

**Incorporation of Normative Feedback into National Alcohol Screening Day: Feasibility,
Acceptability, and Short-term Impact on Alcohol Use and Related Behaviors**

by

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A dissertation submitted to the Graduate Faculty of
Auburn University
in partial fulfillment of the
requirements for the Degree of
Doctor of Philosophy

Auburn, Alabama
August 05, 2017

Keywords: brief intervention, screening, alcohol use, college students

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Abstract

Despite more than one-third of college students reporting alcohol misuse, few seek treatment. National Alcohol Screening Day (NASD) was initiated to promote treatment seeking, yet most attendees do not meet criteria for alcohol use disorder (AUD), and are not provided a treatment referral. Among attendees that are referred, few report intent to follow-up. This suggests that when conducted solely as a screening event, NASD results in missed opportunities to promote reductions in alcohol misuse among moderate and heavy drinking students alike. To address this issue we tested the feasibility, acceptability, and initial efficacy of incorporating a normative feedback intervention into NASD. Data on feasibility and acceptability were collected from NASD clinicians ($N = 17$) and data on acceptability, and immediate and short-term efficacy (i.e., change in perceptions and alcohol consumption) were collected from NASD attendees ($N = 86$). For comparison, a group of non-NASD attendees ($N = 205$) completed similar measures. Results indicate that clinicians found the protocol to be feasible, and that both clinicians and attendees viewed the intervention favorably. After the intervention there was an immediate reduction in the number of attendees who over-estimated normative drinking quantity. At short-term follow-up attendees were less likely than non-attendees to over-estimate normative drinking quantity, and reported greater motivation to reduce drinking; there were no meaningful differences between groups on measures of alcohol consumption or alcohol-related problems. Future work utilizing a randomized design and longer follow-up is needed to determine whether these effects are specific to the intervention, and whether there are emergent effects on alcohol consumption.

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Alcohol use and misuse are common behaviors among college students. Recent findings indicate that nearly 80% of college students have used alcohol in their lifetime, and over 60% report having consumed alcohol in the past month (Johnston, O'Malley, Bachman, Schulenberg, & Miech, 2015). Rates of heavy episodic drinking are similarly high in the college population, with just over 40% reporting having experienced drunkenness (i.e., defined as the subjective state of *feeling drunk*; Kerr, Greenfield, & Midanik, 2006) in the past month, and 35% reporting having engaged in binge drinking (i.e., defined by the authors as five alcoholic beverages on a single occasion) in the past two weeks (Johnston et al., 2015). Given that alcohol misuse is the leading contributor to accidental death among college students (Hingson, Zha, & Weitzman, 2009), and is associated with a wide variety of other adverse consequences for student drinkers (Perkins, 2002; White & Rabiner, 2012), the prevalence of this behavior is a critical problem on college campuses. In the current study we aimed to address this problem by investigating the feasibility, acceptability, and initial efficacy of providing a brief alcohol intervention at the event National Alcohol Screening Day (NASD).

The Pattern of College Student Alcohol Misuse

Despite the high rates of alcohol misuse among students while they are enrolled in college, both before (Brown et al., 2008) and following (Merline, Jager, & Schulenberg, 2008) these years individuals who attend college have lower rates of alcohol misuse than their peers. As such, it appears that for the majority this behavior emerges during the college years and dissipates over the transition to adulthood, rather than steadily increasing over time.

Additionally, the typical pattern of alcohol misuse among college students tends to consist of occasional, socially motivated episodes of heavy drinking (Cooper et al., 2015), which while still associated with increased risk for consequences, is distinct from the pattern of behavior defined in the diagnostic criteria for moderate and severe alcohol use disorder (AUD; American Psychiatric Association, 2013). Regarding symptoms suggestive of moderate and severe AUD, these appear to be far less prevalent among college students, with 4% endorsing daily drinking over the past month (Johnston et al., 2015). Indeed, even among college students who have been mandated to treatment following an alcohol violation, research suggests that the majority describe their typical alcohol use as light to moderate, with few instances of heavy drinking (Barnett et al., 2008). Taken together, these findings suggest that many college students could benefit from brief interventions designed to motivate them to make small changes to their alcohol use patterns (e.g., consuming 1-2 fewer drinks on a given drinking occasion), yet comparatively few present with severe AUD symptoms requiring intensive treatment.

Treatment for College Student Alcohol Misuse

In response to the high prevalence, distinct pattern, and significant consequences of college student alcohol misuse, a substantial amount of research has focused on the development and dissemination of programs aimed at reducing and preventing this behavior within the college population (Cronce & Larimer, 2011; Hingson & White, 2014). In particular, a growing body of evidence demonstrates that brief alcohol interventions (BAIs) centered on personalized feedback lead to reductions in alcohol consumption among students who are already misusing alcohol, as well as those who may be at risk for doing so (e.g., incoming freshmen; Miller et al., 2013; Walters & Neighbors, 2005). Such interventions, typically based on the Brief Alcohol Screening and Intervention for College Students model (BASICS; Dimeff, Baer, Kivlahan, & Marlatt,

1999), combine principles from social psychology (i.e., normative feedback; Cialdini & Goldstein, 2004; Latane, 1981) and motivational interviewing (MI; Miller & Rollnick, 2012), with the aim of demonstrating to students that alcohol misuse is inconsistent with both other students' behavior and the student's own goals (e.g., health, financial responsibility, etc.). While evidence supports the effectiveness of BAIs when delivered as multi-component packages (see Carey, Scott-Sheldon, Garey, Elliott, & Carey, 2016 and Fachini, Aliane, Martinez, & Furtado, 2012 for reviews), with one notable exception (discussed below), to date little evidence pinpoints which individual intervention components elicit behavior change.

In order to improve the overall effectiveness and efficiency of BAIs, researchers have more recently begun investigating which intervention components, in which contexts (i.e., face-to-face, online, and/or mailed feedback; group or individual settings) are associated with behavior change. In a recent review of these efforts, Reid and Carey (2015) found that of 22 possible intervention components, normative feedback (i.e., information about average student consumption) emerged as the most strongly supported mechanism of change. Consistent with a previous review of empirical studies (i.e., Carey, Scott-Sheldon, Elliott, Garey, & Carey, 2012), these authors found that normative feedback delivered during an individual face-to-face session was more often successful in changing students' perceptions than feedback delivered remotely and/or in group settings (Reid & Carey, 2015). In addition, findings from this review suggest that normative feedback is most effective when normative information is gender-specific and based on local student behavior (Reid & Carey, 2015).

