is measurable.

*.15% Balance and movement are impaired, vomiting may occur.

*.20% Memory "blackout" may occur, causing loss of recall for events occurring while intoxicated.

*.30% Many people lose consciousness.

*.40% Fatal dose for a normal person, breathing stops and death occurs.

Your BAL is determined primarily by three things: how much you drink, how fast you drink it, and how much you weigh. On the pages following are four tables to help you to determine the approximate number of drinks that it would take for you to reach various BALs within one, two, three and four hours. You can use these tables to determine limits for yourself.

Here's how to use the tables. Notice first of all that there are four tables. Table 1-2 will tell you what BAL you would reach by consuming a certain number of drinks within one hour. Table 1-3, 1-4, and 1-5 provide the same information for two, three, and four hours respectively. Furthermore, notice there are separate tables for men and women because all else being equal women tend to reach higher blood alcohol levels with the same amount of alcohol.
To estimate your BAL first round your weight to the nearest 20 pounds. If your weight falls in between listed weights go down to the next weight (e.g. if you weigh 170 go to 160). Doing so will slightly overestimate your BAL, but it's better to overestimate you BAL than to underestimate it.

There are several interesting aspects to these tables. First, and most importantly, your BAL is quite individualized due to your weight, sex, and how quickly you drink. The same number of drinks, drunk by different people in different ways, can result in markedly different BALs.

Also notice that the number of drinks that you can consume per hour to maintain a constant BAL decreases with each additional hour. The liver can only break down a small amount of alcohol each hour (about .016% BAL), and as you continue to drink, the alcohol builds up in your bloodstream. So, if your BAL reaches .10%, it will take approximately 6 hours for all the alcohol to be oxidized. Eating before and during drinking will slow down the effect of alcohol because the rate of absorption decreases, but eventually all the alcohol gets through.

People often believe that exercising will counteract the effects of alcohol, they think they can drink more without feeling the effects. This is not true. Alcohol is only broken down in the liver, at a standard rate, and exercise does nothing to speed up this process. It appears, in contrast, that exercise serves to distract people from the effects of alcohol. Further if a person is engaged in an activity they might drink less because they are involved in the activity (i.e. dancing, playing volleyball).

CAUTION: Do not use the BAL tables to assure yourself that you can legally drive! These are ESTIMATES only; real blood alcohol levels will vary a great deal from person to person, and could be considerably higher than the tables indicate. You should always estimate a lower BAL than the given number of drinks would indicate, to be sure that you are not above the point you want to be.

So, referring to the tables, how many drinks would it take for you to get to .50% BAL in 1 hour? 2 hours? Also figure your BAL in reverse if you drink 3 drinks in 2 hours what would be your BAL?
TO BE HANDED IN

SUMMARY SHEET

SECTION I: BLOOD ALCOHOL LEVELS

1. According to your reading what are some of the effects of attaining a blood alcohol level of .08%?

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

2. If a 180 pound male drank 5 drinks over a 4 hour period his blood alcohol level would be? Insert your answer in the blank space.

_____ %

3. If a 120 pound female drank 5 drinks over a 4 hour period her blood alcohol level would be? Insert your answer in the blank space

_____ %

4. According to your reading what is the effect of a blood alcohol level of .04%?

____________________________________________________________________________________

5. Calculate the number of drinks you could consume over a 4 hour period and still not exceed a blood alcohol level of .05%

_____ number of drinks
SECTION II: SETTING GOALS AND LIMITS

Now that you have some information on how much you've been drinking, how much alcohol it takes to get to various BALs, and what effect various BALs have on your behavior, you may decide to set a goal for yourself. In this section we describe ways of examining what you stand to gain from setting goals, and suggest a useful strategy.

What is a realistic and responsible level of drinking for you? ONLY YOU CAN DECIDE. You may wish to think about what you like to get out of drinking, as well as what you would like to avoid. Now is a time to review what you stand to gain from moderating your alcohol use. Do you wish to eliminate hangovers? To avoid being embarrassed in front of friends? To keep from gaining weight from empty calories? To avoid developing a pattern of drinking and a tolerance for alcohol that requires a lot of drinks to have a good time? Avoid all the long-term hazards of drinking?

Perhaps you wish to enjoy one or two drinks, feel a mild and pleasant relaxing effect, and maintain your control. You may wish to have little tolerance for alcohol so that one or two drinks will be enough. You may wish to abstain from alcohol altogether. Whatever your goal is, it's up to you entirely.

Some individuals do not feel that they have a "problem" with drinking, and therefore see no reason to set a goal or limit. We wish to emphasize that appropriate drinking limits are good for everyone who drinks. In fact, most people naturally drink to only a certain point, then stop. Psychologist Robert Apsler has described different strategies people typically use when drinking, such as drinking a set amount, drinking for a certain sensation, drinking as much as friends do, and drinking until one gets a feeling that one should stop. You may reflect on the BAL you usually achieve before you call it quits and what strategy you typically use. Examine your drinking levels and styles, and experiment with trying a new limit based on BALs. Choose a limit that will maximize what you like about drinking, and minimize the negative consequences.

Rather than setting a limit based on the onset of negative consequences, you may wish to find the point of diminishing returns," the point at which one more drink will have no positive effect, for example, but will make you sleepy rather than relaxed, or confused instead of energized. It is just as important to ask yourself: "Will one more drink lead to a better time/" as it is to ask
yourself: "Can I have one more drink without paying for it later?"

We recommend a BAL limit of .05%. This is a reasonable limit, we feel, because it allows you to enjoy some of the effects of alcohol without compromising your ability to function safely. However you will have to decide what are hazardous drinking conditions for you. We recommend that no drinking take place before driving. Driving after drinking is extremely hazardous, and 50% of all traffic deaths involve alcohol.

SUGGESTED EXERCISE: YOUR DRINKING LIMIT

These are some steps for setting drinking limits:

1. Using the information about BAL and alcohol effects, decide what you think you upper limit should be for BAL on any occasion (the highest BAL you think you should allow yourself to reach at any one time).

Write it here: _____%

2. Using the BAL charts determine the number of drinks that it would take for you to reach this limit in ONE hour:

_____ drinks in ONE hour

3. Now determine the number of drinks it would take for you to reach this limit within TWO hours:

_____ drinks in TWO hours

4. Find your limit for THREE hours:

_____ drinks in THREE hours

5. Find your limit for FOUR hours:

_____ drinks in FOUR hours

The four numbers from step 2 to step 5 represent your
drinking limit for different time periods. You may decide to revise this limit in the future. Be sure to consult the BAL effects and BAL charts.
SECTION II: SETTING GOALS AND LIMITS

1. According to your reading we recommend that you not exceed a blood alcohol level of what? Insert your answer in the space provided.
   ______ blood alcohol level

2. What is the upper blood alcohol level you set for yourself?
   ______ blood alcohol level

3. How many drinks over a 2 hour period could you consume and not exceed this upper limit? Insert your answer in the space provided.
   ______ number of drinks over a 2 hour period

4. How many drinks over a 4 hour period could you consume and not exceed this upper limit? Indicate your answer in the space provided.
   ______ number of drinks over a 4 hour period.

5. What are two of the strategies Psychologist Robert Apsler has described that people use to drink to a certain point?

   ____________________________________________________
   ____________________________________________________
   ____________________________________________________
SECTION III: AWARENESS OF SITUATIONAL COMPONENTS OF DRINKING

In this section we explore how the environment can affect drinking. The management of situations (environment) is critical for drinking moderation. The environment affects you through your prior experience or learning. The first step in understanding the impact of the environment is to become aware of specific cues for drinking. We call these "antecedents".

ANTECEDENTS OF DRINKING TO MUCH

Factors which have been shown to increase the chances of drinking to much are called antecedents of drinking to much. Antecedents of drinking to much are not direct causes for drinking to much or alcohol problems; rather, they are subtle factors that do increase the probability of drinking. These factors are usually present in situations in which it is easy to overdrink. We call these factors "cues". If you can identify your cues then you'll have warnings to work with-- and a chance to make some decisions and perhaps make some changes. Here are some general categories.

1. The people you are with. Heavy drinkers subtly increase the drinking rate of those around them. Many research studies have demonstrated that people will drink more in the presence of other people who are drinking. People who force drinks, buy rounds, ridicule moderation, or engage in drinking contests are likely to increase your alcohol consumption. Drinking alone can also be high-risk for some people; sometimes friends will help you to moderate. Think about the times when you overdrink. Who are the people with you? What are they doing?

2. The place where you are drinking. Research also shows that people tend to drink more and faster in certain places. A particular setting, including the room itself, lighting, fixtures, etc., can become associated with drinking to much. Likewise, there are setting where you tend to drink less. Do you notice a difference in your drinking according to the place you are in (for example, bars or a keg party)?

3. The time and day. People are more likely to overdrink on certain days or at certain times--weekends, happy
hour, etc. Have you noticed any specific hours or days on which you tend to overdrink (e.g. Friday Happy Hour)?

