BRIEF ALCOHOL INTERVENTION WITH COLLEGE STUDENTS USING BASICS:

FACE-TO-FACE-VERSUS COMPUTERIZED FEEDBACK

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THESIS ABSTRACT

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Leon Harvey Butler

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Research suggests that brief motivational models of intervention for alcohol use among college students are effective in decreasing risky drinking (Baer, Marlatt, Kivlhan, Fromme, Larimer, & Williams, 1992; Emrick 1975). Specifically the Brief Alcohol Screening and Intervention of College students (BASICS, Dimeff, Baer, Kivlahan, & Marlatt, 1999) has been shown effective for college populations (Borsari & Carey, 2000; Carey et al., 2006; Murphy et al., 2001).

Typically, brief alcohol interventions are delivered in a face-to-face session with a trained clinician. However, researchers have now discovered that such brief interventions may not need to be delivered in a face-to-face session to be effective (Agostinelli et al., 1995; Cunningham et al., 2001; Henslee et al., 2006; Walters, 2000; Collins et al., 2002; Murphy et al., 2004; Kypri, et al., 2003; Neighbors et al., 2004; Neighbors et al., 2006; Walters, et al., 2005). Methodology is generally to gather

individual drinking information and then to create a personalized feedback and deliver it via mail, computer, or pamphlet. However, no research to date has compared the relative effectiveness of computerized delivery of feedback with a face-to-face delivery and a non-treatment control.

In this study, we used a three-group design to determine the effectiveness of two delivery methods. We screened 300 college students from undergraduate psychology and statistics courses. We randomly assigned participants who qualified (reported at least 2 binge drinking episodes and 2 or more alcohol related problems in the last 28 days) and followed through (N = 84) to either a face-to-face feedback group, a computer delivered feedback group, or a non-treatment control group. Each of the intervention groups received personalized feedback, following the BASICS model, either from a trained graduate clinician or via computer in the form of a PowerPoint presentation. All participants then completed a 4-week follow-up session where they again filled out measures to assess their alcohol use over the past 28 days.

The results of the current study suggest that brief alcohol interventions are effective in reducing alcohol use, particularly binge drinking and alcohol-related problems. The computerized group was as effective as the face-to-face group in reducing these behaviors. Additionally, both the face-to-face and the computerized feedback groups showed decrease relative to the control group in terms of drinking quantity, frequency, and binge drinking. Participants also viewed the computerized intervention as acceptable as the face-to-face intervention.

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BRIEF ALCOHOL INTERVENTION WITH COLLEGE STUDENTS USING BASICS: FACE-TO-FACE-VERSUS COMPUTERIZED FEEDBACK

Alcohol is one of the most widely used and abused drugs in the United States. Abuse is especially present in college populations. Presley, Meilman, and Lyerla (1995) found, in a survey of over 45,000 college students, that 85% of undergraduates report consuming alcohol in the past year and 19.2% reported drinking at least three times per week. Another survey of 17,592 college students at 170 universities found that 44% of the sample reported at least one binge drinking episode (five or more drinks on an occasion for males, four or more drinks on an occasion for females) in the last 2 weeks. Nineteen percent of the same sample reported frequent binge episodes (at least three binge episodes in the last three weeks) (Wechsler, Davenport, Dowdall, & Moeykens, 1994). This level of alcohol intake is concerning when considering the subsequent consequences.

Alcohol was reportedly involved in 1,700 college student deaths in 2001, making alcohol-related fatalities the leading cause of death among college students. There are 500,000 accidental injuries and 600,000 alcohol related assaults per year in college populations, including 70,000 sexual assaults. In 2001, 2.8 million college students reported driving while intoxicated. Risky sexual behavior, poor academic performance, and increased criminal activity may also be included in the list of negative consequences (Hingson, Heeren, Winter, & Wechsler, 2005).

Not surprisingly increased alcohol related problems generally correlate with increased levels of drinking (O'Hare, 1990). Academically, 'A' students drink on average of 3.2 drinks per week while 'D' students drink 8.4 drinks per week (Presley, Meilman, & Lyerla, 1995). People experience most alcohol related problems with heavier episodes of drinking. At any given time, the likelihood of experiencing a negative effect from alcohol is significantly increased when an individual binge drinks (Wechsler, Lee, Kuo, & Lee, 2000). Therefore, the most at risk group is the heavy drinking population.

Treatment Approaches

Problems related to heavy drinking have spurred the development of several alcohol treatment programs. Among the most popular psychological treatments are self-help groups like Alcoholic Anonymous, behavioral therapy, and brief interventions. Several different strategies exist within each of these subsets.

Alcoholic Anonymous.

Alcoholics Anonymous (AA) is commonly the first group to come to mind when an individual thinks of self-help groups for alcohol. AA, the earliest of these self help groups, was founded in 1935. AA is also the largest of such support groups with over 105,000 groups in several countries and over 2 million members (Alcoholics Anonymous, n.d.). Alcoholics Anonymous subscribes to a disease-based model of alcohol abuse and alcoholism. Disease-based models work under the assumption that alcoholism is a progressive disease, and the alcoholics who consume alcohol will inevitably suffer from a range of negative consequences. This model promotes

abstinence as the primary treatment goal. Because the AA model is geared toward the more severe alcoholic and stresses abstinence over moderation, it is generally viewed as less applicable to a college population.

Behavioral Approaches.

Behavioral therapy is a skills-based model of alcohol treatment that can work towards both abstinence and moderation goals. Traditionally the goal of behavioral models of treatment has been moderation. The focus on moderating heavy drinking has helped extend treatment to problem drinkers who may not be dependent. (Hester, 1995; Miller & Hester, 1986).

Behavioral treatments can be either client or therapist directed; either way research has shown this type of treatment to be useful (Buck & Miller, 1981; Miller, Leckman, Delaney, & Tinkcom, 1992). Regardless of the focus behavioral treatments take, they are based on learning and applying skills. Some of the skills that may be included in behavioral training are goal setting, self-monitoring, managing consumption, and learning alternative coping skills. Each of these skills has been shown to help problem drinkers reduce risky drinking behaviors (Hester & Miller, 1995). For example, in 1988 Alden conducted a study comparing behavioral self-control training and a developmental counseling model. The behavioral self-control model included self-monitoring, behavioral contingencies, and learning coping skills and antecedents. The developmental counseling model included self-monitoring, goal setting, and discussion of problems with a counselor and excluded any behavioral contingencies. Alden found that

the two groups did not differ significantly from each other at follow-up. However, both groups significantly decreased their drinking to a moderate level (Alden, 1988).

BASICS: A Brief Intervention for College Student Drinkers.

Behavioral models have been effective in reducing risky drinking among heavy drinkers and promoting abstinence among dependant drinkers. However, research indicates that in-depth treatments are no more successful at reducing risky drinking than brief interventions that are more time and cost effective (Baer, Marlatt, Kivlhan, Fromme, Larimer, & Williams, 1992; Emrick 1975). This finding has led to the development of several brief intervention designed to reduce the negative consequences associated with heavy drinking.

The Brief Assessment and Screening Intervention for College Students (BASICS, Dimeff, Baer, Kivlahan, & Marlatt, 1999) is a non-confrontational, behaviorally based harm reduction model of alcohol treatment. Because the model is tailored for the college population, it does not stress abstinence but rather moderation and the reduction of potential alcohol related problems. It follows that the greatest benefits of this program are seen in the heavy drinking population and among those experiencing alcohol related problems (Murphy, Duchnick, Vuchinich, Davison, Karg, Olson, Smith & Coffey, 2001).

BASICS is designed to be conducted in one to four sessions. The intervention consists of an intake interview where information is gathered to generate a personalized feedback form based on the individual's alcohol use patterns. The feedback is then delivered to that person in subsequent sessions. The clinician uses motivational

interviewing throughout the interaction. Motivational interviewing is a non-confrontational approach in which a clinician attempts to increase an individual's awareness of problems in order to help effectuate change toward moderate or safer drinking practices. Motivational interviewing has been shown effective in promoting change (Heather, 2005).

Among the earliest studies showing effects with BASICS, Borsari and Carey (2000) successfully recruited undergraduates at Syracuse University to participate in a randomized between groups trial. Borsari and Carey screened 109 students using the following battery: the Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985), to measure frequency and quantity of typical alcohol consumption; the Drinking Norms Rating Form (DNRF; Baer, Stacy, & Larimer, 1991), to estimate the perceived average and heaviest drinking among college students and among the individual's close friends; the Rutgers Alcohol Problems Index (RAPI; White & Labouvie, 1989), measuring alcohol related problems for the past month; and the Cognitive Appraisal of Risky Events (Fromme, Katz, & Rivet, 1997), to measure expectancies of heavy alcohol use. Of the 109 students screened, 63 met the inclusion criteria of at least two binge drinking episodes in the past month, and 60 were successfully recruited. All participants received the initial battery. The control group (N=31) received no formal intervention, but participated in the six week follow-up session in which alcohol consumption behavior and related problems were again assessed using the same measures included in the initial battery.

The BASICS intervention group (N=29) received an adapted version of BASICS consisting of a single session intervention where personalized feedback was presented. Borsari and Carey fashioned the personalized feedback from the screening/assessment battery. A trained graduate student delivered the feedback in a face-to-face session. It included five feedback aspects. First, the graduate student reviewed the participants' use of alcohol in comparison with national and campus norms were delivered. Second, personal negative consequences were discussed. Third, the intervention focused on positive and negative expectancies and risks and benefits of drinking. Forth, information was provided about alcohol and its influence to challenge any misconceptions. Finally, the graduate student provided information to help the participants recognize and avoid high risk drinking. The intervention was designed to create a discrepant view of the participants' actual drinking and what they felt was ideal in order to increase motivation to drink less.

The study analyzed four variables, 1) average number of drinks per week, 2) number of times drinking in the past month, 3) number of binge episodes in the past month, and 4) RAPI scores. The researcher found that at the six-week follow up the intervention group reported significantly lower values on all the outcome measures except the RAPI.

Those who participated in the BASICS intervention were also asked to rate their experience with four questions based on a 4 point Likert scale. The participants rated their satisfaction with the intervention, the accuracy the information presented in reflecting their actual drinking habits, if they would recommend this intervention to

another student, and their willingness to recommend the intervention to a friend. Participants rated the intervention positively. This study shows that the BASICS intervention is an effective tool for reducing alcohol consumption, and that the intervention is acceptable to students. However, the lack of an active comparison group participating in a proven intervention limits the utility of the study in establishing the effects of the specific intervention.

Another seminal study in BASIC intervention was conducted at Auburn University (Murphy et al., 2001). Murphy and his colleagues screened 299 undergraduates. Students filled out the DDQ and the RAPI. Students who endorsed at least two alcohol related problems on the RAPI and were in the upper 33% of the sample for drinks per week were eligible for participation in the intervention. Ninety-nine students of the screening sample met criterion for the intervention phase and 84 of these students were successfully recruited.

The researchers randomly assigned participants to one of three groups. A control group (n = 24) received the initial battery and the follow-up assessment at three and nine months post intervention phase. The BASICS group (n = 30) received a single 50-minute session with a graduate clinician trained in the BASICS model. The session consisted of working through a personalized feedback sheet similar to the one used in the Borsari and Carey (2000) study. The education condition (n = 25) watched a 30-minute video about the possible harmful effects of alcohol. These participants then engaged in a 20-minute one on one discussion with a graduate clinician focused on the student's reactions to the

video and thoughts about college drinking. The discussion did not touch on students' individual drinking patterns.