Normative Feedback: What is it and How Does it Work?

Most often the information provided during the normative feedback component of a BAI consists of: 1) the recipient's beliefs about the typical student's alcohol consumption pattern, 2)

the recipient's own alcohol consumption pattern, and 3) the actual consumption patterns of local university students (i.e., normative data). These elements are typically presented in a combination of text and graphs, which are used to facilitate a discrepancy-building conversation centered on how the intervention recipient's beliefs and behavior compare to that of the normative sample. In addition to this information, the feedback may also include a percentile rank, which indicates where the intervention recipient's alcohol consumption falls within the normative sample (Carey et al., 2012; Miller et al., 2013).

The rationale behind normative feedback interventions is that college students overestimate the amount of alcohol consumed by their peers (e.g., Perkins, 1999, 2014), and these misperceptions influence personal consumption patterns (Borsari & Carey, 2001; Foster, Neighbors, & Krieger, 2015; Neighbors, Lee, Lewis, Fossos, & Larimer, 2007). Thus, by providing normative feedback, clinicians help students reduce their estimates of the norm, and change their behavior to be more in line with it. In studies that have examined both mediators and moderators of the effects of BAIs, reductions in estimates of the normative rate of alcohol consumption following the intervention have consistently been found to be key to the overall effects (e.g., Neighbors, Larimer, & Lewis, 2004; Walters, Vader, Harris, Field, & Jouriles, 2009; Yurasek et al., 2015). Some researchers have demonstrated that within unselected samples, students reduce their drinking to a level that is more similar to the reference group (e.g., LaBrie, Hummer, Neighbors, & Pedersen, 2008). Furthermore, a number of studies have shown that correcting normative perceptions in groups of heavy drinking and/or at-risk student populations results in reductions in alcohol consumption and experiences of alcohol-related harm, even in the absence of additional BAI components (see Dotson, Dunn, & Bowers, 2015 for a review).

While one intuitive concern is that correcting normative perceptions among individuals who abstain or engage in light or moderate drinking may have iatrogenic effects (i.e., increased consumption; DeJong, 2001), the limited existent research addressing this issue suggests the exact opposite. For instance, in the first known study to include a significant number of alcohol abstinent students in a trial of a universal (i.e., mailed feedback) intervention, a preventative effect was found such that at the one year follow-up, students who received the intervention were significantly more likely to remain alcohol abstinent than those in the control group (Larimer et al., 2007). Similarly, in a study in which a sample of light drinkers and abstainers were presented with computer-delivered normative feedback only, a preventative effect was found (Neighbors et al., 2011). In the same study, receiving normative feedback was also associated with a reduction in perceived alcohol consumption norms (Neighbors et al., 2011), consistent with the notion that even students who consume alcohol below the norm tend to over-estimate it prior to receiving normative feedback. Finally, in a secondary analysis of four studies in which normative feedback was provided to samples that included light drinkers, Prince and colleagues (2014) found some evidence of positive effects (i.e., reductions in average drinks per week) and no evidence of iatrogenic effects, concluding that normative feedback interventions can be safely delivered as universal prevention/ intervention programs.

The Mismatch Between Need for and Receipt of Treatment for Alcohol Misuse

Despite the demonstrated effectiveness of face-to-face BAIs, and particularly normative feedback, relatively few students who could benefit from these kinds of interventions receive any treatment for alcohol misuse. Currently, face-to-face BAIs are most often delivered in a counseling context either to students who have already experienced serious repercussions related to their alcohol use and are seeking treatment to fulfill a legal requirement (i.e., mandated

students), or to those who recognize a need for help and are self-referred. Although alcohol misuse and AUD are among the most common psychiatric problems within the college student population, these are the problems for which students are least likely to seek treatment (Blanco et al., 2008); thus, it is clear that self-referred students are particularly rare. Moreover, of students who meet criteria for AUD but have not received treatment, only two percent view their symptoms as warranting treatment (Wu, Pilowsky, Schlenger, & Hasin, 2007), suggesting that failure to recognize a problem may be an important barrier within this population. In support of this speculation, one study found that although students with either alcohol or marijuana use disorder were unlikely to seek help in general, 90 percent of those students who perceived their substance use as problematic endorsed some form of help-seeking behavior (Caldeira et al., 2009). For those students who could benefit from, yet do not seek, treatment the discrepancy building effect of a normative feedback intervention may be particularly powerful. However, in conjunction with other barriers to treatment (e.g., stigmatized attitudes and lack of knowledge about available resources; Eisenberg, Hunt, & Speer, 2012), due to the way that treatment is currently delivered, failure to perceive a problem inhibits many students who could benefit from treatment from ever getting it.

National Alcohol Screening Day (NASD): Rationale and Typical Implementation

In order to reduce the impact of the above barriers and promote treatment seeking for alcohol misuse and AUD, NASD was initiated (Dupre, Aseltine, Wallenstein, & Jacobs, 2005; Greenfield, Keliher, Jacobs, & Gordis, 1999). This mental health screening day is currently hosted by over 100 colleges and universities (Fishman, 2015), and is held on a single day in early April every year. During the event, anyone who voluntarily attends completes an AUD screening measure (i.e., the Alcohol Use Disorder Identification Test; AUDIT; Babor, Higgins-Biddle,

Saunders, & Monteiro, 2001), and then meets with a trained clinician to review their score and discuss recommendations (Dupre et al., 2005; Greenfield et al., 1999). The primary objectives of NASD have historically been threefold, and include screening, education, and referral. Although Greenfield and colleagues (1999, 2003) have found that these objectives are achieved, and that in some cases NASD attendees even spontaneously reduce their alcohol misuse, to date NASD has been implemented as a screening at which individuals receive referrals for intervention, rather than as an intervention in and of itself (i.e., to our knowledge, neither normative feedback nor any similar treatment have been previously incorporated into the screenings conducted at NASD).