4. **Hunger and thirst.** Some people find that they drink more when they are hungry or thirsty, or both. Is this true for you? Ironically, alcohol does not satisfy real thirst. It actually has a dehydrating effect on the body; you actually lose bodily fluids when alcohol is consumed. Alcohol does not satisfy real thirst.

5. **Special situational factors.** Some people report unusual, but quite powerful situations in which they drink without thinking; for example, have a lot of money or alcohol available, being in automatic or boring activities, especially those involving waiting, such as doing laundry, playing pool or cards, etc.

6. **Emotional Factors.** These include depression, boredom, frustration, anger, conflict, and tension; also euphoria, relaxation, excitement, etc. Again, we are not saying that emotions "cause" drinking to much. Rather, some people habitually overdrink when they feel certain way; for example, feeling frustrated. If you become aware of drinking to much when you feel frustrated, this awareness will provide a cue or signal to stop and think before drinking to much.

Here is a list of more specific factors which tend to increase the likelihood of drinking to much. Which apply to you?

- Drinking more in uncomfortable or unfamiliar situations, such as a first date, or at a large party when you know few people.
- Drinking after work or school, especially after hard days.
- Drinking after a stressful or emotional experience.
- Drinking beer from kegs or pitchers.
- Drinking wine or liquor from the bottle.
- Drinking shots of liquor or beer funnels.
- Drinking during automatic or boring activities.
Drinking with heavy drinkers.

Drinking when thirsty or hungry.

Drinking with those who pressure you to drink faster or more.
SUGGESTED EXERCISE: YOUR CUES FOR DRINKING

1. Where are the places that you drink heavily?
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

2. Which people do you drink heavily with?
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

3. What are the times and days when you drink the most?
   __________________________________________________________
   __________________________________________________________

4. List the activities that you engage in when you drink the most.
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

5. What are your most common moods when you drink the most? Describe these feelings:
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________
6. Focusing specifically now on the occasions that you drank the most, could you take a "vacation" from (avoid) any of the places or people involved in your heavy drinking? _____ (yes/no)

Which ones? ________________________________

________________________________________

7. What are the places where you are likely to drink less?

________________________________________

________________________________________

________________________________________

8. Who are the people with whom you are likely to drink less?

________________________________________

________________________________________

________________________________________

9. What are the times and days when you are likely to drink less?

________________________________________

________________________________________

________________________________________
TO BE HANDED IN

SUMMARY SHEET

SECTION III: AWARENESS OF SITUATIONAL COMPONENTS OF DRINKING

1. According to your reading what are 3 typical antecedents to drinking to much? Indicate your answers in the space provided.

___________________________________________________________________________

___________________________________________________________________________

___________________________________________________________________________

2. Where are some places that you drink heavily?

___________________________________________________________________________

___________________________________________________________________________

3. Which people do you drink heavily with?

___________________________________________________________________________

___________________________________________________________________________

4. What are the places where you are likely to drink less?

___________________________________________________________________________

___________________________________________________________________________

5. Who are the people with whom you are likely to drink less?

___________________________________________________________________________

___________________________________________________________________________
SECTION IV: CELEBRATIONS AND DRINKING MODERATION

Drinking cues, such as people, places and moods, usually come in groups. You may find yourself surrounded by people and events that all suggest drinking. These situations are the most likely occurrences of heavy drinking, or drinking beyond a goal or limit. We call these situations "High Risk". For college students the most common one is probably a party. Lets look at a party in some detail.

Imagine yourself celebrating a friends acceptance into graduate school, or at a tailgate party or at a party on a Friday night with friends. How might you be feeling? Probably happy, excited, loose, and without concerns. Who would be with you? Close friends, people you enjoy being around? Do they drink? What activities would be planned for the evening? How long would the party last? Can you imagine the sights, sounds, and feelings of the experience? What role would alcohol play in these situations?

Celebrations are often one of the most difficult situations for people attempting to moderate their drinking. Parties and celebrations are considered "high-risk" situations, because many of the strongest cues for heavy drinking (people, places, moods) come together in these situations.

Consider the example of Karen, a freshman at a large university. Karen celebrates the end of exams every semester by attending a large party hosted by several of her friends. These parties are usually wild!! Loud music, dancing, people talking and laughing. There’s always several kegs, and one of Karen’s friends brings a blender so he can make the strawberry daiquiris that Karen loves.

Karen looks forward to the chance to cut loose at the end of each quarter, and she always has a great time. However, after the last party Karen passed out on the lawn, and later her friends reported that she had really made a fool of herself spilling daiquiris all over the furniture, and vomiting in the bathroom. Therefore, Karen is hoping to be able to drink less at the upcoming end-of-the-year party, while still having a great time.

What obstacles is Karen likely to encounter in meeting her goal? What steps might she take to overcome those obstacles? What would you do?
The first step is to recognize that a particular situation poses a real threat (high risk) for drinking too much. Once aware, the next step is to be aware of the cues for heavy drinking that will be present in the situation. For Karen, these include being with close friends who drink, having lots of alcohol (specifically her favorite drink) available, and being in an environment (loud music, dancing, etc.) which has been associated with heavy drinking for her in the past. In addition, Karen's positive mood (her desire to cut loose, celebrate the end of exams, and have a great time) makes it difficult for her to moderate her drinking in this situation. This is true for many people in celebratory situations.

How do you determine what effects you want from drinking in a celebration? How do you decide when to stop drinking? In Karen's case, she wanted to enhance her enjoyment of the party without getting sick, passing out, or doing something foolish. She also liked being "up" and dancing, but not slowed down and tired. Therefore, Karen wanted to set a limit for her consumption that would maximize the pleasant effects while minimizing the negative effects of alcohol (the "point of diminishing returns" discussed earlier). She also wanted to use good judgement at the party, and not end up somewhere uncomfortable and dangerous.

She choose a limit of .05% BAL, and calculated how many drinks she could have over a 4 hour period in order to stay below this limit. For Karen, at 120, this was a limit of 3 drinks. How many drinks would that be for you?

MODERATION TECHNIQUES

For Karen, she has completed all but the critical final step. She has identified cues for drinking in a particular situation, evaluated her expectations about alcohol in that situation, and set a limit. But she still needs to know how to attain her goal.

What strategies would you use to stay below a limit? What things have you tried in the past? Although different strategies work for different people at different times some general strategies can be used in many situations. Planning in advance what strategies to use makes it easier for you to stay within your limits and have a good time.

Here are some specific techniques for keeping your alcohol at or below a limit you have set for yourself:
Plan ahead. Think about the situation beforehand. Set a reasonable limit prior to the situation itself.

Keep track. The most basic technique is to be aware of your alcohol consumption. Once you are aware of how much you are drinking, try:

Slowing down. One way to stay within your limit is to slow down your alcohol consumption. First, count the number of sips you take to finish a drink and how long you took. To slow down, increase the number of sips to finish another drink. We recommend that you get at least 12 sips out of each drink. Between sips, put the drink down and take your hand away from it.

Selecting different types of drinks. People who obtain high BALs tend to drink beverages with high alcohol content, such as malt liquor, straight liquor, etc. Choose drinks that have less alcohol in relation to their volume; for example, highball (with lots of mixer), beer, or table wine. Some drinks, however, are so tasty (sweet, fruity beverages, milk shake drinks, wine coolers) that most people drink them fast. Be cautious of drinks you tend to gulp; try alternative drinks, those with an unusual or even somewhat unpleasant taste for you. Be careful, however, that unpleasantness is not the sting of concentrated alcohol.

Substitute or alternate non-alcoholic beverages. Many people report that they have just a good time when they alternate non-alcoholic drinks with alcoholic drinks over an evening. By using this strategy you can attain a BAL that still allows you to get pleasurable effects from alcohol.

Drink for quality instead of quantity. Many people report that they drink because they "like the taste", yet purchase cheap drinks in order to get "more for their money". Trying treating yourself to a bottle of imported beer or a glass of wine, rather than getting a bargain. Enjoy the taste, spend a little more per drink, but drink less (and maybe even spend less).

Spacing your drinks. The basic idea behind spacing is to decide that you will allow yourself only one drink within a certain amount of time. Refer back to your setting limits worksheet. According to your drinking limit, what is the maximum number of drinks that you will consume in four hours?

Most social drinkers take 20-30 minutes to finish a drink. Your goal for average drinking time should probably not be
less than 30 minutes per drink (i.e. two drinks per hour). How does your calculation compare to this?

The main point is to make your drinks last longer by sipping slowly, enjoying each sip, taking smaller sips, and allowing more time to pass between finishing a drink and starting a new one.
SUGGESTED EXERCISE: MODERATION STRATEGIES

How can you limit your drinking and keep your good mood? Review the strategies noted above. Are you willing to give one or more of them a try? We suggest you pick a particular situation, and set a specific goal. To meet your goal, select a strategy or strategies you think will work best for you.

List below those strategies you plan to try:

______________________________
______________________________
______________________________
______________________________
______________________________
______________________________
TO BE HANDED IN

SUMMARY SHEET

SECTION IV: CELEBRATIONS AND DRINKING MODERATION

1. According to your reading a high risk situation is what?

2. What are 4 moderation techniques that people use when drinking? Indicate your answer below.

3. If you wanted to moderate your drinking what are some strategies that you might use? Indicate your answer in the space provided.