Murphy et al., (2001) found that BASICS used in this study was most effective for heavy drinkers, with students drinking more than 26 drinks a week or reporting four or more binge episodes per week showing significantly greater reduction in consumption at a 3 month follow-up. However, education group participants showed greater RAPI score reduction. At the nine-month follow-up BASIC participants showed a slightly lower scores over other groups for number of drinks per week, number of binge episodes per week, and number of days drinking per week. Participants completing the BASICS intervention rated it higher than those rating the education intervention. This study supports other research findings (Marlatt, Baer, Kivlahan, Dimeff, Larimer, Quigley, Somers, & Williams, 1998; Borsari & Carey, 2000) suggesting that BASICS is a viable option for brief treatment among heavy drinking college students.

Methods for Delivering Personalized Feedback

BASICS was originally designed as an intervention to be delivered face-to-face by a trained clinician. However, several recent studies suggest that brief alcohol interventions may be delivered without face-to-face feedback (Agostinelli, Brown, & Miller, 1995; Carey, Carey, Michael, & Maisto, 2006; Cunningham, Wild, Bondy, & Lin, 2001; Neighbors, Larimer, & Lewis, 2004; Walters, 2000; Collins, et al., 2002). In one such study, Murphy, Benson, Vuchinich, Deskins, Eakin, Flood, McDevitt-Murphy, and Torrealday (2004) used a personalized feedback model as prescribed by BASICS. The researchers randomly assigned 54 heavy drinking students to one of two conditions, a

face-to-face personalized feedback intervention and a non-interaction personalized feedback group. In the face-to-face group, participants received personalized feedback from a graduate clinician during a 30 to 50 minute motivational session. The researchers instructed the non-interaction group to spend thirty minutes reading and studying the personalized feedback sheet handed to them. The results showed that both groups significantly reduced their drinking but that the two groups were not significantly different from each other.

Given the finding that feedback can be effective when delivered without the benefit of a therapist, a variety of efficient and low cost delivery methods could be utilized. Early research on the efficacy of this low cost delivery system is promising (Agostinelli et al., 1995; Cunningham et al., 2001; Henslee et al., 2006; Walters, 2000; Collins et al., 2002). For example, Collins et al., (2002) mailed personalized normative feedback to 49 participants while 51 received a brochure on general alcohol information. The study showed at six weeks that the personalized feedback was more effective than the generic brochure at reducing the number of binge drinking episodes. The feedback group also reported a greater perceived discrepancy between their own drinking and others' drinking behaviors. However, these results did not hold at a 6-month follow-up. It is difficult to conclude from this study the effect of the intervention, as there was no no-treatment control. However, the initial findings that feedback delivered via alternative methods may be effective in reducing heavy drinking are promising, even if the reductions are not enduring. Additionally, Agostinelli et al., (1995) found that mailed

feedback alone was more effective in reducing problem drinking than a no-treatment control.

The potential benefits and efficiency of mailed feedback, along with the emerging computer generation, has spawned the study of computer delivered feedback. With widely available computer and internet access, researchers have begun to question if computer based alcohol interventions may be effective in reducing drinking. One of the initial questions was whether internet based assessments would be as reliable as traditional paper and pencil based methods. In 2002, Miller, Neal, Roberts, Baer, Cressler, Metrik, and Marlatt conducted a study to determine if this method was reliable. The researchers randomly assigned 255 undergraduates to one of three groups, including paper and pencil and two variations of an internet based assessment. All participants filled out the assessment materials at two time points. The results indicate that there was no difference among groups concerning test retest reporting. Further, the groups did not differ significantly on measures of consumption or problems at the two time points. The results indicate that internet based assessment may be a reliable method of gathering information.

In 2004, Neighbors, Larimar, and Lewis investigated the efficacy of computer delivered personalized normative feedback. The researchers randomized participants into either an assessment-only control group or an intervention group. All assessments were completed in a controlled on-campus setting via computer. The intervention group received personal normative feedback immediately after they completed the baseline assessment. Feedback was delivered via computer; participants viewed the feedback for

approximately one minute while the feedback was printed. Results indicated significant differences in drinking rates between groups at a 3- and 6-month follow-up. These results lend support to the idea that feedback may be effectively delivered in a number of different fashions. While this preliminary data is promising, the computer delivery in this study was extremely brief. A study using lengthier computer feedback sessions would expand the literature.

More research is beginning to demonstrate the acceptability and efficacy of computer and internet based brief interventions. These studies suggest that more people prefer an internet based intervention and that these intervention may be as effective as practitioner delivered brief interventions (Kypri, Saunders, & Gallagher, 2003; Neighbors et al., 2006; Walters, Miller, & Chiauzzi, 2005). For example, Kypri, Saunders, Williams, McGee, Langley, Cashell-Smith, & Gallagher (2004) recruited a group of 167 students in Australia via a 3 minute web based screening to participate in a web based versus pamphlet only feedback trial for reduction of risky drinking. The web based feedback group spent 10 to 15 minutes with a personalized feedback, which included a summary of recent alcohol use, risk status, comparisons with recommended use, estimated blood alcohol content, and comparisons with national and university norms. The pamphlet group received a generic pamphlet on alcohol facts at the end of the assessment period. At 6 weeks, the web-based groups showed significantly greater reduction in total alcohol consumption and significantly fewer alcohol related problems. At 6 months, the web-based group continued to show fewer alcohol related problems but did not differ significantly on total alcohol consumption.

Purpose of the Study

It is clear that computer and internet based brief interventions for problem drinking are becoming more popular. It also seems that many of these interventions employ some type of personalized feedback (Walters et al., 2005). However, the outcome data for these interventions remains sparse. There remain relatively few studies indicating the efficacy of computer based interventions. Even fewer of these include sufficient non-treatment controls and other treatment comparisons groups. The literature is clearly lacking a vital link demonstrating the efficacy of computer based personalized feedback compared to the more traditional and proven practitioner-based feedback delivery.

In this study, we establish the relative effectiveness of a computer delivered personalized feedback when compared with a practitioner-delivered personalized feedback. Much of the research to date has done little to standardize what is considered computerized feedback. The variability ranges from a one-minute glance while a feedback prints to a 15-minute web-based interaction. While it is clear that in a practical sense internet based interventions cannot be standardized as far as time spent in interaction, it may be more meaningful if participants are encouraged to spend sufficient time to incorporate feedback.

In the current study, we compared the effects of a non-treatment control group, a face-to-face feedback delivery group, and a computer based feedback delivery system on a variety of variables, including frequency and quantity of alcohol consumption, perceived norms, and alcohol related consequences. We also asked participants to rate

the acceptability of the two active interventions. This is the first study to use a three-group design to study the efficacy of a computer delivered model of personalized feedback. We designed the study to address the following hypotheses:

Hypothesis one: The two active intervention (face-to-face and computer based feedback) groups will report a lower quantity of alcohol consumed and frequency of binge drinking than the control group at a one month follow-up. The reduction in drinking will constitute a significant change for the intervention groups from baseline to follow-up.

Hypothesis two: The active intervention groups will report fewer alcohol related problems than the control group at a one month follow-up. The reduction in alcohol related problems will constitute a significant change for the intervention groups from baseline to follow-up.

Hypothesis three: The computer based model will be as acceptable as the face-to-face feedback model as rated by participants' subjective experience. This will be measured directly upon completion of the intervention.

METHODS

Participants

We screened 300 participants screened from among undergraduate students enrolled in psychology and statistics courses at Auburn University. In order to participate in the intervention phase of the study, the participants met the inclusion criterion of endorsing at least two binge episodes and two or more alcohol related problems in the past 28 days. These criterion have been accepted in past studies using BASICS interventions (Borsari & Carey, 2000; Murphy et al., 2001). Of the 300 participants who completed the initial screening battery, 114 met the inclusion criteria and were invited to participate in the intervention phase of the study. One hundred and six of the invited participants enrolled themselves in the study, and 85 completed the study (28 = FF, 30 = Comp, 26 = control), we dropped one participant from the analysis due to reporting an average number of drinks per week that exceeded 4 SD of the group mean.

From the remaining 299 participants screened, 67.6% were female. The average age was 20.05 (range 18 to 29). With regard to ethnic category, the sample was 86% Caucasian, 9% African American, and 3% Asian. A larger number of participants were part of a Greek organization than anticipated with 42% reporting Greek affiliation. Nearly the entire sample (99%) was single.

Of the 299 participants, 15% reported never drinking alcohol. Seventy-nine percent of participants reported drinking alcohol at least once in the last 28 days. Of

those reporting alcohol use in the last 28 days, 66% reported at least two binge drinking episodes in the past 28 days (5+ drinks for a male and 4+ drink for a female in one sitting). This constituted 53% of the total sample (63% of total males and 47% of total females). Seventy percent of males and 59% of females endorsed at least 2 alcohol related consequences in the past 28 days.

We conducted a power analysis based on effect sizes provided by previous studies. For example, Murphy et al (2001) reported effect sizes ranging from .40 to .52 for participants assigned to a BASIC intervention. These effect sizes were derived from 3-month follow-up data on measures that are similar to those being used in the current study (DDQ, RAPI). Given that our follow-up assessment would occur after 30 days, we anticipated even higher effect sizes. In conducting our power analysis, we estimated an effect size of .4, which is similar to what Murphy et al. reported and corresponds with a large effect. Using G-Power software (Erdfelder, Faul, & Buchner, 1996) and standard estimates (alpha = .05, power = .80), we estimated our required sample to be 22 per group to detect potential differences between the three groups.

Measures

Participants filled out a brief demographic questionnaire. The questionnaire included gender, age, ethnicity, Greek affiliation, year in school, current residence, and marital status. An additional form inquired about willingness to participate in the intervention phase of the study.

The Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985) is a face valid measure of alcohol consumption. The DDQ asks a person to estimate the

typical and maximum number of drinks containing alcohol they consume on each day of the week. The assessment window for the current study was the past 28 days. This measure has been used in several studies on college student drinking (Borsari & Carey, 2000; Murphy et al., 2001). We used a parallel version of the DDQ to obtain the estimated amount of money spent on alcohol over the same period. In the present study, we used the DDQ to assess inclusion criteria. Participants had to endorse at least two heavy drinking episodes (5 or more drinks in one sitting for a male, 4 or more for a female) in the last month to be considered for the intervention portion of the study. We also included the DDQ as a primary outcome measure to determine the presence of between group differences as a function of assigned group.

The Rutgers Alcohol Problem Index (RAPI; White & Labouvie, 1989) is a measure of alcohol related problems common in a college population. The 23 item measure includes items such as; "went to work or school drunk" and "missed a day of school or work." Participants are asked to rate each item for the last 28 days on a 5 point scale with values from 0 (never) to 5 (more then ten times). The RAPI has been shown to be valid and internally consistent when used to asses alcohol related problems among college students (Borsari & Carey, 2000; Neal & Carey, 2004). In this study, we used the RAPI as a measure of severity of alcohol related consequences and as a primary outcome measure. We also used the RAPI to assess inclusion criteria for the intervention phase of the study, as participants needed to endorse at least two alcohol related problems to qualify for participation.

Participants also filled out a brief questionnaire asking about their normal weekly time allocation. We used this information in the feedback for the intervention groups. An additional two questions asked participants to estimate the average number of drinking days per week and drinks per occasion of their same gender peers.