While our previous work (i.e., Gauthier, Zuromski, Diulio, Witte, & Correia, 2015) suggests that common barriers to treatment do not appear to impact NASD attendance, the low rate of attendees who endorsed an intention to seek treatment (i.e., < 5%; Fishman, 2015) following a positive screening for hazardous or harmful use suggest that even those who come to NASD are reluctant to seek further treatment. Additionally, based on our previous study it appears that relatively few NASD attendees (i.e., 1% of NASD attendees and 5% of non-attendees; Gauthier et al., 2015) score at high risk for AUD based on the AUDIT, and thus would be unlikely to receive a referral for treatment, despite the possibility that they would benefit from making small changes to their alcohol consumption patterns. Similarly, we found that a large proportion (i.e., 68%) of NASD attendees fell at low risk for alcohol-related harm (Gauthier et al., 2015). While under the current NASD procedures such individuals still meet with a clinician to have their screening form scored and receive feedback, this feedback is generally limited to confirming that the student meets safe use guidelines; thus, no information that has been shown to have a preventative effect for future problematic drinking is provided. In sum, despite the fact

that NASD does not appear to be impacted by the common barriers to AUD treatment, it appears that its employment solely as an AUD screening event limits the potential effects that attendance could have on alcohol misuse among the students who participate in it. In attempts to increase the beneficial effects of attending NASD for heavy, moderate, and even light drinking students, in the current study we tested the feasibility, acceptability, and initial efficacy of incorporating a face-to-face normative feedback intervention into the typical NASD procedures. This trial is consistent with recent recommendations for further research on the effects of BAIs delivered in novel settings (e.g., primary healthcare; DeMartini, Fucito, & O'Malley, 2015). Additionally, because the existent NASD structure already entails a brief one-on-one meeting between clinicians and attendees (i.e., for the purposes of scoring and feedback), we felt that adding an intervention component into NASD would be unlikely to raise the common concerns typically associated with the implementation of face-to-face BAIs (e.g., space limitations, cost, and provider burden; Carey, Scott-Sheldon, Carey, & DeMartini, 2007; DeMartini et al., 2015). However given that, to our knowledge, the feasibility and acceptability of incorporating an intervention into NASD has not previously been tested, measures of each were included.

The Current Study

In the current study we sought to provide initial evidence on the feasibility, acceptability, and efficacy of the use of a normative feedback intervention at NASD (henceforth *NASD+*). To this end, data were collected in association with three distinct aims.

The goals of Aim 1 were to determine whether it was feasible for clinicians to enact the normative feedback protocol, and to provide initial data on clinicians' opinions on the use of *NASD+* during the screening day. To address these goals, we assessed the feasibility (including self-reported fidelity to the protocol and perceptions of feasibility), and acceptability of *NASD+*

among clinicians who were trained in and delivered the protocol during the NASD event. Given that neither training in the NASD+ protocol, nor delivery of it during NASD, required substantial time commitments from clinicians, and that the protocol is both circumscribed and specific, we expected that the majority of clinicians would report good fidelity to the treatment protocol and would indicate that conducting the intervention was feasible. Additionally, given that all clinicians were graduate students in a clinical psychology program that promotes the scientist-practitioner model, and that there is a large body of evidence supporting normative feedback, we expected that the majority of clinicians would rate the intervention as acceptable.

Under Aim 2 we examined NASD attendees experiences at and opinions of NASD, assessing both their general reactions to the event and their perceptions of the most interesting and most impactful elements of the intervention. Based on our previous study (i.e., Gauthier et al., 2015), we predicted that the majority of attendees would report having a positive experience at NASD. Consistent with findings from studies that indicate students typically prefer normative feedback over other types of information provided during a brief alcohol intervention (Butler, Silvestri, & Correia, 2014; Miller & Leffingwell, 2013), we also expected that attendees would rate the normative feedback elements (i.e., campus norms and personal comparison to norms) as both the most interesting and impactful components of the NASD+ intervention. Additionally, we anticipated that immediately after receiving NASD+, attendees would be less likely to overestimate normative patterns of alcohol consumption, and that they would report increased motivation to change their alcohol consumption (i.e., a reduction in pre-contemplation scores and an increase in contemplation scores compared to the pre-intervention assessment).

Lastly the goal of Aim 3 was to determine the short-term effects of the NASD+ intervention on attendees' perceptions and behavior, two weeks after the event. To assess these

effects, we evaluated differences between attendees and a sample of non-attendees on measures of perceived norms, motivation to change, various aspects of alcohol consumption, and recent experiences of alcohol-related problems, while controlling for pre-intervention scores on these measures in both groups. We anticipated that compared to non-attendees, NASD attendees would: a) be less likely to over-estimate normative alcohol use, b) endorse greater motivation to change their alcohol use (i.e., lower scores on the pre-contemplation and higher scores on the contemplation subscales of the readiness to change measure), c) report taking more steps to reduce their alcohol use (i.e., higher scores on the action subscale of the readiness to change measure) and d) report less frequent/ lower quantities of alcohol consumption and fewer recent experiences of alcohol-related problems.

For clarity, methods and findings associated with Aim 1 (i.e., utilizing only clinician participants) are reported separately from those associated with Aims 2-3 (i.e., utilizing student participants). All recruitment methods and study procedures were approved by the university's institutional review board (IRB).

Methods Aim 1: Feasibility and Acceptability of NASD+ among Clinicians

Participants and Procedures

Clinician recruitment and training. Consistent with the clinical psychology department's typical procedure for recruiting NASD clinicians, in the current study graduate students enrolled in the clinical psychology doctoral program at the present university were recruited via e-mail, approximately three weeks prior to NASD. In this e-mail it was explained that although all NASD clinicians would be trained in and expected to use the NASD+ protocol during NASD, completion of any study measures was completely voluntary. Graduate students who were interested in serving as NASD clinicians were asked to communicate their interest by

signing up for an initial group training session. Of 24 clinical psychology students contacted, 17 (71%) signed up for a group training session.

Group training sessions. In the week prior to NASD, all clinicians participated in one of two (i.e., one geared toward first-year students with limited clinical experience, the other geared toward students in at least their second year of training) 30- to 45-minute group training sessions. During these sessions, clinicians were provided a brief overview of the rationale for adding the normative feedback intervention to NASD and were given detailed information about all intervention procedures (see Appendix A1 for procedural manual). Clinicians were provided the exact materials that would be used during the NASD event, as well as a personal copy of all materials to practice with outside of the group session. During the group sessions clinicians were walked through each element of the intervention, and given the opportunity to practice scoring the screening measure and filling out the personalized feedback form (see Appendix A2, p. 71) for an example participant. In addition, during the training session geared toward first-year clinical students, a brief overview of motivational interviewing techniques (i.e., open-ended questions, affirmations, reflections and summaries; OARS skills; Miller & Rollnick, 2012) was given, in order to encourage flexibility in the use of sample responses provided in the procedural manual. At the end of the group training, all clinicians were asked to schedule an individual training session for the following week, in order to role play the intervention and clear up any remaining questions prior to NASD.