4. In the case of Karen what are 2 of the obstacles she faces in moderating her drinking?

5. According to your reading why are parties and celebration considered high risk situations for college students?

   Indicate your answer below.
SECTION V: ASSERTIVE BEHAVIOR AND REFUSING DRINKS

Assertive behavior is the ability to appropriately express what you want, when you want it, without feeling bad about it. It is an alternative to "liquid courage." Assertive is "real courage." When people feel insecure in social situations, they are often less "assertive" than they could be. That is, they are unwilling or unable to express themselves, feeling they may make a fool of themselves. They may have never learned that it is okay to ask for what they want. Instead, they replace having the skill of assertive behavior with the use of alcohol. Fortunately, assertive behavior can be learned! Once you learn to be assertive, you will find it easier to refuse drinks. We have found that those who are unassertive tend to have difficulty saying "no" or "that's enough" when they would rather not drink. However, assertive behavior is often confused with aggressive behavior; the distinctions between these behaviors are addressed next.

DEFINITIONS: ASSERTIVENESS, NONASSERTIVENESS, AGGRESSIVENESS

Assertive behavior enables you to act in your own best interests, to stand up for yourself, to express your opinions, feelings and attitudes honestly, without undue anxiety and without putting others down. The assertive person exercises his or her rights without denying or violating the rights and feelings of others. Being assertive increases your self-esteem; it involves stating personal preferences in a straightforward manner, in a way that encourages others to acknowledge them. Assertiveness does not guarantee "winning" in situations, but it does increase the likelihood that a reasonable solution or compromise will occur, and that your goals will be obtained.

Nonassertive or passive behaviors are those which are self-denying, restrained, and inhibited. Nonassertive persons are submissive in social situations, often experiencing a high degree of anxiety. Nonassertive persons do not express their preferences, and thus allow others to make decisions or choices for them, generally avoiding situations involving confrontation. Nonassertive people allow their rights to be ignored, and they humbly yield to the preferences of others. Nonassertiveness can be humiliating. The person feels helpless, controlled, and bitter because he or she rarely expresses wants and thus is unlikely to achieve goals. Feelings of self-hatred and
resentment toward others are often consequences of a lack of assertive self-expression.

Unlike assertive behaviors, aggressive behaviors include hostile words or actions which coerce others to give in to your preferences. The aggressive person is interested in "winning," and attempts to achieve this goal by any means possible, including putting others down, and hurting or humiliating them. Although aggressive people may achieve their goals, the price for "winning" can be very high indeed. The reactions of others to an aggressive person are generally ones of dislike, hostility, and counter-aggression. Aggressive persons may find that others begin avoiding them and reacting toward them in a nasty, sarcastic, or openly hostile manner. Social isolation and chronic conflict may often be the price you pay for getting your way at the expense of others.

THE COMPONENTS OF ASSERTIVE BEHAVIOR

Behavioral scientists have discovered a number of quite specific elements which constitute an assertive act. What is said is not as important as how it is said (half or all communication is nonverbal), or when or where. With regular practice, most individuals find these elements quite easy to learn. Here is a list of the most important components:

EYE CONTACT: Looking directly into the eyes of other people when you are speaking to them is an effective way of declaring sincerity about what you are saying. People will have no doubt that your are speaking directly to them.

BODY POSTURE: The weight of your messages will be increased if you face the person without slouching, and holding your head erect.

PROXIMITY: How near you are to the person you are speaking to often adds weight to your messages as well. Stand or sit appropriately close for how well you know each other. Leaning forward shows interest in other people's responses to your messages (even if their "feedback" is only expressed nonverbally), and thus they don't feel as though they are being lectured to. (Imagine asking someone to marry you from across the room. No matter how assertive you are, he or she will likely say no)

GESTURES: A message accented with appropriate gestures takes on an added emphasis (but overenthusiastic gesture can be a distraction!).

143
FACIAL EXPRESSION: Ever see someone trying to express anger while smiling or laughing? It just doesn't come across. Effective assertions require an expression which corresponds to the message.

VOICE TONE, INFLECTION, VOLUME: A whispered monotone will seldom convince another person of your seriousness, whereas a shouted insult will make him or her defensive. A level, well-modulated conversational statement is convincing without being intimidating.

TIMING: Spontaneous expression will generally be your goal; hesitation may diminish the effect of an assertion. Judgment is necessary, however, to select an appropriate occasion; for example, in some instances choosing to speak to a person in private rather than in front of others may lessen the need he or she may feel to respond defensively.

CONTENT: We waited to introduce this obvious dimension of assertiveness to emphasize our earlier statement: what we say is clearly important, but it is often less important than most of us generally believe. We encourage a fundamental honesty in interpersonal communication and spontaneity of expression. In our view, that means saying directly, "I'm damn mad about what you just did!" rather than "You're and S.O.B.!" People who have hesitated for years because they "didn't know what to say" have found the practice of saying something, to express their feelings at the time to be valuable step toward greater spontaneous assertiveness.

Accepting Responsibility and "I" Statements: We do encourage you to express your own feelings-- and to accept responsibility for them-- by using "I" statements (e.g., I feel..."; I think..."; "I don't like ...") Note the difference in the above example between "I'm mad" and "You're an S.O.B." It is not necessary to put the other person down (being aggressive) in order to express your feeling (being assertive). Using "I" statements and avoiding "you" statements (e.g., "You should do this..."; "You're an idiot..."; "You have no idea what you are talking about, and furthermore...") is a technique for taking responsibility for your feelings, and being less blaming of others. You will find that people respond less defensively when you speak in this manner.

Assertive behavior offers and excellent alternative for expressing angry feeling. In the description above, assertiveness was contrasted not only with passive or nonassertive behavior, but with aggressive behavior as well. Assertiveness is an alternative to either passivity or
aggression. Assertiveness allows you to be comfortable in expressing how you feel, particularly when conflicts arise, without making other people angry and defensive. You do not need alcohol as an "excuse" to be assertive. When you are feeling angry, for example, think about your expectations about the effects of alcohol. Would drinking really solve your problem? Or would you rather learn to be in control and be able to express yourself without creating more problems.
SUGGESTED EXERCISE: PRACTICING ASSERTIVE RESPONSES

For each of the following examples of drinking situations, fill in an aggressive response, a nonassertive response, and an assertive. Your goal is to not drink anymore on that occasion. Use the descriptions of assertive behavior to help you. Remember to use "I" statements and not "you" statements.

#1 You are at a party and your friend is getting quite drunk. You have had two drinks, and have to drive home in about an hour. You don't want to drink anymore. Your friend looks at you and says, "Have another one! Don't be a bore!" You say:

(aggressive) ______________________________
(nonassertive) __________________________
(assertive) ______________________________

#2 You are at a party. Most people are drinking heavily. One of your friends suggests that a group of you play a drinking game that involves chugging. Most of the people there seem to like the idea. You say:

(aggressive) ______________________________
(nonassertive) __________________________
(assertive) ______________________________

3. You have been out with a group of friends at a club, drinking and listening to music. You drove to the club with friends in your car, but you are feeling that you should not be the one to drive home. As you are leaving the club in a group and approach the car, you say:

(aggressive) ______________________________
(nonassertive) __________________________
(assertive) ______________________________
REFUSING DRINKS: AN APPLICATION OF ASSERTIVENESS

Notice that the act of refusing a drink is often an assertive behavior. Many people put enormous pressure on us to drink with them. Sometimes the pressure is obvious ("Come on, have a drink!"); at other times the pressure is quite subtle: nothing is said outright, but you know that if you don't drink others will notice.

Most of us feel quite bad when we disappoint people—it's something we were trained to feel since early childhood. And when we are busy getting along with people, we usually fail to realize how much we can be influenced against our better judgment. In most cases social influences is not a problem. However, when you are attempting to change your drinking pattern, refusing drinks can be difficult.

When you refuse to join someone in drinking in a social situation, how do you feel? What are you thinking? Do you feel embarrassed? Do you feel self-conscious? Guilty? Not as good or tough? Do you think that the person will not like you? Think you are weak? Not a real thinker? A bore? No Fun?

Now examine the truth of your thoughts. Are you really a bore? Or not good enough? Or a light weight drinker? When people examine their thoughts about disappointing people, they usually find that those thoughts don't make much sense. We do not want to feel bad about letting others down, but we are not weak or boring.

In addition, examine the truth about the properties of alcohol. Will drinking more really transform you into the exciting, fun person who likes to party? Even temporarily?