Upon completing the intervention, participants from the two intervention groups completed an acceptability questionnaire. The questionnaire contained questions such as: "How interesting did you find the material?" "How relevant was the material?" and "Would you recommend this to a friend?" Each question was ranked on a 10-point Likert scale ranging from 1, Bad and boring to 10, Excellent. This is similar to other subjective questionnaires of acceptability that have been used in studies evaluating brief interventions with college students (Murphy et al., 2001, Marlatt et al., 1998).

Procedures

Assessment and Screening.

Participants completed the assessment and screening battery, which included the above-mentioned instruments. For those who met inclusion criteria, we used the information from the assessment battery to form a personalized feedback form. Since the assessment battery included all necessary information to create the personalized feedback form, the intervention consisted of one session (Borsari & Carey 2000, Murphy et al., 2001).

Feedback.

We personalized each feedback form according to the information obtained from the assessment and screening battery. The feedback contained eight areas of focus. First,

the feedback contained accurate information about average college drinking in comparison with the perceived norms that the participant indicated in the assessment and screening battery. The participant then received their percentile rank according to quantity of alcohol they typically consume. The percentiles were gender specific and given both in comparison to Auburn University students who drink and the general student body. Participants then received information on general risk factors for heavy drinking. Next, participants received information on blood alcohol content (BAC), including the behavioral effects and potential legal consequences associated with specific BAC levels. We generated a personalized BAC curve from information provided in the DDQ. The participant's RAPI indicated specific alcohol related problems, which the graduate clinician then presented. Presented percentile ranks for RAPI scores indicated how many negative consequences the person was experiencing compared to other Auburn University students. The graduate clinician next presented a table depicting general time allocation, including the amount of time spent in alcohol related activities. The feedback then indicated the amount of calories consumed by this person on a typical night of drinking, and how this may add up over the course of a year. Finally, the graduate clinician presented approximations on the amount of money spent on alcohol per week, per month, and per year. We based the feedback form on the recommendations in the BASICS manual (BASICS, Dimeff et al., 1999). It was similar to those used in previous research studies (Borsari & Carry 2000, Murphy et al., 2001).

Group Randomization

We randomly assigned those who met inclusion criterion and indicated willingness to participate in further research to participate in one of three groups. We used a randomized block design separately for male and female participants in order to ensure that groups were of comparable size and contained similar male to female ratios. It is important to ensure similar gender ratios as drinking tends to differ systematically by gender, as is apparent in the current definition of binge drinking.

Face-to-face.

We used two types of interventions in the procedure. The first intervention consisted of a face-to-face feedback session. This brief one-session feedback intervention model has been used and shown effective in other studies using the BASICS intervention (e.g., Borsari & Carey, 2000; Murphy et al., 2001). The sessions were conducted face-to-face with a graduate student trained in BASICS feedback delivery. The subject was first provided with a copy of the printed out feedback form as described above. Using motivational interviewing, the graduate student clinician highlighted main points from each section of the feedback and asked the participant if they had any thoughts or questions on each section. Sessions lasted an average of 41.00 minutes (SD = 5.73). Participants completed the acceptability measure immediately after the intervention session. An example of a feedback form used in the face-to-face feedback is included as Appendix B

Computerized.

In the computerized intervention, participants also received a copy of the personalized feedback. However, participants did not receive the hard copy of the form until after they had reviewed the feedback via computer. There was no person-to-person feedback delivery. Participants came into a private room where they received the feedback via computer in the form of a PowerPoint presentation. On average participants spent 11.11 minutes (SD = 3.56) working through the feedback. As with the face-to-face intervention, participants completed the acceptability measure immediately after the intervention session. On average, the participants spent 11 minutes going through the feedback. A copy of the Power Point presentation used in the computerized feedback is included as Appendix C.

Control group.

A group of 26 participants acted as a control for this study. The control group received the initial battery and met inclusion criterion. This group received no intervention. We assessed the control group at the one-month follow-up using the primary outcome measures. At the conclusion of the study, we gave the option of receiving a personalized feedback form to those in the control group.

Follow-up

Each participant scheduled a one-month follow-up session. Mean number of days between intervention and follow-up for the intervention groups was 27.5 (SD = 2.6). At this time, they filled out the primary outcome measures including; the RAPI, DDQ, DDQ

modified to reflect alcohol expenditures, time allocation questionnaire, and perceived norms of typical college student use.

Compensation

Each individual who completed the assessment and screening battery received one hour of extra credit. Those who qualified, and were randomly assigned to participate in the intervention phase, received one additional hour of extra credit for their participation in the intervention. All subjects who returned for the one month follow-up completed the follow-up battery, received additional extra credit (one hour for intervention groups, two hours for control group), and were dismissed. Additionally, all those who completed the follow-up session, regardless of their assigned condition, were entered into a raffle for one of two $50 cash prizes. We notified the raffle winners via email to pick up their prizes.

Statistical Analysis

We used a series of one-way analyses of variance (ANOVA) and paired t-tests to examine the effects of the intervention. Dependent variables for the main hypotheses included the total number of binge episodes in the last month, the average number of drinks per week, number of alcohol related problems, and subjective acceptability of the intervention. In all ANOVA's, the feedback group served as the independent variable.

RESULTS

Among the three experimental groups there were no significant differences at screening in terms of gender [χ^2 (2, N = 84) = .131, p = .936], ethnicity [*F* (2,81) = 1.438, p = .243], or age [*F* (2,81) = 2.068, p = .133]. Despite randomization, education was significantly different at screening [*F* (2,81) = 3.645, p = .037]. We summarized demographic information for the three groups in Table 1. The face-to-face group contained 28 participants (68% female, 93% Caucasian). Their average number of drinks per week at baseline was 14.61 (SD = 7.60), with 5.96 (SD = 3.11) binge episodes in the past 28 days, and a score of 8.00 (SD = 4.27) on a measure of alcohol related problems in the past 28 days. The computerized group contained 30 participants (63% female, 86% Caucasian). Their average number of drinks per week at baseline was 16.40 (SD = 11.86), with 6.83 (SD = 3.51) binge episodes in the past 28 days, and a score of 8.41 (SD = 5.63) on a measure of alcohol related problems. The control group contained 26 participants (65% female, 96% Caucasian). Their average number of drinks per week at baseline was 15.35 (SD = 7.53), with 6.38 (SD = 3.91) binge episodes in the past 28 days, and 11.69 (SD = 12.63) endorsed alcohol related problems. Table 2 summarizes alcohol use for participants from all three experimental groups. The three experimental groups were not significantly different in terms of average number of drinks consumed in the past 28 days [*F* (2,81) = 0.271, p = .763], number of drinking occasions in the last 28 days [*F* (2,81) = .330, p = .720], number of binge episodes in the past 28 days [*F* (2,81) =

0.443, p = .644], or number of endorsed alcohol related problems in the past 28 days [*F* (2,81) = 1.653, p = .198].

Hypothesis one:

We hypothesized that the two active intervention groups would report a lower quantity of alcohol consumed, frequency of alcohol consumption, and frequency of binge drinking than the control group at a one-month follow-up. We used a one way ANOVA to test this hypothesis. An overall F test helped to detect any between-group differences, and we conducted post-hoc tests to identify specific group differences. We also hypothesized that the reduction in drinking would constitute a significant change for the intervention groups from baseline to follow-up. We used a series of paired t-test to identify any differences from baseline to follow-up for each of the three groups. Table 3 depicts the results of the ANOVA's analyzing group differences, and Table 4 depicts results of the t-test analyzing within-group changes from screening to follow-up.

Quantity of alcohol consumption: At follow-up, the overall ANOVA did not indicate a significant difference in terms of average number of drinks consumed per week in the last 28 days [*F* (2,81) = 2.613, p = .079, r^2 = .061, α = .507], although there was a non-significant trend in the hypothesized direction. Post-hoc tests did indicate that the computerized feedback group was significantly different in terms of average number of drinks consumed per week in the last 28 days (M = 12.47) as compared to the control group (M = 17.77) (T = 2.007, p = .05). The face-to-face group was not significantly different in terms of average number of drinks per week in the past 28 days (M = 13.11) as compared to the control group (M =17.77) (T = 1.813, p = .076), although there was a

trend in the hypothesized direction. The two active intervention groups did not significantly differ on average number of drinks per week in the past 28 days (T = .28, p = .779).

We used paired sample t-tests to find within group differences on the number of drinks consumed per week from screening to follow-up. The face-to-face group did not show significant decline in average number of drinks consumed per week in the past 28 days from screening (M = 14.61) to follow-up (M = 13.11) (T = 1.624, p = .116). The computerized group showed significant decline in average number of drinks consumed in the past 28 days from screening (M = 16.40) to follow-up (M = 12.47) (T = 2.570, p = .016). The control group showed a significant increase in average number of drinks consumed in the past 28 days from screening (M = 15.35) to follow up (M = 17.77) (T = 2.719, p = .012).

Frequency of alcohol consumption: At follow-up, an overall ANOVA did not indicate significant differences on the number of drinking occasions during the last 28 days as a function of group assignment [F (2,81) = 2.751, p = .070, r^2 = .064, α = .529], although there was a trend in the hypothesized direction. Differences between the control group (M = 10.33) and both the face-to-face group (M = 7.29, T = 1.946, p = .057) and the computerized group (M = 7.70, T = 1.979, p = .053) also approached statistical significance. The two active intervention groups did not significantly differ on average number of binge episodes in the past 28 days (T = .326, p = .746).

We used paired sample t-tests to find within group differences on the number of drinking occasions in the last 28 days from screening to follow-up. The face-to-face

group showed significant decline in terms of average number of drinking occasions over the last 28 days from screening (M = 9.36) to follow-up (M = 7.29) (T = 3.175, p = .004). The computerized group also showed significant decline in terms of average number of drinking occasions over the last 28 days from screening (M = 9.60) to follow-up (M = 7.70) (T = 3.010, p = .005). The control group showed no significant difference in terms of average number of drinking occasions over the last 28 days from screening (M = 10.54) to follow-up (M = 10.38) (T = .233, p = .818).

Binge drinking episodes: At follow-up, participants differed on the number of binge drinking episodes in the past 28 days as a function of group assignment [F (2,81) = 4.598, p = .013, r^2 = .102, α = .764]. The face-to-face group reported significantly fewer binge episodes in the past 28 days (M = 4.54) than the control group (M = 7.27) (T = 2.407, p = .02). The computerized group also reported significantly fewer binge episodes in the past 28 days (M = 4.40) than the control group (M = 7.27) (T = 2.542, p = .014). The two active intervention groups did not significantly differ on average number of binge episodes in the past 28 days (T = .154, p = .878).

We used paired sample t-tests to find differences within groups in number of binge drinking episodes in the past 28 days from screening to follow-up. The face-to-face group showed significant decline in the number of binge drinking episodes in the past 28 days from screening (M = 5.96) to follow-up (M = 4.54) (T = 2.48, p = .020). The computerized group showed significant decline in the number of binge drinking episodes in the past 28 days from screening (M = 6.83) to follow-up (M = 4.40) (T = 3.979, p < .001). The control group showed no significant change in the number of binge

drinking episodes in the past 28 days from screening (M = 6.38) to follow-up (M = 7.27) (T = 1.271, p = .215).

Hypothesis two:

We hypothesized that the active intervention groups would report fewer alcohol related problems then the control group at a one-month follow-up. We tested this hypothesis using a one way ANOVA. An overall F test detected any between-group differences. We used post-hoc tests to determine specific group differences. We also hypothesized that the reduction in alcohol related problems would constitute a significant change for the intervention groups from baseline to follow-up. We used a series of paired t-tests to identify any differences from baseline to follow-up for each of the three groups. As with the analyses for hypothesis one, Table 3 depicts results from the ANOVA and t-tests results are in Table 4.