Individual trainings. Each clinician received a 20- to 30-minute individual training session from one of two advanced doctoral students (henceforth *trainers*) in clinical psychology. At the beginning of the individual training sessions, clinicians were given the opportunity to ask questions about all aspects of the intervention. After clinicians indicated that they were

comfortable with the procedures, each participated in an individual role-play of the entire NASD+ intervention. For all role plays, the trainer acted as a female student who reported that she consumed alcohol on two to three days a week, consumed approximately 10-15 alcoholic beverages per week, over-estimated the norm, and scored at moderate risk for alcohol related harm. This profile was chosen to give clinicians practice delivering the intervention to an individual within the target population (i.e., non-treatment-seeking students who would benefit from reducing their alcohol consumption). After the role-play, all clinicians were provided with feedback on their implementation of the intervention. Additionally techniques for modifying the intervention for effective use with students who fall outside of the target population (e.g., non-drinkers) were discussed. This information was also provided in written form in the procedural manual (see Appendix A). At the end of the individual training sessions, clinicians were given verbal information about the current study and the option to participate in the research study by completing measures about their experiences using the NASD+ intervention following the event. It was explained that participation in the study was completely voluntary, and that more information would be provided via e-mail the evening of NASD.

NASD event. All 17 clinicians who underwent training conducted interventions at NASD. Clinicians were asked to provide services for at least half an hour, but had the option to volunteer longer if they desired. The total number of interventions conducted at NASD varied by clinician (range = 1 – 14), with 12 indicating that they conducted five or fewer, and the remaining five indicating that they conducted eight or more.

Clinician participants. After NASD, all NASD clinicians were sent an e-mail containing information about the brief online clinician experiences survey and a link to the survey. Clinicians who clicked on the link were initially presented with an information letter, which

included a brief description of the purposes of the survey and a reminder that participation was voluntary, anonymous, and would not be compensated. Upon accepting the terms of the information letter, clinicians were asked to complete feasibility and acceptability measures (see below). All 17 NASD clinicians completed the survey. Due to the small sample size and potential for demographic information to identify individual clinicians, such information was not collected. The survey took clinicians an average of approximately four minutes to complete.

Measures

Feasibility. The feasibility of the NASD+ protocol was assessed in the clinician survey in two ways.

Fidelity checklist. First, clinicians were asked to indicate how frequently (utilizing a 1, *never* to 5, *always* scale) they utilized each of 12 specific intervention elements (e.g., *student's normative perceptions*) across the total number of NASD+ interventions they conducted. These items were based on a checklist written to assess clinician fidelity to a normative feedback intervention protocol utilized in another study (i.e., Prince, 2014), and were edited to assess only elements included in the NASD+ protocol. In the current study, the checklist was used to determine the extent to which clinicians self-reported fidelity to the intervention protocol.

Opinions of Feasibility. In addition to the fidelity checklist, clinicians were asked to use a 1 (*strongly disagree*) to 7 (*strongly agree*) scale to respond to the following two questions, written to assess their overall opinions of the feasibility of the NASD+ protocol: 1) *it was feasible to enact the intervention protocol*, and 2) *the training I received adequately prepared me for providing clinical services at NASD*. Responses to these items were used to describe clinicians' overall perceptions of the feasibility of enacting the NASD+ protocol.

Acceptability. Clinicians' perceptions of the acceptability of the NASD+ protocol were assessed with the following five questions, written for the purposes of this study: 1) *it was easy to build rapport with NASD attendees while following the protocol*, 2) *I preferred the intervention used this year to that used in previous years* (only answered by clinicians who have provided services at NASD previously) 3) *I think this intervention protocol should be used during future NASD events*, 4) *NASD attendees appeared to like receiving norms clarification*, and 5) *I believe attendees preferred the protocol used this year to that used previously* (only answered by clinicians who have provided services at NASD previously). Clinicians rated each item on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale to indicate their agreement with the statement. In addition to the items described above, clinicians were asked to provide comments in a write-in box about their experience using the NASD+ protocol.

Results Aim 1: Feasibility and Acceptability of NASD+ Protocol

Fidelity to Treatment Protocol

In order to determine how frequently clinicians provided each element of the NASD+ protocol while conducting interventions at NASD, we computed descriptive statistics in SPSS version 23.0 for each of the twelve items comprising the fidelity checklist. The proportion of clinicians who endorsed each of the scale points (i.e., 1, *never* to 5, *always*) for each item are provided in Table B1.1.

All clinicians indicated that they *always* included the following four elements: *discuss attendee's estimates of campus drinking norms*, *describe and discuss actual campus norms*, *provide AUDIT risk score*, and *provide referral list/counseling options*. Additionally, all but one clinician indicated that they *always* included the following elements: *discuss attendee's typical quantity*, and *provide attendee with their percentile rank*. Fifteen of 17 clinicians indicated that

they *always*: *discussed the attendee's typical frequency of drinking, provided an explanation of perceived norms, and addressed attendees questions and/or concerns*. Although there was more variability regarding inclusion of *discussion of the tendency to over-estimate drinking norms*, the majority (i.e., 13) of clinicians indicated that they *always* included this element, while three indicated that they included this element *most of the time*, and one indicated that he or she included this element *sometimes*. In contrast to the 10 elements described thus far, clinicians were less likely to include the two elements *discuss attendee's symptoms of alcohol use disorder* and *discuss attendee's heaviest drinking day quantity*. Approximately half of the clinicians indicated they *always* included a discussion of AUD symptoms, and one-third indicated that they *always* included a discussion of the attendee's heaviest quantity.