Through developing skill and control in your drinking you will become aware of this powerful social influence. With practice, you can also effectively deal with it. That's why assertive behavior is so important, and why it can be so useful when you are moderating your drinking style.
SECTION V: ASSERTIVE BEHAVIOR AND REFUSING DRINKS

1. What is an assertive behavior? Indicate your answer in the space provided.

________________________________________________________________________
________________________________________________________________________

2. What is an aggressive behavior? Indicate your answer in the space provided.

________________________________________________________________________
________________________________________________________________________

3. What are 3 components of assertive behavior. Indicate your answer below.

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

4. For the following situation list an example of an aggressive, a nonassertive and an assertive response.

You are at a party and your friend is getting quite drunk. You have had two drinks, and have to drive home in about an hour. You don’t want to drink anymore. Your friend looks at you and says. “Have another one! Don’t be a bore! You say
(aggressive)

(nonassertive)

(assertive)
SECTION VI: CHANGING MOODS WITHOUT DRINKING

Imagine yourself in a situation where you’re down. Maybe you’ve done poorly on an exam, or lost your job. Maybe you feel pressured to succeed or to live up to others’ expectations for you. Maybe someone you care about has moved away, or you’ve had an argument with a friend. Imagine your thoughts and feelings in these situations. Do you feel sad, depressed, angry, lonely? What are you thinking?

People feel down for many reasons, and they often report very similar experiences of the situation. For example people report feeling less energy and less joy in fun things. They might feel overwhelmed, angry, impatient, frustrated, or insecure. Often their appetite and sleep are disturbed, and they may feel embarrassed about feeling down and blame themselves for their problems, thinking "this is all my fault" or "I’m a failure". These thoughts and feelings are made worse by the worst one of all: "It will always be this way and will never get better!" When faced with these negative thoughts and feelings, people want to feel better, and quickly! Alcohol is often used in an attempt to get rid of these thoughts and feelings.

Everyone feels low once in a while. What can you do instead of drinking? Again, there are many different answers for different people in different situations. The first step, as noted above, is to examine your expectations of what alcohol will do for you. Most research evidence suggests alcohol is viewed as a temporary solution to feeling bad, and often as the only solution.

It is far better to deal directly with negative emotions and do things that allow you to feel better without threatening your health and well-being. A number of pleasant (non-stressful) activities have been shown to help people feel better. Some work better than others, depending on the person. For examples:

- going for a walk, or doing some vigorous exercise
- calling a sympathetic friend
- going to see a movie
- seeing some beautiful scenery
- listening to music
- reading pleasant novels or plays
- going to a restaurant
- getting a massage
Sometimes when people feel down, however, they are not in the mood to "do" things. This may be a time to enlist the help of others to get you going.

Another approach to feeling better is solving the problem causing you to feel bad; for example:

- leave a situation that's uncomfortable
- calling a sympathetic friend
- going to see a movie
- seeing some beautiful scenery
- listening to music
- reading pleasant novels or plays
- going to a restaurant
- getting a massage

In fact, many of the strategies used to manage drinking can also be used to manage low moods. You can avoid situations that make you feel bad, and you can make changes in situations so that they affect you differently. For example, you can use assertiveness skills, learned in the last section, to stand up for your rights and clear up problems with friends and family.

Always remember to ask yourself: Will Alcohol Really Solve Problems?

RELAXATION: A SPECIAL TECHNIQUE FOR FEELING BETTER

Another useful skill for coping with stress and negative feelings is the ability to relax when you sense your body is tense. Relaxation is a process of reducing your mental and physical tension to feel better. By relaxing yourself, your moods are less dependent on the behavior of other people or events and more dependent on your own skills.

Relaxation becomes easier with practice. Once you are able to achieve a relaxed state when you want to, it becomes a powerful skill. Relaxation can be used "on the spot" when you feel stressed and unhappy. We will first describe a typical relaxation technique, and then describe how you apply it.
RELAXATION TECHNIQUE INSTRUCTIONS

Before relaxing, it is important to have an experimental and nonjudgmental attitude. Relaxation seldom comes right away, and it is vital that you do not become critical of the technique and give up. Contrary to common belief, even relaxation is a skill we need to practice to do easily. Try this technique (from Herbert Benson's book, The Relaxation Response) and see what happens. Everyone's experience is a little different

1. Sit quietly in a comfortable position. Be sure to loosen uncomfortable, binding clothes. Be in a place where you will not be disturbed. This technique should not be practiced within two hours after eating, as digestion can interfere with relaxation.

2. Close your eyes

3. Deeply relax all your muscles, beginning at your feet and progressing up to your face. Do an "inventory" of tension in your body, finding the tenses parts (feet, legs, back, jaw, shoulders, face etc.), and relaxing each in turn.

4. Breathe through your nose. Become aware of your breathing. As you breathe in say, "in" silently to yourself. As you exhale say, "out".

5. Continue for fifteen minutes. You may open your eyes to check the time but do not use an alarm. When you finish, sit quietly for several minutes, at first with closed eyes and later with opened eyes.

6. Do not worry about whether you are successful in achieving a deep level of relaxation. Maintain a passive attitude and permit relaxation to occur at its own pace. When distracting thoughts occur, acknowledge them, let the pass, and continue repeating "In. Out."

After you are skilled, the responses should come with little effort. For most people, ease with the technique comes after two weeks of daily practice.
VISUAL IMAGES FOR RELAXING

You can also relax with other strategies. Another method for quick relaxation involves imaging. For example, while you are sitting quietly and breathing slowly and deeply, imagine yourself putting down a load. Imagine yourself carrying all your responsibilities in a big sack on your shoulders. As you begin to relax, begin to slowly and methodologically put down the heavy load. Or, imagine yourself as a puppet. Think of a puppet standing up straight, being held up by taut strings that make it move. If the puppeteer lets go of the strings, the puppet will crumple into a totally relaxed heap. Now: your brain is the puppeteer, and it can let go of you whenever it wants to. As you relax, imagine letting go of the puppet strings, and as the puppet goes limp, you limp. Some individuals imagine being a balloon, inflated to full capacity, tight and tense. As you breathe and relax, imagine that you are letting air escape from the balloon. As more and more air escapes, the tightness decreases, the tension disappears. You become limp and relaxed.

Try to think of other relaxing images. Some people enjoy thinking of clouds (floating peacefully in the sky) or rivers (drifting lazily through a peaceful glade). Find an image of relaxation that you can really feel. Imagine yourself as a kite, unwinding and drifting. Imagine yourself as an ice cube, slowing melting. An eagle soaring in a canyon. A feather tossed in the wind. Use of these images, or use one or more of your own.

Remember, you will need to practice relaxation for awhile (once or twice a day for one to two weeks), however, to really master the ability of achieving a relaxed state. Once skilled, you can try relaxing in different places. Take a mental inventory of your body tension during the days -- perhaps at work or at lunch. See if you can relax quickly and effortlessly by this or any other method wherever you are. Once you can relax with ease, you can begin to apply your new skill while involved in daily activities. Try relaxing, for example, while reading the paper. Here are some other slow activities in which you can begin: watching television, a movie, or a play; playing cards, chess, other table games; waiting in line; riding a bus.

Once you can relax during these slower activities, begin relaxing during some more demanding activities such as shopping, doing housework, fixing the car, listening to a lecture in class, or having a conversation.
Finally, begin using your relaxation skills during the fastest, most demanding activities you do, including those situations in which you feel tense and stressed out, such as while running to catch a bus; rushing to finish a project; playing tennis, football, or other sport; taking an exam; talking to a very angry person. You can be alert and relaxed at the same time.
SECTION VI: CHANGING MOODS WITHOUT DRINKING

1. What are 2 activities that have been shown to help people feel better. List 2 activities in the space provided.

________________________________________________________________________

________________________________________________________________________

2. According to your reading in regards to solving problems in your life. An important question you should always remember to ask yourself in regards to alcohol is what? Indicate your answer below.

________________________________________________________________________

3. Relaxation is what?

________________________________________________________________________

________________________________________________________________________

4. What are 2 images that you associate with relaxing? Indicate your answer in the space provided.

________________________________________________________________________

________________________________________________________________________

5. In order to get good at relaxing how often and for about how long will you have to practice?
COPING STRATEGIES SUMMARIZED

Here is a list of behaviors that college students report engaging in when they wish to limit the amount they drink. No one behavior is most effective for everyone in setting limits. Thus, it is important for you to experiment with different ways to set limits on your drinking in order to identify what will work best for you. We hope that the information that we have provided you with will be useful in helping you make decisions about your drinking.

Coping Behaviors

Keep track of the number of drinks I consume.

Avoid drinking with those who pressure me to drink.

Confine drinking to certain times of the day.

Substitute other means for feeling friendly or sociable.

Purposively take slow slips on my drink.

Avoid drinking during boring or repetitious activities.

Not keep alcohol at home.

Use body sensations to let me know when I should slow my drinking down.

Eat before drinking.

Drink beer from a bottle or can instead of kegs or pitchers.

Participate in activities as tennis, running, etc., when I feel like drinking.

Limit the amount of money I carry.

Avoid playing drinking games.

Set a limit on the number of drinks I have in a sitting.

Drink nonalcoholic beverages.