At follow-up, the participants differed in terms of the severity of alcohol related consequences reported in the last 28 days as a function of group assignment [F (2,81) = 3.442, p = .037, r^2 = .078, α = .630]. The face-to-face group endorsed significantly fewer alcohol related problems in the past 28 days (M = 5.14) than the control group (M = 9.38) (T = 2.097, p = .041). The computerized group did not endorse significantly fewer alcohol related problems in the past 28 days (M = 5.63) than the control group (M = 9.38) (T = 1.867, p = .067), although there was a non-significant trend in the hypothesized direction. The two active intervention groups did not significantly differ on average number of alcohol related problems in the past 28 days (T = .467, p = .643).

We used paired sample t-tests to determine differences within groups from screening to follow-up in regard to average number of alcohol related consequences in the past 28 days. The face-to-face group showed significant decline in the average number of alcohol related consequences in the past 28 days from screening (M = 8.00) to follow-up (M = 5.14) (T = 3.610, p = .001). The computerized group showed significant decline in the average number of alcohol related consequences in the past 28 days from screening (M = 8.40) to follow-up (M = 5.63) (T = 2.493, p = .019). The control group also showed significant decline in the average number of alcohol related consequences in the past 28 days from screening (M = 11.69) to follow-up (M = 9.38) (T = 2.524, p = .018).

Hypothesis three:

We hypothesized that the computer-based model would be as acceptable as the face-to-face feedback model as rated by participants' subjective experience immediately upon finishing the intervention. We used an independent groups t-test to detect any between group differences.

Upon completion of the intervention, the two active intervention groups did not significantly differ on 6 of 11 acceptability items. These items include: how interesting the material was (T = 1.515, p = .134), competency of the researcher (T = .067, p = .947), perceived effectiveness of modifying college student drinking (T = 1.158, p = .251), overall rating of experience (T = 1.621, p = .110), likelihood of changing drinking pattern in the near future (T = .356, p = .723), and likelihood of referring a friend in need (T = .077, p = .939). The two active intervention groups showed significant differences on 5

of the 6 acceptability items with the face-to-face group indicating higher ratings on each of the following items: personal relevance of the information (T = 3.589, p = .001), perceived effectiveness at modifying your drinking pattern (T = 1.992, p = .050), relevance of the session for your situation (T = 2.601, p = .011), perceived benefit (T = 2.350, p = .022), and likelihood of referring a student like yourself (T = 2.679, p = .009).

DISCUSSION

The effectiveness of brief motivational interventions in reducing risky drinking among heavy drinking individuals is well documented in the literature (Baer, Marlatt, Kivlhan, Fromme, Larimer, & Williams, 1992; Emrick 1975). To date there is also support suggesting that BASICS, as a specific intervention technique for heavy college student drinkers, is an effective model (Borsari & Carey, 2000; Murphy et al., 2001; Carey et al., 2006). Recently there has been some question as to whether a personalized feedback, such as the one employed in the BASICS model, could be effectively delivered by means other than with a practitioner. The research has shown that a face-to-face feedback session may not be necessary in order to reduce risky drinking (Agostinelli et al., 1995; Cunningham et al., 2001; Henslee et al., 2006; Walters, 2000; Collins et al., 2002). When conducted without a face-to-face session, personalized feedbacks have been handed to participants in paper form (Murphy et al., 2004), mailed (Agostinelli et al., 1995; Collins et al., 2002), and delivered by computer (Kypri, et al., 2003; Neighbors et al., 2004; Neighbors et al., 2006; Walters, et al., 2005). However, while these studies indicate that personalized feedback delivered in a variety of methods may reduce drinking, there are no studies to date that compare an alternative method of delivery with both a non-treatment control group and a face-to-face group.

With the clear mass use of computers on college campuses across the United States, delivery of a brief personalized alcohol feedback via computer is a relevant

research question. A recent review suggests that research is needed to evaluate computer-based interventions in specific subgroups, including college students (Hester & Miller, 2006). While there is some research with college students in Australia comparing computerized and mailed personalized feedback (Kypri et al., 2003), the research did not compare similar feedbacks. Instead, the internet version was personalized and the mailed version was generic. Additionally, there was no control group. Therefore, the question remains whether a personalized computer based feedback is better than a non-treatment control and as effective as a personalized face-to-face feedback. The current study addressed these questions.

Acceptability of a delivery method is also a relevant research question. Some studies have shown that computerized delivered interventions may be as acceptable as other forms of delivery (e.g. Walters, et al., 2005), but these studies have not used control groups and/or comparable feedback groups. Another study (Kypri, 2003) asked a large sample which type of intervention—face-to-face or computerized—they would prefer, but did not actually expose participants to any intervention. Thus, it is still unclear how individuals may perceive a computerized feedback as compared to a face-to-face interaction.

Alcohol Frequency and Quantity Outcomes

To test the hypothesis that the computerized delivery would be as effective as the face-to-face delivery in reducing quantity of alcohol consumption, we asked participants to report their typical number of drinks per week, their typical number of drinking occasions per month, and their number of binge episodes in the past month at screening

and one-month post intervention follow-up. We used the DDQ to assess differences between groups at follow-up and differences within groups from screening to follow up. We anticipated that both the face-to-face and the computerized intervention groups would report significantly fewer average number of drinks per week, number of drinking occasions per month, and binge drinking episodes in the past month as compared to the no treatment control at follow up.

We found no differences at screening between groups concerning alcohol consumption. At follow-up, the computerized group reported significantly fewer average number of drinks per week and number of binge drinking episodes than the control group. There was also a trend in the hypothesized direction in terms of drinking occasions. The face-to-face group showed similar results with significantly fewer binge episodes as compared to the control group at follow-up and nearly significant trends in terms of average number of drinks per week and number of drinking occasions. At follow-up, there were no differences between the computerized and the face-to-face group in terms of alcohol consumption.

The computerized group also showed significant reduction in average number of drinks per week, number of drinking occasions, and number of binge episodes from screening to follow up. The face-to-face group showed similar results in terms of drinking occasion and binge drinking. However, the face-to-face groups showed a non-significant decline in the average number of drinks per week from screening to follow-up. The control group did not show a significant decline on alcohol consumption from

screening to follow-up, but instead showed a significant increase in the average number of drinks per week from screening to follow-up.

Based on these results, it appears that the computerized version of the personalized feedback is as effective as the face-to-face delivery in reducing alcohol consumption among heavy drinking college students. It is also clear that both computerized delivery and face-to-face delivery are superior to non-treatment groups. This is especially apparent in average number of drinks per week where the control group actually increased over time from screening to follow-up. Finally, the decreases in alcohol consumption seen in the computerized and face-to-face groups are consistent with those reported in other studies evaluating the use of BASICS with college students (Borsari & Carey, 2000; Murphy et al., 2001; Carey, et al., 2006).

Alcohol Related Problems

We also asked participants to fill out the RAPI in order to test the hypothesis that the intervention groups would report fewer alcohol related problems than the control group at follow-up and a significant decline from screening to follow-up. There were no differences between groups at screening; all three groups reported significant decline in number of alcohol related problems from screening to follow-up. At follow-up, the face-to-face group reported significantly fewer alcohol related problems than the control group. The computerized group showed a nearly significant trend suggesting fewer alcohol related problems than the control group, but the difference was not statistically significant.

While all groups showed decline in number of reported alcohol related consequences, it appears that the face-to-face intervention group made more pronounced changes in this area. Motivational interviewing (Miller & Rollnick, 2002) used in face-to-face interventions may have promoted greater behavioral change and vigilance towards alcohol related problems and may account for their greater reduction in problems. This finding is different than other studies that did not find changes in RAPI scores within initial short term follow up (Borsari & Carey, 2000; Carey et al., 2006; Murphy et al., 2001). While research shows decline in alcohol related problems generally across groups at long term follow-ups (Carey et al., 2006; Murphy et al., 2001), the finding that all groups reported fewer alcohol related problems at a short 4-week follow-up is unique.

A number of factors could account for the decrease in reported alcohol related problems in the face-to-face group. It is possible that the intervention successfully led to decreases in alcohol consumption, which in turn led to decreased alcohol related problems. The intervention may have also helped participants identify and avoid situations most likely to lead to alcohol related problems. It is possible that the intervention may have drawn attention to possible alcohol related problems, and while the intervention groups did experience fewer alcohol related problems, they were also primed to be more vigilant to possible problems thus decreasing the rate of reporting relative to the control group. In other words, changes in reported alcohol related problems are not necessarily the result of actually experiencing fewer problems, but instead could be attributed to shifts in perception regarding the risk associated with their

alcohol use. Future research should determine the process by which students reduce their actual and perceived risk for incurring alcohol-related negative consequences. Finally, it is unclear why the control groups showed comparable decline in alcohol related problems.

Acceptability

Each participant assigned to one of the two intervention groups completed an 11-item acceptability measure to test the subjective acceptability of the interventions. There was no difference as to the acceptability of the interventions on 6 of the 11 items such as perceived likeliness of changing college student drinking, likelihood of referring a friend in need, and how interesting the material was. However, the face-to-face group found the material more personally relevant, more effective for modifying their habits, and more beneficial. Therefore, while in many ways the computerized intervention was as acceptable as the face-to-face group, the perceived relevance differed. It is possible that the face-to-face group perceived the material as more personally relevant due to the interaction with the graduate clinician. The motivational interviewing techniques used in delivering the face-to-face feedback may be an effective way of helping individuals perceive greater personal relevance from the intervention (Miller & Rollnick, 2002).

Overall acceptability was comparable and other research suggests that students may feel that computerized alcohol interventions are more acceptable prior to participating in such interventions (Kypri et al., 2003). Therefore, the computerized intervention may be more appealing at the outset and therefore prompt better acceptance of the intervention. However, in the present study when asked there was no indication

that participants would have preferred the computerized intervention to the face-to-face intervention.

Implications of the Findings

There are a number of implications from the findings of this study. Given that the computerized intervention was as effective as the face-to-face intervention, one may postulate that the use of face-to-face interventions in unnecessary. The computerized intervention is less time consuming, taking on average 30 minutes less time to complete for participants. It is also potentially less expensive. No trained practitioner is needed to deliver the computerized intervention. This may help to drive down the price and increase the availability of personalized alcohol interventions. Additionally while the perceived relevance of the material was greater for the face-to-face group, the computerized group felt that the overall experience was just as acceptable.

There is a question though, as to when it may be more prudent to use a face-to-face intervention as opposed to a computerized one. Limited research is available concerning decision making for the use of face-to-face versus non-face-to-face interventions. In the medical field, there are limited studies showing that telemedicine for follow-up is more effective than no follow-up (van den Brink, Moorman, de Boer, Hop, Pruyn, Verwoerd, & van Bemmel, 2007; Kramer, 2007). There is also limited research on the effect of telephone crisis lines meeting the needs of clients (Clarke, Rooksby, & Rouncefield, 2007). Some research uses video conferencing as a form of telemedicine (Barretto, Wacker, Harding, Lee, & Berg, 2006), and therefore creates an intervention setting that is similar to face-to-face. In a study in the United Kingdom,

Lovell, Cox, Haddock, Jones, Raines, Garvey, Roberts, & Hadley (2006) studied the effectiveness of telephone delivered cognitive behavioral treatment (CBT) for obsessive-compulsive disorder with traditional face-to-face CBT. They found that the two treatments were equivalent. However, none of this research gives bases for decisions as to when a face-to-face intervention or a non-face-to-face intervention may be warranted. As computerized interventions become more available, research will need to determine not just how effective they are, but also provide guidelines on the types of clients or clinical situations in which a face-to-face intervention would be preferred. Possible variables to consider in making this decision may include level of comfort with computers, motivation to change, referral source, age, and severity of alcohol related problems. These variables may help predict if a face-to-face or computerized intervention would be more useful to the client and the clinician.