In sum, for the majority of intervention elements, and particularly those that were provided in written form on the NASD Feedback Summary (see p. 71 for sample form), fidelity to the protocol was excellent. However, when elements were to be provided in verbal form only, there was a greater degree of variability, with some clinicians being particularly unlikely to include such elements. As is discussed below, some clinicians also used the write-in box at the end of the survey to explain that fewer NASD attendees than they had anticipated endorsed symptoms of AUD. These comments touch on another possible explanation for the lower frequency of including certain intervention elements: clinicians may have found it difficult and/or unnecessary to include elements that address AUD/ heavy drinking with alcohol-abstinent and light-drinking students.

Clinician Opinions of Feasibility

To describe clinicians' perceptions of the feasibility of enacting the NASD+ protocol, we computed descriptive statistics for the two opinions of feasibility items. The proportion of

clinicians who endorsed each of the scale points (i.e., 1, *strongly disagree* to 7, *strongly agree*) for each item are provided in Table B1.2. Based on responses to these items it appears that clinicians were in strong agreement that the protocol was feasible to enact at NASD, and that the training that they received was adequate.

Clinician Perceptions of Acceptability

As with the feasibility items, we computed descriptive statistics (i.e., *ns* and percentages) for the five items written to assess clinician perceptions of acceptability (see Table B1.2). Across all items clinicians provided favorable ratings, with most clinicians endorsing either *agree* or *strongly agree* for most items. In particular, clinicians provided the strongest agreement ratings for the two items about *their* preferences for NASD procedures. Specifically, the majority of clinicians indicated they believe the NASD+ protocol should be used in the future, and the majority of those who had provided services at a prior NASD event indicated a preference for the NASD+ protocol over the former NASD procedures. Although over two-thirds of clinicians also indicated that they *agreed* or *strongly agreed* that *attendees appeared to like receiving the normative feedback components of the NASD+ intervention*, there was more variability in the responses to this item. The pattern of responses was similar for the item *I believe attendees preferred this protocol to the prior NASD protocol*, to which only clinicians who had provided services at a prior NASD event were asked to respond.

Taken together, responses to the acceptability items suggest that clinicians had favorable opinions of the NASD+ protocol, but may have had some concerns about attendees' opinions of the procedures. These general perceptions were reflected in clinicians' write-in responses about the NASD+ procedures, in which many clinicians indicated that they had a positive experience utilizing the intervention (e.g., *it was highly structured and easy to follow—the whole event*

seemed to go smoothly), but that they also had concerns about whether most NASD attendees would benefit from receiving it (e.g., *there were not as many people who overestimated students' amount of drinking as I or the researchers expected...*). NASD attendees' perceptions of the intervention, and the extent to which the intervention achieved its intended effects, were assessed directly in Aims 2 and 3, to which we now turn our attention.

Methods Aims 2-3: Attendees' Perceptions and Effects of NASD+ Intervention

Participants and Procedures

Participants were undergraduate students, age 18 or older, enrolled in psychology courses at a large southeastern university. There were no specific inclusion and/or exclusion criteria for study participation; however, participant groups were formed based on whether or not potential participants elected to attend NASD. Regardless of group, participation in each time-point of the study was compensated with course credit. Details regarding the recruitment, study procedures, and demographic characteristics of participants are reported separately by group below.

Advertising and recruitment: NASD attendees. As is described earlier, NASD is an alcohol screening event that is hosted at a number of colleges and universities on a single day in April. At the current institution, NASD was advertised through posters and flyers posted around campus in the weeks prior to the event. These advertisements described NASD as a free alcohol screening event open to all university students, staff, and faculty; they also provided details about the opportunity for any student currently enrolled in a psychology course to receive extra credit in exchange for attending the event. In addition to these print advertisements, NASD was advertised on the psychology department's web-based research management system (i.e., SONA system), as an extra credit opportunity open to all psychology students. Finally, to ensure that psychology students were aware of the event and the opportunity to gain extra credit, the day

before NASD an e-mail was sent to all psychology students enrolled in the SONA system reminding them about the event. At the current institution, NASD was held from 10am – 2pm in the on-campus psychological training clinic. In order to participate in the screening (and to be eligible to participate in the study as a NASD attendee), students simply presented to the on-campus psychology clinic during the event hours.

Pre-assessment. Upon arrival at the on-campus psychological training clinic, all NASD attendees completed the paper and pencil self-report pre-assessment survey. This survey included measures assessing attendees' alcohol use patterns, motivation for changing their patterns, and perceptions of normative alcohol use on campus (see Table B2.1 for list of included measures). Each packet of pre-assessment measures was marked with a participant number in advance of NASD; participants used this number to link their data across assessment sessions.

Intervention. After completing the pre-assessment measures, each NASD attendee met with a trained clinician (described in Aim 1) for the NASD+ intervention. During the intervention, the clinician reviewed and scored the attendee's pre-assessment survey, conducted the normative feedback portion of the intervention, and then went on to discuss the attendee's AUD symptoms, referral options, and tips for safe drinking (see Appendix A1 for procedural manual). The entire intervention occurred in the context of a brief (i.e., 10- to 15-minute) conversation about the attendee's alcohol use, and throughout the intervention the clinician utilized techniques consistent with the BASICS model and motivational interviewing. At the end of the intervention, all NASD attendees were provided verbal information about the current study and the opportunity to participate in follow-up surveys at two distinct time-points (i.e., immediate and delayed follow-up surveys). Those who indicated an interest in participating in the immediate follow-up survey were directed to the study area. Those who indicated that they

could not, or did not want to, participate in the immediate follow-up survey were informed that they would be contacted by e-mail with information about the delayed follow-up survey in exactly two weeks. Thus, attendees who did not participate in the immediate follow-up were still given the opportunity to participate in the delayed follow-up. All NASD attendees were granted course credit for their participation in the screening event, regardless of whether they chose to complete additional research measures.

Immediate follow-up survey. NASD attendees who were interested in participating in the immediate follow-up survey proceeded from the NASD+ intervention session to the study table, where the principal investigator provided verbal and written information about the immediate and delayed follow-up surveys. Those who agreed to participate in the immediate follow-up survey were given a packet containing all paper and pencil study measures, and directed to a nearby conference room where they completed the measures. During the immediate follow-up survey, NASD attendees completed additional measures about their alcohol use pattern, completed measures about their motivation to change and perceptions of campus norms for a second time, and completed a measure about their opinions of NASD (see Table B2.1 for list of included measures). At the end of the immediate follow-up survey, the principal investigator reminded each NASD attendee to record their participant number and to look for an e-mail about the delayed follow-up survey.