Select drinks I drink slowly.
Drink only after a certain hour in the day.
Set time limits for how long I’ll drink.
Avoid drinking with heavy drinkers.
Avoid drinking after stressful events.
Select drinks lower in alcohol content.
Engage in activities during drinking such as dancing, talking, etc.
Avoid drinking in places where I overdrink.
Reward myself for not drinking.
Drink less when I am going to drive.
Refuse unwanted drinks.
Stop drinking any alcohol for some period of time.
Ask for family support to limit my drinking.
Think about the consequences of my drinking.
Avoid drinking on occasions when I tend to overdrink.
Punish myself for failing to limit my drinking.
Substitute other means for dealing with stress, depression, and anxiety.
Avoid drinking wine or liquor from the bottle.
Get friends to help me limit my drinking.
Put my drink down in between sips.
APPENDIX I
The AUDIT Questionnaire

For each question circle one response that describes your situation?

1. How often do you have a drink containing alcohol?
   (0) Never
   (1) Monthly
   (2) Two or four times a month
   (3) Two to three times a week
   (4) Four or more times a week

2. How many drinks containing alcohol do you have on a typical day when you are drinking?
   (0) 1 or 2
   (1) 3 or 4
   (2) 5 or 6
   (3) 7 to 9
   (4) 10 or more

3. How often do you have six or more drinks on one occasion?
   (0) Never
   (1) Less than monthly
   (2) Monthly
   (3) Weekly
   (4) Daily or almost daily

4. How often during the last year have you found that you were not able to stop drinking once you had started?
   (0) Never
   (1) Less than monthly
   (2) Monthly
   (3) Weekly
   (4) Daily or almost daily
5. How often during the last year have you failed to do what was normally expected from you because of drinking?

(0) Never
(1) Less than monthly
(2) Monthly
(3) Weekly
(4) Daily or almost daily

6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?

(0) Never
(1) Less than monthly
(2) Monthly
(3) Weekly
(4) Daily or almost daily

7. How often during the last year have you had a feeling of guilt or remorse after drinking?

(0) Never
(1) Less than monthly
(2) Monthly
(3) Weekly
(4) Daily or almost daily

8. How often during the last year have you been unable to remember what happened the night before because of drinking?

(0) Never
(1) Less than monthly
(2) Monthly
(3) Weekly
(4) Daily or almost daily

9. Have you or someone else been injured as a result of your drinking?

(0) No
(2) Yes, but not in the last year
(4) Yes, during the last year
10. Has a relative or friend, or doctor or health worker, been concerned about your drinking or suggested you cut down?

(0) No
(2) Yes, but not in the last year
(4) Yes, during the last year
APPENDIX J
DRUG USE QUESTIONNAIRE

Circle Yes or No for each substance

Have you ever used:

Crack YES NO
Cocaine YES NO
Heroin YES NO
Methadone YES NO
Opium YES NO
LSD (Acid) YES NO
Marijuana YES NO
Hash YES NO
Amphetamines YES NO
Stimulants YES NO
Diet Pills YES NO
Tranquilizers YES NO
Barbiturates YES NO

Have you used any of the substances below for (more than 3 months of at least once per week)

Circle Yes or No for each substance below:

Marijuana YES NO
Hash YES NO
Amphetamines YES NO
Stimulants YES NO
Diet Pills YES NO
Tranquilizers YES NO
Barbiturates YES NO

165
APPENDIX k
Listed below are a number of behaviors that individuals report engaging in when they want to control their drinking.

Indicate on the scale provided how confident you are that you can perform the given behavior in order to avoid drinking no more than ____ drinks over a 4 hour period.

I would be able to perform the following behavior in order to avoid drinking no more than ____ drinks over a 4 hour period.

<table>
<thead>
<tr>
<th>Behavior</th>
<th>not at all confident</th>
<th>very confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keep track of the number of drinks I consume</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>Avoid drinking with those who pressure me to drink</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>Confine drinking to certain times of the day</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>Substitute other means for feeling friendly or sociable</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>Use body sensations to let me know when I should slow my drinking down</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>Eat before drinking</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>Participate in activities such as tennis, running, etc., when I feel like drinking</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>Limit the amount of money I carry</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>Set a limit on the number of drinks I have in a sitting</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>Avoid playing drinking games</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>Drink nonalcoholic beverages</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
</tbody>
</table>
12. Drink only after a certain hour in the day

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>20</th>
<th>40</th>
<th>60</th>
<th>80</th>
<th>100</th>
</tr>
</thead>
</table>

I would be able to perform the following behavior in order to avoid drinking no more than ____ drinks over a 4 hour period.

<table>
<thead>
<tr>
<th>Behavior Description</th>
<th>not at all confident</th>
<th>very confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Set time limits for how long I’ll drink</td>
<td>0 20 40 60</td>
<td>80 100</td>
</tr>
<tr>
<td>14. Avoid drinking with heavy drinkers</td>
<td>0 20 40 60</td>
<td>80 100</td>
</tr>
<tr>
<td>15. Avoid drinking after stressful events</td>
<td>0 20 40 60</td>
<td>80 100</td>
</tr>
<tr>
<td>16. Reward myself for not drinking</td>
<td>0 20 40 60</td>
<td>80 100</td>
</tr>
<tr>
<td>17. Refuse unwanted drinks</td>
<td>0 20 40 60</td>
<td>80 100</td>
</tr>
<tr>
<td>18. Ask for family support to limit my drinking</td>
<td>0 20 40 60</td>
<td>80 100</td>
</tr>
<tr>
<td>19. Think about the consequences of my drinking</td>
<td>0 20 40 60</td>
<td>80 100</td>
</tr>
<tr>
<td>20. Substitute other means for dealing with stress, depression, and anxiety</td>
<td>0 20 40 60</td>
<td>80 100</td>
</tr>
<tr>
<td>21. Get friends to help me limit my drinking</td>
<td>0 20 40 60</td>
<td>80 100</td>
</tr>
</tbody>
</table>
APPENDIX L
ALCOHOL COPING SKILLS ASSESSMENT INSTRUMENT

Listed below are a number of behaviors that individuals report engaging in when they want to control their drinking.

Indicate on the scale provided how often in the last month you have you used the given behavior in order to avoid drinking no more than ____ drinks over a 4 hour period.

Never = 0
Rarely = 1
Sometimes = 2
Often = 3
Very Often = 4

1. Keep track of the number of drinks I consume
   0  1  2  3  4

2. Avoid drinking with those who pressure me to drink.
   0  1  2  3  4

3. Confine drinking to certain times of the day
   0  1  2  3  4

4. Substitute other means for feeling friendly or sociable
   0  1  2  3  4

5. Use body sensations to let me know when I should slow my drinking down
   0  1  2  3  4

6. Eat before drinking
   0  1  2  3  4

7. Participate in activities such as tennis, running, etc., when I feel like drinking
   0  1  2  3  4

8. Limit the amount of money I carry
   0  1  2  3  4

9. Set a limit on the number of drinks I have in a sitting
   0  1  2  3  4

10. Avoid playing drinking games
    0  1  2  3  4

11. Drink nonalcoholic beverages
    0  1  2  3  4
12. Drink only after a certain hour in the day

0  1  2  3  4
Never0(129,233),(169,252) = 0
Rarely  = 1
Sometimes = 2
Often   = 3
Very Often = 4

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>13. Set time limits for how long I’ll drink</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14. Avoid drinking with heavy drinkers</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>15. Avoid drinking after stressful events</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>16. Reward myself for not drinking</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>17. Refuse unwanted drinks</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>18. Ask for family support to limit my drinking</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>19. Think about the consequences of my drinking</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>20. Substitute other means for dealing with stress, depression, and anxiety</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>21. Get friends to help me limit my drinking</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
SELF-EFFICACY SITUATIONAL EXPECTANCY MEASURE

Listed below are a number of situations or events in which some people experience a drinking problem. Imagine yourself in each of these situations. Indicate on the scale provided how confident you are that you would be able to limit your drinking to no more than ____ drinks in that situation.