Limitations and Future direction

Due to limited resources and the exploratory nature of this study, the follow-up period was relatively short. While early studies using BASICS used relatively short follow-up periods (Borsari & Carey, 2000) later research used follow-up periods of up to one year (Murphy et al., 2001; Carey et al., 2006). Additionally, in studies with longer follow-up, researchers have shown that control groups may reduce their drinking at the one-year follow-up to match the reduction seen in the intervention groups (Murphy et al., 2001; Carey et al., 2006). Therefore, the between group differences seen at the 4-week follow-up in this study may not hold over a longer follow-up period. However, it is still true that at the 4-week follow-up the intervention groups showed greater reduction in

risky alcohol consumption than the control group, and therefore may enjoy an extended period of risk reduction that the control group does not achieve until one-year follow-up.

Another limitation in this study is the over-sampling of female participants. While it is not uncommon to have a majority of females participate in published alcohol research, the study sample was inordinately female. This is particularly important for this research because there is some evidence that brief interventions for reducing alcohol among heavy drinkers are more effective for females than for males (Marlatt et al., 1998; Sanchez-Craig, Leigh, Spivak, & Lei, 1998). In order to create a more representative sample this study would have benefited from more targeted recruitment of males. While male to female ratios between groups were equivalent in this study, future research should take steps necessary to ensure an equal male to female ratio within groups.

Additionally, though we followed strict randomization in assigning participants to groups, the face-to-face group was significantly different in terms of number of years of education. While level of education between groups is a limitation it does not necessarily draw the results into question as the groups were not significantly different on age or any of the outcome variables at screening.

We also found that a number of results were not statistically significant but showed non-significant trends in the predicted direction such as average number of drinks for the face-to-face group and drinking occasions for both intervention groups. While pre-study power analyses indicated that a sample size of approximately 30 per group would be sufficient to produce adequate power, it seems that we needed more subjects. Indeed, the alpha levels for the non-significant findings fell below the anticipated .80

power level. Future research will be able to use the current finding to generate more accurate sample size estimates.

Alternate methods of delivery for personalized feedback have been shown to be effective (Agostinelli et al., 1995; Cunningham et al., 2001; Henslee et al., 2006; Walters, 2000; Collins et al., 2002; Murphy et al., 2004; Kypri, et al., 2003; Neighbors et al., 2004; Neighbors et al., 2006; Walters, et al., 2005), therefore research into these methods is warranted. Future research on effective delivery of personalized feedback based on the BASICS model may include using email as a medium for delivery. Most college students use email frequently. This would also decrease the time commitment to potential beneficiaries of the intervention, as they would not have to come in for follow-up sessions. For younger populations, social networking websites such as FaceBook and MySpace may also be creatively used to deliver personalized alcohol feedback.

The screening and intervention tools used in the present study are easily converted to internet-only assessment and feedback. Future research may implement a purely internet based method. Taylor and Luce (2003) point out that while many computer-based psychotherapy treatments are available and easily converted to internet programs, few have actually been converted, and even fewer have been studied. While such studies are needed, it is also important to point out potential difficulties such as confidentiality and questions about licensure where therapy may be provided across state lines (Taylor & Luce 2003).

The question remains as to when a face-to-face intervention is warranted as opposed to a computerized intervention in the case of alcohol interventions. No literature

is available to answer this question for a college student population. Future research should focus on the ethical issues and decision trees for determining appropriateness of computer versus face-to-face interventions. Such research may compare recruited research participants with clinically or self-referred individuals to how treatment outcomes are affected by motives for seeking treatment.

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APPENDICES

APPENDIX A: TABLES

Table 1
Demographic Information

Demographics	Face-to-Face (n = 28) Mean (SD)	Computerized (n = 30) Mean (SD)	Control (n = 26) Mean (SD)	Whole Sample (N = 299) Mean SD
Age	19.71 (0.85)	20.57 (1.48)	20.38 (1.49)	20.06 (1.52)
Education	13.39[a] (1.13)	14.18 (1.55)	14.25 (1.08)	13.67 (1.29)
% Female	68	63	65	67
% Caucasian	93	86	96	86
% Greek Affiliated	57	46	38	42

[a] The face-to-face group was significantly different than other groups for years of education ($p < .05$)
No other demographics were significantly different between groups

Table 2
Alcohol Use across Experimental Groups at Screening

Alcohol Measures	Face-to-Face (n = 28)	Computerized (n = 30) Mean (SD)	Control (n = 26) Mean (SD)	Group Differences
Drinks per week	14.61 (7.60)	16.40 (11.86)	15.35 (7.53)	F=CP=CT
Drinking Occasions	9.36 (5.71)	9.60 (3.90)	10.53 (7.04)	F=CP=CT
Binge Episodes	5.96 (3.11)	6.83 (3.51)	6.39 (3.91)	F=CP=CT
RAPI Score	8.00 (4.27)	8.40 (5.63)	11.69 (12.63)	F=CP=CT

No significant differences between groups at screening

Table 3
Alcohol Use across Experimental Groups at Follow-up

Alcohol Measures	Face-to-Face (n = 28) Mean (SD)	Computerized (n = 30) Mean (SD)	Control (n = 26) Mean (SD)	Overall ANOVA Significance
Drinks per week	13.11 (8.12)#	12.47 (9.08)*	17.77 (10.69)	p = .062
Drinking Occasions	7.29 (5.62)#	7.70 (3.98)#	10.38 (6.09)	p = .070
Binge Episodes	4.54 (3.26)*	4.40 (3.43)*	7.27 (4.97)	p = .013
RAPI Score	5.14 (3.67)*	5.63 (4.29)#	9.38 (10.00)	p = .030

# $p < .10$; * $p < .05$
Results listed with Face-to-Face and Computerized groups are independent t-tests compared to control

Table 4
Alcohol Use Within Groups at Screening and Follow-up

Alcohol Measures	Face-to-Face (n = 28) Screening Mean (SD)	Follow-up Mean (SD)	Computerized (n = 28) Screening Mean (SD)	Follow-up Mean (SD)	Control (n = 28) Screening Mean (SD)	Follow-up Mean (SD)
Drinks per Week	14.62 (7.60)	13.11 (8.12)	16.40 (11.86)	12.47 (9.08)*	15.35 (7.53)	17.77 (10.69)*
Drinking Occasions	9.36 (5.71)	7.29 (5.62)**	9.60 (3.90)	7.70 (3.98)**	10.53 (7.04)	10.38 (6.09)
Binge Episodes	5.96 (3.11)	4.54 (3.26)*	6.83 (3.51)	4.40 (3.43)**	6.39 (3.91)	7.27 (4.97)
RAPI Score	8.00 (4.27)	5.14 (3.67)**	8.40 (5.63)	5.63 (4.29)*	11.69 (12.63)	9.38 (10.00)*

* $p < .05$; ** $p < .01$
Results refer to paired t-tests within groups

APPENDIX B: EXAMPLE FACE-TO-FACE FEEDBACK

Personal Feedback for FEMALE

The information provided below is intended to help you evaluate your drinking behavior and whether or not you wish to change it. The information is based on your responses to the survey you completed.

Your Beliefs About Drinking

HOW MUCH DO COLLEGE STUDENTS DRINK?

In the questionnaire you completed, you estimated that the average college student drank **XX** times each week and during each occasion, she consumed **XX** drinks. That's a total of about **XX** drinks per week. Several recent studies of Auburn undergraduates enrolled in university core and psychology courses found that the average female undergraduate actually drinks two times each week and consumes about 2-3 drinks on each occasion, that's a total of only 6 drinks per week. Many college students tend to overestimate what other students actually drink. Although in certain settings such as bars or fraternity parties it may seem like everyone is drinking a large amount, many students are drinking much less than you might imagine.

	Frequency	Quantity	Drinks Per Week
Your estimated norm	**xx times a week**	**xx** drinks	**about xx**
Actual student norm	2 times a week	2-3 drinks	about 6

Your Drinking Pattern

HOW YOUR DRINKING COMPARES TO OTHER COLLEGE STUDENTS.

According to your responses to the questionnaire, you drink **x** days a week, and consume about **xx** *standard drinks* (12 oz. beer, 4 oz. wine, 1 oz. liquor) a week. In comparison to other Auburn University students, your percentile rank is **xx.** This means that you currently drink more than **xx%** of female college students. In other words, only **xx%** of college females drink more than you. When compared *only* to female students who report recent alcohol use, your percentile rank is **xx**. This means that you currently drink more than **xx%** of female college students who drink alcohol. Many students are

surprised to learn that most other students drink less that they do. This may be because heavier drinkers tend to hang out in the same social groups, which creates the false impression that all students drink heavily.

Risk Factors for Alcohol Problems

BINGE DRINKING IS?

Binge drinking means consuming **5 or more drinks** in an evening for a man, or **4 or more drinks** in an evening for a woman. Numerous studies have shown that most of the negative effects of drinking (e.g., accidents, sexual assaults, blackouts, fights, hangovers, etc.) occur on binge drinking nights. Binge drinking can also lead to increased tolerance to alcohol, which is often an early sign of serious alcohol problems or alcohol dependence.

You reported xx binge drinking nights in the past month.
Frequent binge drinking increases the risk for alcohol problem

Blood Alcohol Content

Factors that influence blood alcohol content:
(1) alcohol quantity- the more you drink the higher your BAC
(2) speed of drinking - if you space drinks out your BAC will not be as high as if you drink quickly.
(3) gender- females process alcohol more slowly than males, and will thus have a higher BAC (and feel more impaired) than males.
(4) weight -lighter individuals will have higher BACs than heavier individuals
(5) food- drinking on an empty stomach will increase BAC

Effects of various blood alcohol contents:

- **.02-.06** is associated with pleasant mood and relaxation (i.e., the positive effects of alcohol).
- **.08 and above** defines legal intoxication for those over 21 (for those under 21 any amount of alcohol in your system can result in a DUI arrest) and is associated with slurred speech, delayed reactions, and poor judgment.
- **.15 and above** is associated with blackouts, accidents, poor balance, nausea, and bad hangovers.
- **.30 and above** is associated with slowed heart rate, and possibly coma and death.

We computed your BAC from the information you provided on the questionnaire. For purposes of analysis, we assumed that the alcohol you reported consuming was beer and that you had eaten a light meal before drinking. You BAC levels may be higher if

liquor is consumed or if you do not eat before consuming alcohol.

See the attached sheet and graph to examine your blood alcohol content for your drinking patterns. The text included also describes a summary of how individuals with similar BAC levels are affected.

ALCOHOL-RELATED CONSEQUENCES

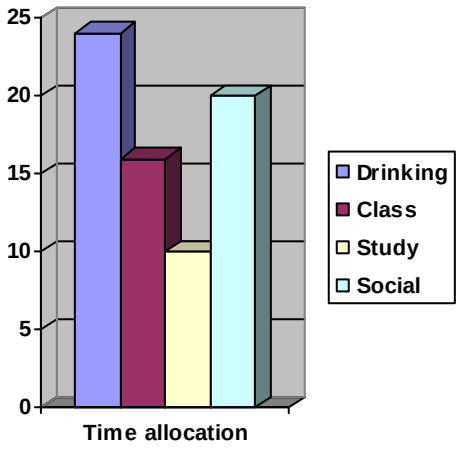
You reported that the following alcohol-related consequences had occurred in the past month. These negative consequences can sometimes be early signs of a more serious alcohol problem or alcohol dependence. Research shows that negative consequences are most likely to occur when binge drinking.