Delayed follow-up survey. Two weeks after NASD, the principal investigator e-mailed all NASD attendees (regardless of whether or not they participated in the immediate follow-up survey) with information about the delayed follow-up survey. Those who were interested in participating followed the e-mail instructions to access the online survey through the psychology department's web-based research system. Upon accessing the survey, participants were presented

with the information letter for the delayed follow-up portion of the study. After agreeing to the terms of the letter, participants were asked to first fill in their participant code number, then to complete the study measures (see table B2.1).

NASD attendee participant characteristics. A total of 92 individuals attended NASD, all of whom were undergraduate students majoring in psychology. Of all 92 NASD attendees, 86 (93%) participated in our study during at least one of the follow-up surveys, and consented to the use of their data provided at all time-points (i.e., including the pre-assessment survey) for the purposes of the current study. Only the data provided by the 86 NASD attendees who consented to participate in the study was analyzed, and henceforth these 86 participants are referred to as NASD attendees. NASD attendees were predominantly female (69%; $n = 59$), and described their ethnic/racial background as non-Hispanic (95%; $n = 82$) and Caucasian (92%; $n = 79$). Although less common, some NASD attendees identified primarily as African American (7%; $n = 6$), and the remainder identified primarily as Asian American (1%; $n = 1$). The average age of NASD attendees was 19.70 years (S.D. = 1.51; range = 18 –25). The majority of NASD attendees were enrolled in their first (55%; $n = 47$) or second (15%; $n = 13$) year of college, although students enrolled in their third (14%; $n = 12$) and fourth (16%; $n = 14$) years also attended. Just under half of all NASD attendees indicated that they were members of a Greek organization (i.e., fraternity or sorority; 47%; $n = 40$).

Advertising and recruitment: Non-attendees. Immediately after the NASD event closed, an advertisement for the non-attendee pre-assessment survey (generically titled *April 9th-16th psychological survey*) was posted on the SONA system website. All students enrolled in a psychology course could view the survey advertisement, but only students who did not attend NASD were eligible to sign-up for and participate in the survey. In order to recruit a sufficient

number of participants for the comparison group, the non-attende pre-assessment survey was available for completion for the entire week following NASD.

Pre-assessment. Upon signing up for the pre-assessment survey on SONA systems, non-attendees were linked to the survey-hosting site. There, they were first presented with the information letter for the pre-assessment survey, followed by information about the opportunity to participate in the delayed follow-up survey. After indicating their agreement with the terms of the information letter, non-attendees were asked to generate and record participant code information (to be used in the delayed follow-up), and then to complete the survey measures. Measures included in the non-attende pre-assessment survey paralleled those completed by NASD attendees during the pre-assessment session.

Delayed post-assessment. Two weeks after NASD, the principal investigator e-mailed non-attendees who participated in the pre-assessment survey, with information about the delayed follow-up survey. The procedures for the delayed follow-up survey for non-attendees were identical to those reported for the delayed post-assessment session for NASD attendees (see above); however, data for each group were collected in separate surveys for the purposes of data management.

Non-attende participant characteristics. A total of 205 individuals who did not attend NASD participated in the online non-attende pre-assessment survey. Non-attendees were similar to NASD attendees in terms of gender (76% female; $n = 159$), racial/ethnic background (91% Caucasian, $n = 205$; 96% non-Hispanic; $n = 197$), and age (average age = 19.61 years; S.D. = 1.62; range = 18 – 29). Most non-attendees were enrolled in their first year of college (55%; $n = 113$), although students in their second (15%; $n = 31$), third (16%; $n = 33$), fourth (10%; $n = 20$), and fifth or more (4%; $n = 8$) years also participated. As did NASD attendees, just under

half of the non-attendees indicated that they were members of a Greek organization (45%; $n = 93$). Pairwise comparisons conducted in SPSS version 23.0 (i.e., chi-square analyses for categorical variables and a t-test for age), demonstrated that there were no significant differences between NASD attendee and non-attendee participants in terms of demographics (p 's $> .15$).

Measures

As indicated in the procedures section for each group, participants completed measures (described below) of their alcohol consumption and related beliefs and behaviors in various assessment sessions over the course of approximately two weeks. While information about when and how each measure was used in each group is provided below, readers are directed to Table B2.1 (p. 75), which provides a summary of this information for rapid reference.

NASD screener. The NASD screener consisted of a demographics form and the Alcohol Use Disorders Identification Test (AUDIT; Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). The AUDIT is a self-report measure consisting of ten items that assess for the presence and frequency of various aspects of hazardous and/or harmful alcohol use patterns (e.g., frequency and quantity of use, presence of dependence symptoms) over the past year. Each item is scored on a 0 to 4 scale, with total scores ranging from 0 to 40. Although there is some variability in recommended clinical cutoffs (Meneses-Gaya, Zuardi, Loureiro, & Crippa, 2009), in the current study we used the cutoffs recommended by the group that organizes NASD (i.e., Screening for Mental Health, Inc.) which are as follows: < 8 is indicative of low risk, 8-18 is indicative of moderate risk, and > 18 is indicative of high risk for an AUD. The AUDIT is a widely used screening measure, with strong psychometric properties (Meneses-Gaya et al., 2009). In the current study, participants in both groups completed the AUDIT during the pre- and delayed post- assessment surveys. AUDIT scores were used to describe and compare the alcohol

consumption patterns of participants in both groups, across assessment periods. Across assessment periods and participant groups the internal consistency of the AUDIT (Cronbach's α range = .80 - .82) was good.

Perceived drinking norms questionnaire. As described below two questions, based on those utilized in the National College Health Assessment (NCHA; American College Health Association, 2014), and previous studies of college student's perceptions of alcohol use (e.g., Thombs, 2000), were used to assess participants' perceptions of normative alcohol use on campus.

Perceived normative frequency (PNQ-F). Participants' perceptions of the typical student's frequency of alcohol consumption (PNQ-F) was assessed with the question *How often do you think the typical college student (of your gender) drinks?* (response options included: *once a month or less, 2-3 times a month, 1-2 times a week, 3-4 times a week, and nearly every day*). Participants' responses on these items were compared against the gender-specific campus norms, which were initially derived from the university's participation in the National College Health Assessment (NCHA). As local campus norms were already being used in the psychology training clinic for brief alcohol interventions with mandated students, for the purposes of the current study the norms that were previously prepared for clinical purposes were used.