0% to 100%

I would be able to limit my drinking to no more than ____ drinks over a 4 hour period

<table>
<thead>
<tr>
<th>Situation</th>
<th>not at all confident</th>
<th>very confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. if I were with friends watching sports on television</td>
<td>0  20  40  60  80  100</td>
<td></td>
</tr>
<tr>
<td>2. if I had an argument with a friend</td>
<td>0  20  40  60  80  100</td>
<td></td>
</tr>
<tr>
<td>3. if I were out with friends and they stopped by a bar for drinks</td>
<td>0  20  40  60  80  100</td>
<td></td>
</tr>
<tr>
<td>4. if other people didn't seem to like me</td>
<td>0  20  40  60  80  100</td>
<td></td>
</tr>
<tr>
<td>5. if I felt confident and relaxed</td>
<td>0  20  40  60  80  100</td>
<td></td>
</tr>
<tr>
<td>6. if I were at happy hour with a group of friends</td>
<td>0  20  40  60  80  100</td>
<td></td>
</tr>
<tr>
<td>7. if I were enjoying myself at a party and wanted to feel even better</td>
<td>0  20  40  60  80  100</td>
<td></td>
</tr>
<tr>
<td>8. if I were at a friend's place and they were playing drinking games</td>
<td>0  20  40  60  80  100</td>
<td></td>
</tr>
</tbody>
</table>
I would be able to limit my drinking to no more than ____ drinks over a 4 hour period

0% to 100%

<table>
<thead>
<tr>
<th></th>
<th>not at all confident</th>
<th>very confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. if I felt uneasy in the presence of someone</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>10. if I were at a party and other people were drinking</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>11. if I wanted to celebrate with a friend</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>12. if I were out on a date and my date was drinking</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>13. if I were at a tailgate party for a football game</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>14. if I were visiting a friend and he/she offered me drinks</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
</tbody>
</table>
I would be able to limit my drinking to no more than ___ drinks over a 4 hour period

0% to 100%

<table>
<thead>
<tr>
<th></th>
<th>not at all confident</th>
<th>very confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. if someone criticized me</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>16. if I felt satisfied with something I had done</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>17. if I were at a fraternity party</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>18. if I were relaxed with a good friend and wanted to have a good time</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>19. if everything was going well</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>20. if I were in a restaurant and the people with me ordered pitchers of beer and mixed drinks</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>21. if I were at a bar with a friend and she or he was buying me drinks</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>22. if other people made me tense</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>23. if I were out with friends on the town and wanted to increase my enjoyment</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>24. if I met a friend and he/she suggested we have drinks together</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>25. if I were not getting along well with others at work or home</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>26. if I were at a bar and the people around me were laughing and dancing</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>27. if someone pressured me to be a &quot;good sport&quot; and have drinks</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
</tbody>
</table>
I would be able to limit my drinking to no more than ____ drinks over a 4 hour period

<table>
<thead>
<tr>
<th></th>
<th>not at all confident</th>
<th>very confident</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0  20  40  60  80  100</td>
<td>0  20  40  60  80  100</td>
</tr>
<tr>
<td>28. if I felt that I had let myself down</td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. if there were fights at home</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. if I had trouble sleeping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. if I remembered how good it tasted</td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. if I convinced myself that I was a new person and could take a few drinks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>33. if I were afraid that things weren't going to work out</td>
<td></td>
<td></td>
</tr>
<tr>
<td>34. if other people interfered with my plans.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>35. if I felt drowsy and wanted to stay alert</td>
<td></td>
<td></td>
</tr>
<tr>
<td>36. if there were problems with people at work or school</td>
<td></td>
<td></td>
</tr>
<tr>
<td>37. if I passed by a liquor store</td>
<td></td>
<td></td>
</tr>
<tr>
<td>38. if I wondered about my self-control over alcohol and felt like having drinks to try it out</td>
<td></td>
<td></td>
</tr>
<tr>
<td>39. if I were angry at the way things had turned out</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40. if other people treated me unfairly</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
41. if I felt nauseous

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>20</th>
<th>40</th>
<th>60</th>
<th>80</th>
<th>100</th>
</tr>
</thead>
</table>

42. if pressure built up at school or work because of the demands

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>20</th>
<th>40</th>
<th>60</th>
<th>80</th>
<th>100</th>
</tr>
</thead>
</table>


I would be able to limit my drinking to no more than ___ drinks over a 4 hour period

<table>
<thead>
<tr>
<th>0% to 100%</th>
<th>not at all confident</th>
<th>very confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>43. if I unexpectedly found a bottle of my favorite booze</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>44. if I started to think that just one drink could cause no harm</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>45. if I felt confused about what I should do</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>46. if I felt under a lot of pressure from family members at home</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>47. if my stomach felt like it was tied in knots</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>48. if I suddenly had the urge to drink</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
<tr>
<td>49. if I wanted to prove to myself that I could take a few drinks without becoming drunk</td>
<td>0 20 40 60 80 100</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX N
OUTCOME EXPECTANCY SCALE

Listed below are a number of consequences which people report happening to them once they limit the amount they drink. Indicate whether you agree or disagree that each of the following consequences would happen to you if you limit the amount you typically drink to no more than ____ drinks.

If I limit my drinking to no more than ____ drinks over a 4 hour period when I am in social situations (e.g. parties, and bars).

Strongly Disagree = 1
Disagree Somewhat = 2
Neither Disagree or Agree = 3
Agree Somewhat = 4
Strongly Agree = 5

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I would eat better</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. I would feel better about myself</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. I would be bored more often</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. I would have more energy to do things</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. I would be happier</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. I would feel more depressed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. I would enjoy life more</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. I would be friendlier and more outgoing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. I would be more withdrawn when I am with others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. I would be more tense and anxious</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. Some of my drinking friends would avoid me more</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. The world would look better to me</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Question</td>
<td>Strongly Disagree</td>
<td>Disagree Somewhat</td>
<td>Neither Disagree or Agree</td>
<td>Agree Somewhat</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>-------------------</td>
<td>---------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>13. I would feel in more control of things</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. I would be better at my job</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. I would be healthier</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>16. I would have more sudden urges to drink</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. I would feel more pressured by my friends to drink</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. I would feel lonelier</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19. Other people would respect me more</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. I would have more urges to drink if I go to my usual drinking spots</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21. I would have more self-respect</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22. My job would be secure</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23. I would feel more self-confident</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24. My mind would be clearer</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>25. My future would look better</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>26. I would be steadier on my feet</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>27. I would enjoy sex more</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>28. I would have more urges to drink when I see alcohol or</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
think about alcohol

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement</td>
<td>Score</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------------------</td>
<td>-------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Disagree = 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disagree Somewhat = 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neither Disagree or Agree = 3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agree Somewhat = 4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strongly Agree = 5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. I would find it easier to express my feelings to others</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30. I would be more often offered drinks by friends</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>31. I would feel more left out when others are drinking</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32. Things would be better at work and school with boss/teachers and co-workers/schoolmates</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>33. I would be moodier</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34. I would be more relaxed and confident with others</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35. I would have more money to do other activities</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>36. My relationship would be better with my boyfriend/girlfriend</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>37. I would be less fun to be with</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38. I would be less flirtatious</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39. I would be more intimidated when interacting with the opposite sex in social situations</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40. I would be less sexually aggressive</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41. I would feel awkward in social situations</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Strongly Disagree = 1**
**Disagree Somewhat = 2**
**Neither Disagree or Agree = 3**
**Agree Somewhat = 4**
**Strongly Agree = 5**

42. I would have fewer conversations when I’m in social situations

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

43. I would feel pressured more often by friends to drink

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

44. I would less often say things I regret

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>
APPENDIX 0
Stages of Change 4 Questions Exclusive Categories

Circle Yes or No for questions 1-3

1. Are you seriously considering reducing your drinking within the next 6 months? Yes No

2. Are you planning to reduce your drinking in the next 30 days? Yes No

3. Have you attempted to reduce your drinking over the past year? Yes No

4. How long has it been since you cut down on your drinking? ____________________
PERSONAL DRINKING QUESTIONNAIRE (SOCRATES)

Please read the following statements carefully. Each one describes a way that you might (or might not) feel about your drinking. For each statement, circle one number on the scale at the right to indicate how much you agree or disagree with it right now. Please circle one and only one number for every statement.

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Undecided or Unsure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I really want to make changes in my drinking.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Sometimes I think my drinking does more harm than good.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. I definitely have some problems related to my drinking.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. I have already started making some changes in my drinking.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. I was drinking too much at one time, but I've managed to change my drinking.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. I am not concerned about my drinking.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. Sometimes I wonder if I am an alcoholic.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. I really want to do something about my drinking</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Strongly Disagree</td>
<td>Disagree</td>
<td>Undecided or Unsure</td>
<td>Agree</td>
<td>Strongly Agree</td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>----------</td>
<td>--------------------</td>
<td>-------</td>
<td>---------------</td>
<td></td>
</tr>
<tr>
<td>9. I'm not just thinking about changing my drinking, I'm already doing something about it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. I have already changed my drinking, and I am looking for ways to keep from slipping back to my old pattern.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. I have serious problems with drinking.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. Sometimes I wonder if my drinking is hurting other people.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. I am ready to work hard and make some major changes in my drinking.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. I am actively doing things now to cut down or stop drinking.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. I used to have problems with alcohol, but not any more.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. I think I need to be going to a program for help with my drinking.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>17. I think it might be time for some changes in my drinking.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18. If I don't change my drinking soon, my problems are going to get worse.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19. I have already been trying to change my drinking, and I am interested in getting</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Question</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>5. Some more help with it.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Now that I have changed my drinking, it is important for me to hold onto the change I’ve made.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21. I know that I have a drinking problem.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

| 22. I think that I might learn some things in this study that could help change my drinking. | 1 | 2 | 3 | 4 | 5 |
| 23. It is definitely time for me to do something about the problems I have been having with alcohol. | 1 | 2 | 3 | 4 | 5 |
| 24. I have started to carry out a plan to cut down or stop my drinking. | 1 | 2 | 3 | 4 | 5 |
| 25. I want help to keep from going back to the drinking problems I had before. | 1 | 2 | 3 | 4 | 5 |
| 26. I am a fairly normal drinker.                                        | 1 | 2 | 3 | 4 | 5 |
| 27. Sometimes I wonder if I am in control of my drinking.                | 1 | 2 | 3 | 4 | 5 |
| 28. I am an alcoholic                                                   | 1 | 2 | 3 | 4 | 5 |
| 29. I am working hard to change my drinking.                            | 1 | 2 | 3 | 4 | 5 |
| 30. I am worried that my previous problems with drinking might come back. | 1 | 2 | 3 | 4 | 5 |
31. I've had more trouble because of my drinking than most people do. 1 2 3 4 5

32. There are times when I wonder if I drink too much. 1 2 3 4 5

33. I am a problem drinker. 1 2 3 4 5
34. I know that my drinking has caused problems, and I am trying to do something about it.  1 2 3 4 5

35. I have made some changes in my drinking, and I want some help to keep from going back to the way I used to drink.  1 2 3 4 5

36. My problems are at least partly due to my own drinking.  1 2 3 4 5

37. I probably drink too much at times.  1 2 3 4 5
<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Undecided or Unsure</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>38. My drinking is causing a lot of harm.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>39. I have a serious problem with drinking, and I have already started to overcome it.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>40. I'm sober, and I want to stay that way.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Table 1.