- **Got into fights, acted bad, or did mean things**
- **Missed out on other things because you spent too much money on alcohol**
- **Went to work or school drunk**
- **Neglected responsibilities**
- **Felt like you needed more alcohol than you usually use in order to get the same effect**
- **Tried to control your drinking by using only at certain times of the day or in certain places**
- **Suddenly found yourself in a place you could not remember getting to**
- **Suddenly fainted or passed out**

In comparison to the alcohol-related consequences of other Auburn University students who drink, your percentile rank is **xx**. This means that you experience more consequences than **xx**% of Auburn college students. In other words, **xx**% of students experience more alcohol-related consequences than you.

How You Spend Your Time

This is a list showing how much timeyou spend drinking and recovering compared to other activities. It generally takes at least one hour to recover from each drink, so we added this to the estimate of time spent drinking that you provided on the questionnaire. Although you may be asleep for much of the time you spend "recovering," alcohol prevents deep restorative sleep (that's why you feel so tired



the next day!). Note how your time spent drinking compares to time spent in these other important activities. Many heavy drinking college students experience problems in life areas (e.g., academics, relationships, health/fitness) neglected due to time spent drinking.

Calories from Alcohol

Each standard drink contains about 100 calories. These are "empty calories" since they contain few vitamins or nutrients. On nights when you consume **5 drinks**, that adds up to **500 calories**, roughly the equivalent of **a cheeseburger and fries**. Your weekly consumption of **xx drinks** adds up to **xxxx calories** or **xxxxx.**

In order to burn off the calories from **5 drinks**, you would have to walk for **105 minutes** or run for **42 minutes.** You would need to walk for **xx hours** or run for **xx hours** to burn off the calories you consume from your weekly drinking.

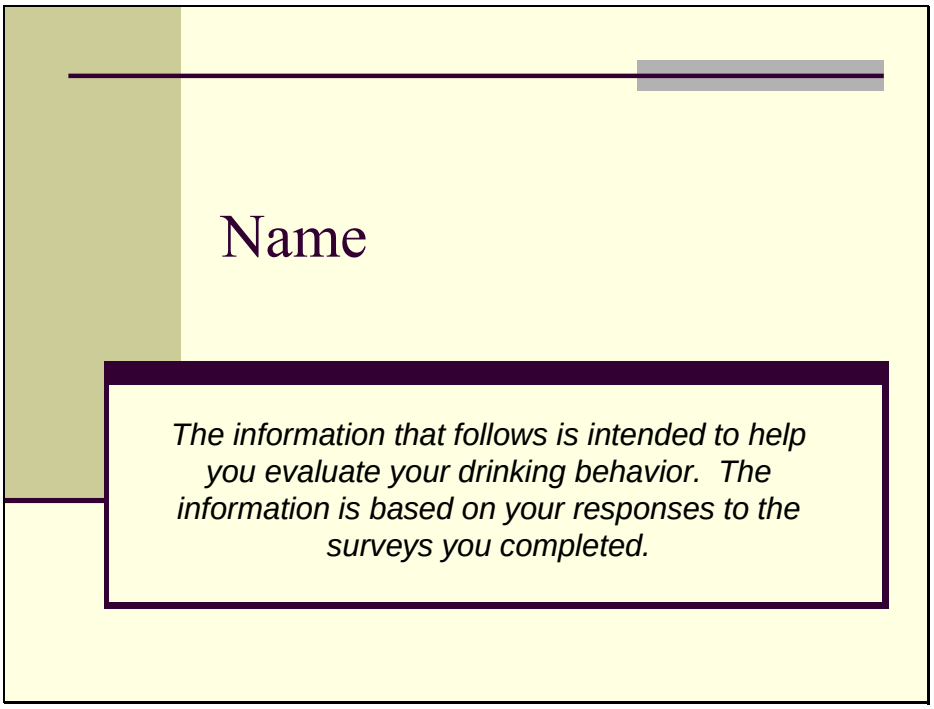
Over the course of a year, your current drinking pattern adds up to **xxx** calories or **xxx** pounds of body fat.

Money Spent on Alcohol and Drugs

Weekly Total = $xx.00
Monthly total = $xx.00

_____
Yearly Total = $xxx.00

APPENDIX C: EXAMPLE COMPUTERIZED FEEDBACK



Instructions

- Please take your time and read through each slide carefully. Each slide will present interesting educational facts about your personal drinking habits. The questions at the end of each section are meant to be answered silently to yourself, please take time to think about each question.
- Please let the research assistant know when you are finished.

What is a "drink"

- Because this presentation will refer to "a drink" or "drinks" it is important that you understand what this means.
- A standard drink of alcohol consists of"
  - 12 ounces of beer,
  - 4 ounces of wine, or
  - 1 ounce of liquor.
- When "drink" or "drinks" is used in this presentation it does not refer to the actual type of alcohol only to a quantity of alcohol equal to one standard drink.

Your Beliefs About Drinking

- ***HOW MUCH DO COLLEGE STUDENTS DRINK?***

- In the questionnaire you completed, you estimated that the average college student drank (**X-X)** times each week and during each occasion, he consumed **(X-X)** drinks. That's a total of about **X** drinks per week.

Your Beliefs About Drinking

- Several recent studies of Auburn undergraduates enrolled in university core and psychology courses found that the average male undergraduate actually drinks **2 times each week** and consumes about **4 drinks on each occasion**. That's a total of **8 drinks per week**.

Your Beliefs About Drinking

- This table compares your beliefs about student drinking on campus to actual drinking behavior on campus.

	Weekly Frequency ↓	Number of Drinks per occasion ↓	Drinks Per Week ↓
Your Estimate of student drinking →	XX times a week	XX drinks	About XX drinks a week
Actual Student Drinking →	2 times a week	4 drinks	About 8 drinks a week

- **Q** - How do these numbers mach up with what you expected?
- Are they surprising to you?

Where beliefs may come from

- Many college students tend to overestimate what other students actually drink. Although in certain settings such as bars or fraternity parties it may seem like everyone is drinking a large amount, many students are drinking much less than you might imagine.
- **Q** – When you think about alcohol use on campus which student groups are you most likely to base your comparisons on?

Your Drinking Pattern

HOW YOUR DRINKING COMPARES TO OTHER COLLEGE STUDENTS.

- According to your responses to the questionnaire, you drink X**X** days a week, and consume about **XX** *standard drinks* (12 oz. beer, 4 oz. wine, 1 oz. liquor) a week.
- In comparison to other Auburn University students, your percentile rank is **XX.** This means that you currently drink more than **XX%** of male college students. In other words, **XX%** of college males drink more than you.

Your Drinking Pattern

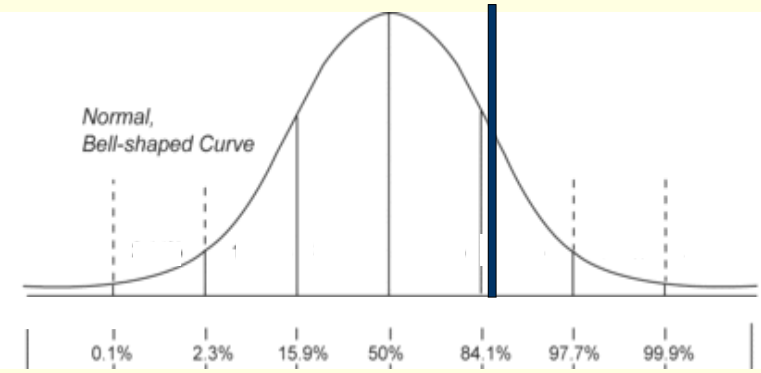
HOW YOUR DRINKING COMPARES TO OTHER COLLEGE STUDENTS WHO DRINK.

- When compared *only* to male students who report recent alcohol use, your percentile rank is **XX**. This means that you currently drink more than **XX%** of male college students who drink alcohol.

Your Drinking Pattern

- Many students are surprised to learn that many other students drink less than they do. This may be because heavier drinkers tend to hang out in the same social groups, which creates the false impression that all students drink heavily.

Percentile Rank



Your Percentile rank is indicated by the bold vertical line. The curve represents the Auburn student body.

Q – Did you imagine that you were drinking more than **XX%** of Auburn students? Is this new information to you? What is your reaction to this?

Risk Factors for Alcohol Problems
Binge Drinking

- Binge drinking means consuming **5 or more drinks** in an evening for a man, or **4 or more drinks** in an evening for a woman.
- Studies show that most negative effects of drinking (e.g., accidents, sexual assaults, fights, hangovers, etc.) occur after binge drinking. Binge drinking can also lead to increased tolerance; often an early sign of serious alcohol problems or dependence.

Binge Drinking

- **You reported X binge drinking nights in the past month. Frequent binge drinking increases the risk for alcohol problems.**
- **Q –** What are your thoughts on the definition of binge drinking?

Blood Alcohol Content (BAC)

- BAC is simply the concentration of alcohol in the blood.
- BAC is typically reported as a percentage of alcohol in the blood.
- Though typically, A single drink containing one ounce (28.3 grams) of alcohol will increase the average person's BAC roughly 0.03%.

Blood Alcohol Content

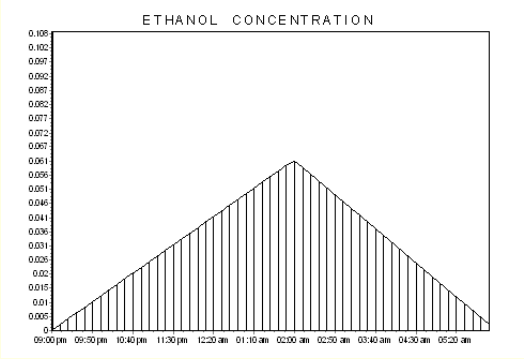
- **Factors that influence blood alcohol content**:
- (1) alcohol quantity- the more you drink the higher your BAC
- (2) speed of drinking - if you space drinks out your BAC will not be as high as if you drink quickly.
- (3) gender- females process alcohol more slowly than males, and will thus have a higher BAC (and feel more impaired) than males.
- (4) weight -lighter individuals will have higher BACs than heavier individuals
- (5) food- drinking on an empty stomach will increase BAC

Effects of various blood alcohol contents

- **.02-.06** is associated with pleasant mood and relaxation (i.e., the positive effects of alcohol).
- **.08 and above** defines legal intoxication for those over 21 (for those under 21 any amount of alcohol in your system can result in a DUI arrest) and is associated with slurred speech, delayed reactions, and poor judgment.
- **.15 and above** is associated with blackouts, accidents, poor balance, nausea, and bad hangovers.
- **.30 and above** is associated with slowed heart rate, and possibly coma and death.
- We computed your BAC from the information you provided on the questionnaire. For purposes of analysis, we assumed that the alcohol you reported consuming was beer and that you had eaten a light meal before drinking. Your BAC levels may be higher if liquor is consumed or if you do not eat before consuming alcohol.