In order to determine the effect that the intervention had on participants' tendencies to over-estimate normative frequency, responses were dichotomized such that a score of 1 indicates an over-estimate (i.e., for women selecting *1-2 times a week* or more frequently; for men selecting *3-4 times a week* or more frequently) and 0 indicates an accurate or underestimate. Because the intent of normative feedback interventions is to reduce over-estimates of the norm

rather than to ensure accurate estimates, we viewed grouping accurate and underestimates together as appropriate.

Perceived normative quantity (PNQ-Q). Similarly, participants' perceptions of the number of drinks the typical college student consumes during a single drinking occasion were assessed with the question *How much do you think the typical college student (of your gender) drinks on a typical drinking night?* (response options included: *0-2 drinks, 3-4 drinks, 5-6 drinks, 7-8 drinks, and 9-10+ drinks*). As with perceived normative frequency, responses to this question were dichotomized based on gender-specific campus normative data, such that a score of 1 indicates an over-estimate (i.e., for women selecting *3-4 drinks* or a greater quantity; for men selecting *5-6 drinks* or a greater quantity) of normative quantity, and 0 indicates an accurate or underestimate.

NASD attendees completed the perceived drinking norms questionnaire during the pre-, immediate-post, and delayed-post assessment surveys; non-attendees completed it during the pre- and delayed post assessment surveys. Each of the dichotomously scored (i.e., 1 = over-estimate, 0 = accurate/ under-estimate) perceived norms variables were analyzed separately to determine whether receiving the intervention immediately reduced the number of NASD attendees that over-estimated each aspect of the alcohol consumption norms (Aim 2), and to compare the rates of over-estimation of the norms between NASD attendees' and non-attendees at two weeks post intervention (Aim 3).

Alcohol consumption. As described below, alcohol consumption was measured in two ways to determine both participants' typical alcohol consumption patterns, and their specific alcohol use behavior in the two weeks immediately preceding and immediately following the day they completed the pre-assessment survey.

Daily Drinking Questionnaire. First, students used the Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985) to report on their typical alcohol consumption pattern. The DDQ is an open-ended calendar on which participants indicate the typical number of drinks they consumed on each day of the week over the past month. To determine the typical weekly quantity of alcoholic beverages that each participant consumes, the number of drinks reported on each day of the week are summed. In the current study, responses on the DDQ were used to determine participants' typical quantity of alcoholic beverages consumed per week prior to, and immediately following the day they participated in the pre-assessment survey, and to compare NASD attendees and non-attendees at two weeks post intervention.

Specific alcohol consumption questions. Participants were also asked to report on three of their specific alcohol consumption behaviors in the two weeks prior to and the two weeks following completion of the pre-assessment survey, in order to provide a more exact description of their alcohol consumption patterns over the specified time frames. These behaviors included alcohol consumption frequency (i.e., *During the last two weeks, on how many days did you drink alcohol?*), largest quantity of alcoholic beverages consumed on a single occasion (i.e., *During the last two weeks, what is the largest number of standard drinks you consumed in one night?*), and frequency of binge drinking days (i.e., *during the last two weeks, on how many days did you have four/five or more standard drinks?*) which was assessed using the cutoffs of ≥ 4 drinks for women, ≥ 5 drinks for men (NIAAA; 2015). Each of the specific alcohol consumption questions were analyzed separately to determine participants' alcohol consumption behaviors at pre-assessment and to compare NASD attendees' behaviors to those of non-attendees during the two weeks following NASD.

Motivation to change. The three subscales (i.e., pre-contemplation, contemplation, and action) of the 12-item self-report Readiness to Change Questionnaire (RCQ; Rollnick, Heather, Gold, & Hall, 1992) were used to assess various aspects of participants' motivation to change, among those who reported lifetime alcohol consumption (i.e., non-drinkers responses on this measure were not interpretable and thus were not included in these analyses). The RCQ, was created based on the transtheoretical model of change (Prochaska, Redding, & Evers, 2008). Each of the three subscales consists of four items assessing the specified stage of behavioral change (Forsberg, 2003; Rollnick et al., 1992). Across the three subscales, items are rated on a 1 (*strongly disagree*) to 5 (*strongly agree*) scale, and are worded such that higher scores reflect greater endorsement of the corresponding stage. Although the RCQ has also been used as a unitary measure of motivation to change (e.g., Collins, Carey, & Otto, 2009), given that some evidence suggests normative beliefs are differentially related to the stages of change (Cho, 2006), we assessed each subscale separately. In the current study, the RCQ was administered to NASD attendees at pre-assessment, immediate post-assessment, and delayed post-assessment, and to non-attendees at pre-assessment and delayed post-assessment. The pre-contemplation and contemplation scores achieved by NASD attendees at pre- and immediate post assessment were analyzed to determine whether the intervention had an immediate effect on NASD attendees' readiness to change (Aim 2). Because the items on the action subscale refer to behavior change (e.g., *I am trying to drink less than I used to*), it would not have been possible for attendees to change on this subscale in the brief period between the pre- and immediate post assessments; as such the action subscale was not included in the analyses for Aim 2. For Aim 3, we analyzed scores from both participant groups on all three subscales at pre- and delayed post- assessment to determine whether receiving the NASD+ intervention impacted readiness to change at delayed

follow-up. Internal consistency for the pre-contemplation scale was lower than is conventionally considered acceptable (Cronbach's α range = .60 - .62) for both groups during the pre-assessment period, and for the attendee group at immediate post assessment (Cronbach's α = .66). Although internal consistency on the pre-contemplation subscale within this range has been reported in other studies of college student drinking (e.g., Harris, Walters, & Leahy, 2008), and it improved somewhat during the delayed post-assessment period (Cronbach's α range = .75 - .81), findings related to the pre-contemplation subscale should be interpreted cautiously. Internal consistency for both the contemplation (Cronbach's α range = .77-.90) and action (Cronbach's α range = .78-.94) subscales of the RCQ were adequate across both groups during all assessment periods. The ordering of the strength of the internal consistency observed across the three subscales in the current study (i.e., pre-contemplation being the weakest, followed by contemplation, then action) is consistent with what has been reported elsewhere (i.e., Harris et al., 2008; Rollnick et al., 1992).