**Participants’ Stages of Change Across the Three Conditions**

<table>
<thead>
<tr>
<th>Condition</th>
<th>Contemplation</th>
<th>Determination</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>Motivation</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>Skills Training</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>Control</td>
<td>14</td>
<td>17</td>
</tr>
</tbody>
</table>
Table 2. **Correlations Between Participant and Collateral Reports of Participant’s Drinking Behaviors**

<table>
<thead>
<tr>
<th></th>
<th>1-Month</th>
<th>2-Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of Alcohol Use</td>
<td>.61**</td>
<td>.83**</td>
</tr>
<tr>
<td>Total Drinks Consumed</td>
<td>.46**</td>
<td>.84**</td>
</tr>
<tr>
<td>Average Drinks Per Occasion</td>
<td>.52**</td>
<td>.65**</td>
</tr>
<tr>
<td>Frequency of Heavy Alcohol Use</td>
<td>.61**</td>
<td>.76**</td>
</tr>
<tr>
<td>Alcohol Related Problems</td>
<td>.53**</td>
<td>.78**</td>
</tr>
</tbody>
</table>

** Denotes p < .001
Table 3.

Means and Standard Deviations Drinking Behaviors and Problems Across all Conditions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pretest</th>
<th>1-Month</th>
<th>2-Month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol Related Problems</td>
<td>10.75 (a)</td>
<td>15.10 (b)</td>
<td>10.54 (a)</td>
</tr>
<tr>
<td></td>
<td>(10.55)</td>
<td>(15.83)</td>
<td>(12.44)</td>
</tr>
<tr>
<td>Frequency of Heavy Use</td>
<td>6.57 (ac)</td>
<td>5.65 (b)</td>
<td>6.09 (bc)</td>
</tr>
<tr>
<td></td>
<td>(4.53)</td>
<td>(4.58)</td>
<td>(5.05)</td>
</tr>
<tr>
<td>Frequency of Moderate Use</td>
<td>2.70 (a)</td>
<td>2.10 (a)</td>
<td>1.87 (a)</td>
</tr>
<tr>
<td></td>
<td>(3.00)</td>
<td>(2.52)</td>
<td>(2.88)</td>
</tr>
</tbody>
</table>

Note: 1) Means without superscripts in common differ significantly, \(p < .05\).

2) Standard Deviations found in parentheses
Table 4

**Correlations Pre-test Expectancies and Drinking Behaviors**

**Pre-test Measures**

<table>
<thead>
<tr>
<th></th>
<th>Moderate Use</th>
<th>Heavy Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Self-efficacy</td>
<td>.02</td>
<td>-.33**</td>
</tr>
<tr>
<td>Negative Self-efficacy</td>
<td>-.05</td>
<td>-.18</td>
</tr>
<tr>
<td>Costs Outcome Expectancy</td>
<td>.17</td>
<td>.25*</td>
</tr>
<tr>
<td>Benefits Outcome Expectancy</td>
<td>.13</td>
<td>.04</td>
</tr>
</tbody>
</table>

**Pre-test Expectancies and 1-month Drinking Behaviors**

<table>
<thead>
<tr>
<th></th>
<th>Moderate Use</th>
<th>Heavy Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Self-efficacy</td>
<td>-.14</td>
<td>-.34**</td>
</tr>
<tr>
<td>Negative Self-efficacy</td>
<td>-.23</td>
<td>-.17</td>
</tr>
<tr>
<td>Costs Outcome Expectancy</td>
<td>.16</td>
<td>.18</td>
</tr>
<tr>
<td>Benefits Outcome Expectancy</td>
<td>.13</td>
<td>.00</td>
</tr>
</tbody>
</table>

**Pre-test Expectancies and 2-month Drinking Behaviors**

<table>
<thead>
<tr>
<th></th>
<th>Moderate Use</th>
<th>Heavy Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Self-efficacy</td>
<td>-.16</td>
<td>-.34**</td>
</tr>
<tr>
<td>Negative Self-efficacy</td>
<td>-.25*</td>
<td>-.26*</td>
</tr>
<tr>
<td>Costs Outcome Expectancy</td>
<td>.11</td>
<td>.27*</td>
</tr>
<tr>
<td>Benefits Outcome Expectancy</td>
<td>.06</td>
<td>.05</td>
</tr>
</tbody>
</table>

**Note:** * Indicates significance of p < .01
** Indicates significance of p < .001
Table 5

Correlations 1-month Expectancies and Drinking Behaviors

<table>
<thead>
<tr>
<th></th>
<th>Moderate Use</th>
<th>Heavy Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Self-efficacy</td>
<td>-.21</td>
<td>-.43**</td>
</tr>
<tr>
<td>Negative Self-efficacy</td>
<td>-.14</td>
<td>-.25*</td>
</tr>
<tr>
<td>Costs Outcome Expectancy</td>
<td>.09</td>
<td>.22</td>
</tr>
<tr>
<td>Benefits Outcome Expectancy</td>
<td>.12</td>
<td>.08</td>
</tr>
</tbody>
</table>

1-month Expectancies and 2-month Drinking Behaviors

<table>
<thead>
<tr>
<th></th>
<th>Moderate Use</th>
<th>Heavy Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Self-efficacy</td>
<td>-.22</td>
<td>-.38**</td>
</tr>
<tr>
<td>Negative Self-efficacy</td>
<td>-.13</td>
<td>-.34**</td>
</tr>
<tr>
<td>Costs Outcome Expectancy</td>
<td>-.04</td>
<td>.37**</td>
</tr>
<tr>
<td>Benefits Outcome Expectancy</td>
<td>.09</td>
<td>.07</td>
</tr>
</tbody>
</table>

Note: * Indicates significance of p < .01

** Indicates significance of p < .001
Table 6

Correlations Efficacy and Outcome Expectancies

Pre-test Efficacy and Outcome Expectancies

<table>
<thead>
<tr>
<th>Outcome Expectancies</th>
<th>Costs</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Self-efficacy</td>
<td>-.52**</td>
<td>-.24*</td>
</tr>
<tr>
<td>Negative Self-efficacy</td>
<td>-.64**</td>
<td>-.31**</td>
</tr>
</tbody>
</table>

1-month Efficacy and Outcome Expectancies

<table>
<thead>
<tr>
<th>Outcome Expectancies</th>
<th>Costs</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Positive Self-efficacy</td>
<td>-.51**</td>
<td>-.14</td>
</tr>
<tr>
<td>Negative Self-efficacy</td>
<td>-.58**</td>
<td>-.28*</td>
</tr>
</tbody>
</table>

Note: * Indicates significance of $p < .01$

** Indicates significance of $p < .001$
Table 7

Pre-test Expectancies as Predictors of 1-month Moderate Use

**Dependent Variable** - Moderate Alcohol Use at 1-month

Follow-up

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Change $R^2$</th>
<th>Sig Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step #1 Pre-test Moderate Use</td>
<td>.08</td>
<td>.01</td>
</tr>
<tr>
<td>Step #2 Pre-test Outcome Expect.</td>
<td>.01</td>
<td>.26</td>
</tr>
<tr>
<td>Step #3 Pre-test Self-Efficacy</td>
<td>.02</td>
<td>.12</td>
</tr>
</tbody>
</table>

**Dependent Variable** - Moderate Alcohol Use at 1-month

Follow-up

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Change $R^2$</th>
<th>Sig Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step #1 Pre-test Moderate Use</td>
<td>.08</td>
<td>.01</td>
</tr>
<tr>
<td>Step #2 Pre-test Self-Efficacy</td>
<td>.04</td>
<td>.05</td>
</tr>
<tr>
<td>Step #3 Pre-test Outcome Exp</td>
<td>.00</td>
<td>.89</td>
</tr>
</tbody>
</table>
Table 8