This graph plots what your BAC may look like on what you reported as a typical night drinking. (x drinks from xxpm to xx am – light beer)

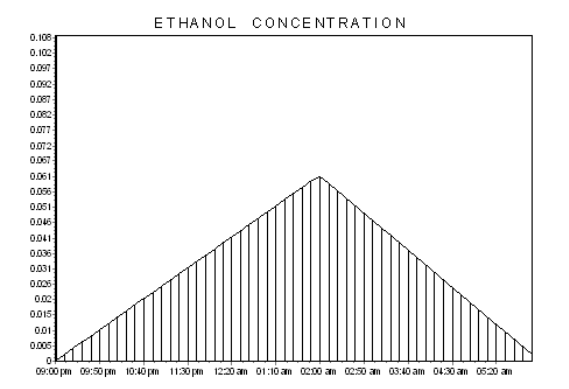
- Peak BAC is typically reached after a person has stopped drinking. This is because the body continues to absorb and metabolize alcohol at a constant rate.
- Also note that alcohol will often stay in the blood for several hours after the last drink.
- Peak BAC .**XXX at X:XX**
- Back to zero at X:XX



This graph depicts what your BAC may look like on what you reported as a heavy drinking night. (x drinks from xxpm to xx am – light beer)

- **Q** – Is this what you expected? What new information does this give you about BAC?

- Peak BAC .**XXX** **at X:XX**
- Back to zero at X:XX



ALCOHOL-RELATED CONSEQUENCES

- You reported that the following alcohol-related consequences had occurred in the past month. These negative consequences can sometimes be early signs of a more serious alcohol problem or alcohol dependence. Research shows that negative consequences are most likely to occur when binge drinking.
- **XXX**
- **XXX**
- **XXX**
- **XXX**
- **XXX**

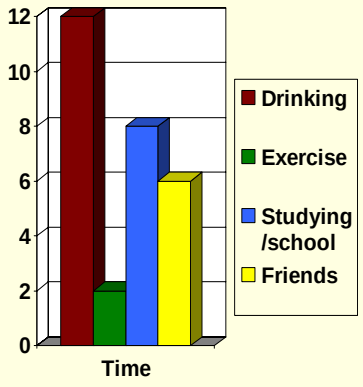
ALCOHOL-RELATED CONSEQUENCES

- In comparison to the alcohol-related consequences of other Auburn University students, your percentile rank is **XX.** This means that you experience more consequences than **XX%** of Auburn college students. In other words, **XX%** of students experience more alcohol-related consequences than you.

- **Q** – What other results, positive and negative, do you see after drinking? How many drinks do you usually need to see positive effects? How about negative effects?

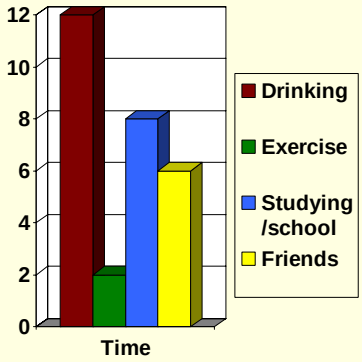
How You Spend Your Time

- This chart shows how much time you spend drinking and recovering compared to other activities in a week.
- It generally takes at least one hour to recover from each drink, so we added this to the estimate of time spent drinking that you provided on the questionnaire.
- Although you may be asleep for much of the time you spend "recovering," alcohol prevents deep restorative sleep (that's why you feel so tired the next day!).



How You Spend Your Time

- Note how your time spent drinking compares to time spent in these other important activities.
- Many heavy drinking college students experience problems in life areas (e.g., academics, relationships, health/fitness) neglected due to time spent drinking.
- **Q** – How much time do you usually set aside for drinking, studying, or other activities?



Calories from Alcohol

- Each standard drink contains about 100 calories. These are "empty calories" since they contain few vitamins or nutrients. On nights when you consume 5 **drinks**, that adds up to **500 calories**, roughly the equivalent of **a cheeseburger and fries**. Your weekly consumption of **XX drinks** adds up to **XXXX calories** or **XXX.**

Working off the calories

- In order to burn off the calories from **5 drinks**, you would have to walk for **105 minutes** or run for **42 minutes.** You would need to walk for **XX hours** or run for **nearly X hours** to burn off the calories you consume from your weekly drinking.
- People are often surprised at how long it can take to burn of calories from drinking.
- Over the course of a year, your current drinking pattern adds up to **XX** calories or **XX** pounds of body fat.
- **Q –** Do you often think about calories from drinking?

Money Spent on Alcohol

- You also reported your typical amount of money spent per week on alcohol.
- Weekly Total = $X.XX
- Monthly total = $XX.XX

  _____
- Yearly Total = $XXX.XX

- **Q – Is this what you expected? Is there anything else you would rather use this money on?**

Thanks

- Thank you for your time. Please schedule a time for follow up.
- Please take your copy of this personalized feedback.

APPENDIX D: SCREENING INFORMATION LETTER

INFORMED CONSENT
For a Research Study Entitled:
Alcohol Intervention Delivery Among College Students - Screening

You are invited to participate in a research study on college student alcohol use. This study is being conducted by Leon Butler, a graduate student at Auburn University, and Dr. Chris Correia, a professor of psychology at Auburn University. We hope to learn more about possible delivery systems for brief alcohol interventions among college students. You were selected as a possible participant because you are an undergraduate at Auburn University. You do not have to be someone who drinks alcohol to participate in this study. **You must be at least 19 years old to participate in this study.**

If you decide to participate in this research project read and sign this informed consent, fill out the attached questionnaires, and return them to the research assistant. The packet contains several questionnaires about your alcohol use and will take approximately one hour to complete. You will be given an extra credit voucher for your participation. If you indicate that you are interested and pending your responses on the questionnaires, you may be contacted in order to schedule up to two more sessions that may last up to one hour each. Those selected will receive additional details, including the risks and benefits of participation in the second phase, in a separate informed consent.

The risks of participating in this study are minimal. You may find answering questions about your alcohol use distressing. In case you should become concerned, we will provide all students with printed information on how to contact the appropriate on-campus resources for support. You will be responsible for initiating and paying for any support. Breaches of confidentiality are highly unlikely because your identifying information will be kept separately from the questionnaires that you complete. The questionnaires will be identified by a code number. Participation in this study is completely voluntary, and you have the option to withdraw your consent to participate at any time. If you decide to withdraw from the study you will not be penalized, and will receive credit for your participation

You will be compensated for one hour of research participation, which earns extra credit in many psychology classes. Check with your course instructor(s) to determine how the extra credit may be applied. Extra-credit earned will be in accordance with the departmental policy. You may become more knowledgeable about the process of psychological research. Finally, you will be helping us to better understand the relationship between personality traits and substance use. We cannot promise you that you will receive any or all of the benefits described.

Your name and any other identifying information will not be associated with the data collected. Once you decide to participate, you will be assigned a code number. All data collected will be associated with this code number. The master code list will be kept in a locked filing cabinet

separate from the data. The master code list will be destroyed after data analysis is complete. This informed consent will be destroyed after three years. Information about this study may be published in a professional journal, and/or presented at a professional meeting. If so, only group data will be presented.

We have a Confidentiality Certificate from the US government that adds special protection for the research information about you. It says we do not have to identify you, even under a court order or subpoena. Still, we may report medical information (if you need medical help), probable harm to yourself or others, or probable child abuse, and the government may see your information if it audits us. This Certificate does not mean the government approves or disapproves of our project.

The Certificate cannot be used to resist a demand for information from personnel of the United States Government that is used for auditing or evaluation of Federally funded projects or for information that must be disclosed in order to meet the requirements of the federal Food and Drug Administration (FDA). The federal auditors can use their audit information only for audit or evaluation of the program. They can't report anything that would aversely affect the research subjects.

You should understand that a Certificate of Confidentiality does not prevent you or a member of your family from voluntarily releasing information about yourself or your involvement in this research. Note however, that if an insurer, employer, or other person learns about your participation and obtains your written consent to receive research information, then the researchers may not use the Certificate of Confidentiality to withhold this information.

Your decision whether or not to participate will not jeopardize your future relations with Auburn University, or the Department of Psychology. If you have any questions, Leon Butler (844-5602 butlelh@auburn.edu) or Dr. Chris Correia (844-6480, correcj@auburn.edu, Department of Psychology) will be happy to answer them.

For more information regarding your rights as a research participant you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334)-844-5966 or e-mail at hsubjec@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED YOU MUST DECIDE WHETHER OR NOT YOU WISH TO PARTICIPATE IN THIS RESEARCH PROJECT. YOUR SIGNATURE INDICATES YOUR WILLINGNESS TO PARTICIPATE.

_____		_____	
Participant's signature	Date	Investigator's signature	Date

_____

Co-investigator's signature Date

APPENDIX E: INTERVENTION INFORMATION LETTER

INFORMED CONSENT FORM
For a Research Study Entitled:
Alcohol Intervention Delivery Among College Students – Intervention Phase

You have been invited to participate in a research study regarding the effects of personal feedback on alcohol use on participant drinking. We hope to learn more about the effects of this type of intervention and different methods of its delivery on student drinking. This study is being conducted by Leon Butler, a graduate student at Auburn University and Dr. Chris Correia, an assistant professor in the psychology department. You were selected as a possible participant because you are: 1) an Auburn University undergraduate student, 2) you are at least 19 years old, 3) expressed an interest in participating in further research, and 4) were identified as a medium to high risk drinker by a screening battery.

You have been randomly assigned to 1 of 3 groups; 1) a group that gets personal feedback about their alcohol use in a 50 minute face-to-face interview with a graduate student in psychology, 2) a group that will receive personalized feedback about their alcohol use delivered via computer, or 3) a control group that will receive no information concerning personal alcohol use. If you choose to continue you will receive your personalized feedback and be asked to come back in approximately one month to complete follow-up questionnaires on alcohol use, this should take approximately 50 minutes. If you are assigned to the control group you will be asked only to come in for the one month follow-up session.

The risks of participating in this study are minimal. You may find answering questions about your alcohol use distressing. You may also find it distressing to learn about your current level of alcohol consumption. In case you should become concerned, we will provide all students with printed information on how to contact the appropriate on and off-campus resources for support. You will be responsible for initiating and paying for any support. Breaches of confidentiality are highly unlikely because your identifying information will be kept separately from the questionnaires that you complete. The questionnaires will be identified by a code number. Participation in this study is completely voluntary, and you have the option to withdraw your consent to participate at any time. If you decide to withdraw from the study you will not be penalized.

You will be compensated for two hours of research participation, which earns extra credit in many psychology classes. Check with your course instructor(s) to determine how the extra credit may be applied. Additionally, all those completing the follow-up session will be entered into a raffle for one of two $50 prizes. We anticipate that the odds of winning the raffle 1 in 45. Additional benefits to you, the participant, are that you may learn more about your alcohol use, although we cannot promise you that you will directly benefit from participation.

Any information obtained in connection with this study and that can be identified with you will remain confidential. To protect confidentiality of all participants, surveys that contain potentially sensitive information about your use of substances will be numerically coded, and this information will be stored separately from this consent form and a sheet with your contact information. We will maintain a master list of participant names, code numbers, and contact information. The master list is necessary to help us collate date collected today and during the follow up sessions and to allow us to send you reminders regarding the follow up sessions. The master code list will be kept in a locked filing cabinet separate from the data. The master code list will be destroyed after data analysis is complete. Information about this study may be published in a professional journal, and/or presented at a professional meeting. If so, only group data will be presented, and no individual participant will be identified

We have a Confidentiality Certificate from the US government that adds special protection for the research information about you. It says we do not have to identify you, even under a court order or subpoena. Still, we may report medical information (if you need medical help), probable harm to yourself or others, or probable child abuse, and the government may see your information if it audits us. This Certificate does not mean the government approves or disapproves of our project.