**Pre-test Expectancies as Predictors of 1-month Heavy Use**

**Dependent Variable** - Heavy Alcohol Use at 1-month Follow-up

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Change $R^2$</th>
<th>Sig Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step #1 Pre-test Heavy Use</td>
<td>.56</td>
<td>.01</td>
</tr>
<tr>
<td>Step #2 Pre-test Outcome Exp</td>
<td>.00</td>
<td>.50</td>
</tr>
<tr>
<td>Step #3 Pre-test Self-Efficacy</td>
<td>.01</td>
<td>.20</td>
</tr>
</tbody>
</table>

**Dependent Variable** - Heavy Alcohol Use at 1-month Follow-up

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Change $R^2$</th>
<th>Sig Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step #1 Pre-test Heavy Use</td>
<td>.56</td>
<td>.01</td>
</tr>
<tr>
<td>Step #2 Pre-test Self-Efficacy</td>
<td>.00</td>
<td>.43</td>
</tr>
<tr>
<td>Step #3 Pre-test Outcome Exp</td>
<td>.01</td>
<td>.22</td>
</tr>
</tbody>
</table>
Table 9

**Pre-test Expectancies as Predictors of 2-month Moderate Use**

**Dependent Variable** - Moderate Alcohol Use at 2-month Follow-up

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Change $R^2$</th>
<th>Sig Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step #1 Pre-test Moderate Use</td>
<td>.06</td>
<td>.03</td>
</tr>
<tr>
<td>Step #2 Pre-test Outcome Exp</td>
<td>.00</td>
<td>.56</td>
</tr>
<tr>
<td>Step #3 Pre-test Self-Efficacy</td>
<td>.05</td>
<td>.03</td>
</tr>
</tbody>
</table>

**Dependent Variable** - Moderate Alcohol Use at 2-month Follow-up

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Change $R^2$</th>
<th>Sig Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step #1 Pre-test Moderate Use</td>
<td>.06</td>
<td>.03</td>
</tr>
<tr>
<td>Step #2 Pre-test Self-Efficacy</td>
<td>.05</td>
<td>.04</td>
</tr>
<tr>
<td>Step #3 Pre-test Outcome Exp</td>
<td>.00</td>
<td>.52</td>
</tr>
</tbody>
</table>
Table 10

**Pre-test Expectancies as Predictors of 2-month Heavy Use**

**Dependent Variable** - Heavy Alcohol Use at 2-month Follow-up

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Change $R^2$</th>
<th>Sig Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step #1 Pre-test Heavy Use</td>
<td>.53</td>
<td>.00</td>
</tr>
<tr>
<td>Step #2 Pre-test Outcome Exp</td>
<td>.01</td>
<td>.68</td>
</tr>
<tr>
<td>Step #3 Pre-test Self-Efficacy</td>
<td>.00</td>
<td>.22</td>
</tr>
</tbody>
</table>

**Dependent Variable** - Heavy Alcohol Use at 2-month Follow-up

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Change $R^2$</th>
<th>Sig Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step #1 Pre-test Heavy Use</td>
<td>.53</td>
<td>.00</td>
</tr>
<tr>
<td>Step #2 Pre-test Self-Efficacy</td>
<td>.01</td>
<td>.20</td>
</tr>
<tr>
<td>Step #3 Pre-test Outcome Exp</td>
<td>.00</td>
<td>.79</td>
</tr>
</tbody>
</table>
Table 11.

Means and Standard Deviations for Socrates Subscales by Stages of Change Categories

Pre-test

<table>
<thead>
<tr>
<th>Socrates</th>
<th>Pre-contemplation</th>
<th>Action*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>33.61 (4.10)</td>
<td>31.08 (5.22)</td>
</tr>
<tr>
<td>Contemplation</td>
<td>19.17 (5.59)</td>
<td>22.51 (4.84)</td>
</tr>
<tr>
<td>Determination</td>
<td>13.27 (5.10)</td>
<td>16.14 (4.85)</td>
</tr>
<tr>
<td>Action</td>
<td>12.78 (4.20)</td>
<td>20.35 (6.31)</td>
</tr>
<tr>
<td>Maintenance</td>
<td>13.56 (3.77)</td>
<td>20.65 (6.38)</td>
</tr>
</tbody>
</table>

1-month follow-up

<table>
<thead>
<tr>
<th>Socrates</th>
<th>Pre-contemplation</th>
<th>Action*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>34.07 (3.79)</td>
<td>31.79 (4.80)</td>
</tr>
<tr>
<td>Contemplation</td>
<td>18.78 (5.21)</td>
<td>21.11 (5.38)</td>
</tr>
<tr>
<td>Determination</td>
<td>13.37 (4.58)</td>
<td>16.23 (5.71)</td>
</tr>
<tr>
<td>Action</td>
<td>13.48 (4.11)</td>
<td>21.21 (6.33)</td>
</tr>
<tr>
<td>Maintenance</td>
<td>14.11 (3.81)</td>
<td>21.60 (5.82)</td>
</tr>
</tbody>
</table>

* Note: All Socrates subscales differ significantly between participants in pre-contemplation and action stages p < .05.
### Table 12

**Correlations Pre-test Stages of Change Subscales and Drinking**

#### Pre-test Stages of Change Subscales and Pre-test Drinking

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Moderate Use</th>
<th>Heavy Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>-.16</td>
<td>-.17</td>
</tr>
<tr>
<td>Contemplation</td>
<td>.14</td>
<td>.32**</td>
</tr>
<tr>
<td>Determination</td>
<td>.18</td>
<td>.23</td>
</tr>
<tr>
<td>Action</td>
<td>.28*</td>
<td>-.04</td>
</tr>
<tr>
<td>Maintenance</td>
<td>.38**</td>
<td>-.12</td>
</tr>
</tbody>
</table>

#### Pre-test Stages of Change Subscales and 1-month Drinking

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Moderate Use</th>
<th>Heavy Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>-.19</td>
<td>-.15</td>
</tr>
<tr>
<td>Contemplation</td>
<td>.22</td>
<td>.25*</td>
</tr>
<tr>
<td>Determination</td>
<td>.27*</td>
<td>.17</td>
</tr>
<tr>
<td>Action</td>
<td>.13</td>
<td>-.05</td>
</tr>
<tr>
<td>Maintenance</td>
<td>.34**</td>
<td>-.15</td>
</tr>
</tbody>
</table>

#### Pre-test Stages of Change Subscales and 2-month Drinking

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Moderate Use</th>
<th>Heavy Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>-.17</td>
<td>-.14</td>
</tr>
<tr>
<td>Contemplation</td>
<td>.19</td>
<td>.15</td>
</tr>
<tr>
<td>Determination</td>
<td>.20</td>
<td>.18</td>
</tr>
<tr>
<td>Action</td>
<td>.10</td>
<td>.09</td>
</tr>
<tr>
<td>Maintenance</td>
<td>-.24</td>
<td>.31*</td>
</tr>
</tbody>
</table>
Table 13
Correlations 1-month Stages of Change Subscales and Drinking

1-month Stages of Change Subscales and 1-month Drinking Behaviors

<table>
<thead>
<tr>
<th></th>
<th>Moderate Use</th>
<th>Heavy Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>-.31*</td>
<td>-.17</td>
</tr>
<tr>
<td>Contemplation</td>
<td>.25*</td>
<td>.32**</td>
</tr>
<tr>
<td>Determination</td>
<td>.26*</td>
<td>.23</td>
</tr>
<tr>
<td>Action</td>
<td>.08</td>
<td>-.04</td>
</tr>
<tr>
<td>Maintenance</td>
<td>.26*</td>
<td>-.11</td>
</tr>
</tbody>
</table>

1-month Stages of Change Subscales and 2-month Drinking Behaviors

<table>
<thead>
<tr>
<th></th>
<th>Moderate Use</th>
<th>Heavy Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precontemplation</td>
<td>-.27*</td>
<td>-.25*</td>
</tr>
<tr>
<td>Contemplation</td>
<td>.15</td>
<td>.32*</td>
</tr>
<tr>
<td>Determination</td>
<td>.16</td>
<td>.28*</td>
</tr>
<tr>
<td>Action</td>
<td>.12</td>
<td>-.03</td>
</tr>
<tr>
<td>Maintenance</td>
<td>.28*</td>
<td>-.13</td>
</tr>
</tbody>
</table>

Note: * Indicates significance of p < .01

** Indicates significance of p < .001
Table 14

**Pre-test Stages of Change as a Predictor of 1-month Drinking**

**Dependent Variable** - Moderate Alcohol use at 1-month Follow-up

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Change $R^2$</th>
<th>Sig Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step #1 Pre-test Moderate Use</td>
<td>.09</td>
<td>.01</td>
</tr>
<tr>
<td>Step #2 Pre-test Stages of Change</td>
<td>.16</td>
<td>.01</td>
</tr>
</tbody>
</table>

**Dependent Variable** - Heavy Alcohol use at 1-month Follow-up

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Change $R^2$</th>
<th>Sig Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step #1 Pre-test Heavy Use</td>
<td>.56</td>
<td>.01</td>
</tr>
<tr>
<td>Step #2 Pre-test Stages of Change</td>
<td>.03</td>
<td>.30</td>
</tr>
</tbody>
</table>