The Certificate cannot be used to resist a demand for information from personnel of the United States Government that is used for auditing or evaluation of Federally funded projects or for information that must be disclosed in order to meet the requirements of the federal Food and Drug Administration (FDA). The federal auditors can use their audit information only for audit or evaluation of the program. They can't report anything that would adversely affect the research subjects.

You should understand that a Certificate of Confidentiality does not prevent you or a member of your family from voluntarily releasing information about yourself or your involvement in this research. Note however, that if an insurer, employer, or other person learns about your participation and obtains your written consent to receive research information, then the researchers may not use the Certificate of Confidentiality to withhold this information.

Your decision whether or not to participate will not jeopardize your future relations with Auburn University or the Department of Psychology. If you have any questions, we invite you to ask them now. If you have questions later, Leon Butler (butlelh@auburn.edu) or Dr. Chris Correia (844-6480, correcj@auburn.edu) will be happy to answer them.

For more information regarding your rights as a research participant you may contact the Auburn University Office of Human Subjects Research or the Institutional Review Board by phone (334)-844-5966 or e-mail at hsubjec@auburn.edu or IRBChair@auburn.edu.

HAVING READ THE INFORMATION PROVIDED YOU MUST DECIDE WHETHER OR NOT YOU WISH TO PARTICIPATE IN THIS RESEARCH PROJECT. YOUR SIGNATURE INDICATES YOUR WILLINGNESS TO PARTICIPATE.

_____ _____

Participant's signature Date Investigator's signature Date

_____

Co-investigator's signature Date

APPENDIX F: MEASURES

General Information Questionnaire

1. Please indicate your gender: _____ Male (1) _____ Female (2)

2. How old are you? ____ ____ years.

3. How many years of school have you completed (e.g., graduated from high school = 12 years)?

____ ____ years.

4. Are you a member of a fraternity or sorority? _____ Yes (1) _____ No (2)

5. Please check one of the following Ethnic categories:

_____ Hispanic or Latino (1)

_____ Not Hispanic or Latino (2)

6. Please check as many of the following Racial categories that apply to you:

_____ American Indian or Alaska Native

_____ Asian

_____ Black or African American

_____ Native Hawaiian or Other Pacific Islander

_____ White

7. Where do you currently reside?

_____ Off campus house or apart _____ At home with parents/guardians

_____ Fraternity House _____ Campus dormitory

_____ Sorority House _____ Other :_____

8. Are you:

_____Married (1) _____Single living alone (2)

_____Single living with a roommate(s) (3) _____Single living with partner (4)

Date: _____

RAPI

Instructions: Indicate if any of the following have happened during the last 28 days while you were using alcohol, or because of your alcohol use. When marking your answers, use the following code:

0 = never 1 = 1-2 times 2 = 3-5 times 3 = 6-10 times 4 = more than 10 times

1. Not able to do your homework or study for a test	0 1 2 3 4
2. Got into fights, acted bad or did mean things	0 1 2 3 4
3. Missed out on other things because you spent too much money on alcohol	0 1 2 3 4
4. Went to work or school drunk	0 1 2 3 4
5. Caused shame or embarrassment to someone	0 1 2 3 4
6. Neglected your responsibilities	0 1 2 3 4
7. Relative avoided you	0 1 2 3 4
8. Felt that you needed MORE alcohol than you used to use in order to get the same effect	0 1 2 3 4
9. Tried to control your drinking by trying to use only at certain times of the day or certain places	0 1 2 3 4
10. Had withdrawal symptoms, that is felt sick because you stopped or cut down drinking	0 1 2 3 4
11. Noticed a change in you personality	0 1 2 3 4
12. Felt you had a problem with alcohol	0 1 2 3 4
13. Missed a day (or part of a day) of school or work	0 1 2 3 4
14. Tried to cut down or quit drinking	0 1 2 3 4
15. Suddenly found yourself in a place you could not remember getting to	0 1 2 3 4

16. Passed out or fainted suddenly	0 1 2 3 4
17. Had a fight, argument, or bad feeling with a friend	0 1 2 3 4
18. Had a fight, argument, or bad feeling with a family member	0 1 2 3 4
19. Kept drinking when you promised yourself not to	0 1 2 3 4
20. Felt you were going crazy	0 1 2 3 4
21. Had a bad time	0 1 2 3 4
22. Felt physically or psychologically dependent on alcohol	0 1 2 3 4
23. Was told by a friend or neighbor to cut down on drinking	0 1 2 3 4

Alcohol Survey – Screening (DDQ)

Please use the charts below to describe your recent drinking patterns. Please report your drinking in standard drinks, where 1 standard drink equals 12 ounces of beer, 4 ounces of wine, and or a 1 ounce shot of hard liquor.

For the **past month** fill in for each calendar day the number of standard drinks you **usually drink** on that day.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

Now fill in for the **past month** the **maximum number** of standard drinks you had on each calendar day.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

1) During the last 28 days, on how many days did you have any alcohol to drink? _____

2) During the last 28 days, on how many days did you drink beer? _____

3) During the last 28 days, on how many days did you drink wine? _____

4) During the last 28 days, on how many days did you drink a shot of hard liquor? _____

5) During the last 28 days, on how many days did you drink a mixed-drink? _____

6) During the last 28 days, on how many days have you been drunk? _____

7) During the last 28 days, what is the largest number of standard drinks you consumed in one night? _____

8) Approximately how many hours did it take you to finish the largest number of drinks mentioned in #7? _____

9) MALE ONLY: During the last 28 days, on how many days did you have 5 or more standard drinks? _____

FEMALES ONLY: During the last 28 days, on how many days did you have 4 or more standard drinks? _____

10) What is your current weight? _____

Date: _____

Money Allocation Survey

For the **past month** fill in for each calendar day the amount of money you **usually spend** on **alcohol** for that day, whether or not you actually consume all of the alcohol that day. For example, if you purchase a 12 pack of beer on Friday for $12.00 but you actually consume the beer over the course of the week, record $12 in the Friday section. Include money spent to purchase alcohol at restaurants or bars, from liquor or grocery stores, or at parties. Do not include money spent on cover charges unless that cover fee includes drinks. Do not include money spent on alcohol that others consume.

Day	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Amount of money usually spent							

What is the greatest amount of money you spent on alcohol in any **1 month** over the past year?

_____

Date: _____

If you were enrolled in one of the following classes in <u>FALL 2006</u> please circle the class.

Psychology 2010 instructor Bill Buskist
Psychology 2010 instructor Jessica Irons
U-1000 Section 5 – Tuesday at 10:00 – Instructor: Howard
U-1000 Section 8 – Tuesday at 12:30 – Instructor: Howard
U-1000 Section 9 – Tuesday at 2:00 – Instructor: Walls
U-1000 Section 11 – Tuesday at 3:30 – Instructor: Freeman
U-1000 Section 12 – Wednesday at 9:00 – Instructor: Howard
U-1000 Section 13 – Wednesday at 10:00 – Instructor: Fletcher
U-1000 Section 15 – Wednesday at 12:00 – Instructor: Freeman
U-1000 Section 17 – Wednesday at 1:00 – Instructor: Terry
U-1000 Section 19 – Wednesday at 3:00 – Instructor: Clark
U-1000 Section 23 – Thursday at 11:00 – Instructor: Waldrop
U-1000 Section 24 – Thursday at 12:30 – Instructor: Brown
U-1000 Section 26 – Thursday at 2:00 – Instructor: Bowden
U-1000 Section 28 – Thursday at 3:30 – Instructor: Laumer
U-1000 Section 29 – Friday at 10:00 – Instructor: Janska
U-1000 Section 31 – Friday at 1:00 – Instructor: Stewart

If you qualify you will be eligible to participate in further research with this project. Further research will likely take 1 to 2 hours and provide you with <u>2 more hours of extra credit</u>. Your participation in further research will also make you eligible to be part of a raffle for one of two <u>$50 cash prizes</u>.

Are you interested in participating in additional research?

_____ YES _____ NO

If YES, please provide contact information.
If NO, Please provide name for extra credit purposes

E-mail:_____

Telephone:_____

Name (printed):_____

Date: _____

Feedback

Please let us know what you thought of this experience!

1) How interesting did you find this material?

1 2 3 4 5 6 7 8 9 10

Totally bad, boring OK, I guess Excellent, it was great!

2) How personally relevant did you find this information?

1 2 3 4 5 6 7 8 9 10

Not at all relevant Somewhat relevant Very relevant

3) How competent was the research assistant you met with?

1 2 3 4 5 6 7 8 9 10

Not at all competent Somewhat competent Very Competent

4) How effective do you think this intervention would be in modifying college students' drinking patterns?

1 2 3 4 5 6 7 8 9 10

Not at all effective Somewhat effective Very effective

5) How effective do you think this intervention will be in modifying your drinking patterns?

1 2 3 4 5 6 7 8 9 10

Not at all effective Somewhat effective Very effective

6) How would you rate this experience overall?

1 2 3 4 5 6 7 8 9 10

Totally bad, boring OK, I guess Excellent, it was great!

7) Please indicate how likely you are to change your drinking in the near future?

1 2 3 4 5 6 7 8 9 10

I definitely will not change my drinking unsure I will definitely change my drinking

8) Before you were randomly assigned to have either an in-person session or to work with the computer program, which was your preference?

1) the in-person meeting
2) the computer program
3) I didn't have a preference

9) How relevant do you think this session was for your situation?

1 2 3 4 5 6 7 8 9 10

Not at all relevant Somewhat relevant Quite Relevant Very relevant

10) Do you think this session has benefited you in any way?

1	2	3	4	5	6	7	8	9	10
Definitely not		No, I don't think so				Yes, I think so			Yes, Definitely

11) Would you recommend a session such as this to other students like yourself?

1	2	3	4	5	6	7	8	9	10
Definitely not		No, I don't think so				Yes, I think so			Yes, Definitely

12) If a friend was in need of help with his or her drinking, would you recommend a session such as this to him or her?

1	2	3	4	5	6	7	8	9	10
Definitely not		No, I don't think so				Yes, I think so			Yes, Definitely

Alcohol Survey – Follow up (DDQ)

Please use the charts below to describe your recent drinking patterns. Please report your drinking in standard drinks, where 1 standard drink equals 12 ounces of beer, 4 ounces of wine, and or a 1 ounce shot of hard liquor.

For the **past month** fill in for each calendar day the number of standard drinks you **usually drink** on that day.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

Now fill in for the **past month** the **maximum number** of standard drinks you had on each calendar day.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday

1) During the last 28 days, on how many days did you have any alcohol to drink? _____

2) During the last 28 days, on how many days did you drink beer? _____

3) During the last 28 days, on how many days did you drink wine? _____

4) During the last 28 days, on how many days did you drink a shot of hard liquor? _____

5) During the last 28 days, on how many days did you drink a mixed-drink? _____

6) During the last 28 days, on how many days have you been drunk? _____

7) MALE ONLY: During the last 28 days, on how many days did you have 5 or more standard drinks? _____

FEMALES ONLY: During the last 28 days, on how many days did you

have 4 or more standard drinks? _____

8) During the last 28 days, what is the largest number of standard drinks you consumed in one night? _____

9) Approximately how many hours did it take you to finish the largest number of drinks mentioned in #7? _____

10) During the course of this study have you sought other professional treatment for substance related issues? (circle one) **YES** **NO**