Alcohol-related problems. The 23-item self-report Rutgers Alcohol Problem Index (RAPI; White & Labouvie, 1989) was used to assess participants' experiences of consequences associated with alcohol consumption. Items represent problems that vary in severity (e.g., *had a bad time; suddenly found yourself in a place that you could not remember getting to*), and each is scored on a 0 (*none/never*) to 3 (*more than 5 times*) frequency scale, to represent how often it occurred over a specified timeframe. In the current study, both NASD attendees and non-attendees completed the RAPI at two time points: NASD attendees completed the RAPI during the immediate follow-up survey (to decrease respondent burden on the pre-assessment survey because responses about the experience of past problems should not have been impacted by the intervention) and the delayed post-assessment, and non-attendees completed the RAPI during the

pre- and delayed post-assessment surveys. Internal consistency for the RAPI was good (Cronbach's α range = .84-.93) across time points for both participant groups.

Opinions of NASD questionnaire. Immediately after receiving the NASD+ intervention, NASD attendees were asked to complete a series of questions about their experiences at the event. As in a previous study (Gauthier et al., 2015), we included five questions assessing participants' subjective impressions of the screening experience (e.g., *after meeting with a clinician did you begin to feel like it would be easier to get help?*). In addition, NASD attendees were asked to select which intervention element they found to be 1) the most interesting and 2) the most impactful, from a list of six possible options (i.e., *symptoms of AUD, potential dangers of AUD symptoms, how much other students drink, how I compare to other students, treatment options, and other/write in*). In order to assist with interpreting these preferences, NASD attendees were also asked to provide a brief write-in response about why they found the selected element(s) to be most interesting and/or most impactful. These items were used to describe NASD attendees' impressions of NASD in general, and the NASD+ intervention specifically.

Results Aims 2-3: Attendee Perceptions and Intervention Effects

NASD Attendees Perceptions and Immediate Effects of NASD+

Attendee perceptions. NASD attendees' perceptions of the entire event, and of the specific NASD+ intervention elements, were assessed during the immediate follow-up survey. In order to describe attendees' patterns of responses to these items, descriptive statistics were computed in SPSS version 23.0. Although 86 NASD attendees participated in the study, not all attendees completed all items. Descriptive statistics for each item were based on only the attendees who provided a response to that item; thus, total n 's vary.

First, as can be seen in Table B2.2, a total of 77 NASD attendees responded to the five multiple-choice items that were used to assess NASD attendees' subjective impressions of the screening experience. The majority of NASD attendees (96%; $n = 74$) indicated that discussion with a clinician at NASD clarified whether they had significant symptoms of alcohol use disorder, with most (87%; $n = 67$) indicating that they did not have such symptoms (i.e., either by selecting this response option, or by indicating such in the write-in response). Similarly, only 1% ($n = 1$) of attendees indicated that they received a referral for alcohol treatment while at NASD. Despite most NASD attendees not having significant symptoms of AUD, the majority indicated that they felt comfortable speaking with a clinician (i.e., either about their problems or despite not having problems) and 100% of attendees indicated that attending the event made them feel that it would be easier to get help for a mental health problem either at present, or should they wish to do so in the future. Although 4% ($n = 3$) of NASD attendees responded *yes* to the question *do you feel attending NASD had any negative impacts on you (describe)*, all three write-in responses (reported verbatim in the note of Table A2.2) highlight that the attendee received information about alcohol use on campus, without explicitly stating that such information was harmful. Thus, overall responses to these items suggest that few NASD attendees had moderate to severe AUD symptoms, yet the vast majority had a positive experience meeting with their NASD clinician.

In addition to providing responses about their experience at NASD in general, attendees were asked to select from a list the intervention element that they found to be 1) the most interesting and 2) the most impactful, and to briefly explain their selections. A total of 79 attendees provided a response to the question about the most interesting element, and 74 provided a response about the most impactful element. In addition to computing descriptive

statistics (i.e., proportion of participants selecting each element) in SPSS version 23.0 for these items, we constructed 95% confidence intervals around each proportion using the Wilson procedure (Newcombe, 1998; Wilson, 1927).

As can be seen in Table B2.3 the normative feedback elements of the NASD+ intervention were rated as the most interesting by the majority of attendees, with 56% ($n = 44$) indicating that the campus normative data was the most interesting, and another 35% ($n = 28$) indicating that information comparing the participant's behavior to the norm (i.e., percentile rank) was the most interesting. The 95% confidence intervals around the proportion of participants who selected these elements overlapped with one another, but not with any of the other elements on the list (see Table B2.3). Of those who responded about the *most interesting* element, 89% ($n = 70$), provided an explanation of why they chose the specific element. Most commonly, participant responses suggested that they had assumed the typical college student drank more and/or more often than the normative data showed, and this was the case for those who reported drinking above the norm (e.g., *I thought I was below average, but really I was [drinking] above average*) as well as for those that did not (e.g., *I found out that about 20% of guys here don't drink, which is refreshing for me because I don't drink*).

Regarding the intervention element that NASD attendees found to be most impactful, again a majority of participants selected one of the normative feedback elements (i.e., 32% selected personal comparison to norm and 24% selected normative data); however slightly more than a quarter (26%; $n = 19$) selected information about campus mental health resources, and an additional 14% selected dangers of AUD symptoms in response to this question. The 95% confidence intervals around these proportions overlapped for these four elements (see Table B2.3). Sixty-eight (92% of those who provided a response to this item) NASD attendees

explained their choice, and although a number of responses echoed those given about why attendees selected an element as most interesting (e.g., *it made me realize a lot of students don't drink as much as I do; I realized a lot of other people don't drink either*), there were also a number of responses that suggested attendees would use referral information for either themselves or to help someone else (e.g., *there is help if I need it; would be useful to refer someone*).

Immediate effects. In addition to assessing NASD attendees' subjective impressions of the event and intervention, we were interested in determining whether receiving NASD+ had an immediate impact on NASD attendees' responses on the perceived norms questionnaire, and/or their motivation to decrease their alcohol consumption. To assess whether fewer students over-estimated the norms after receiving the NASD+ intervention, we conducted two McNemar's tests (McNemar, 1947) to compare the proportions of students who over-estimated each aspect (i.e., utilizing the dichotomously scored perceived normative frequency and perceived normative quantity variables) of the norm during the pre- and immediate-post assessment surveys. The McNemar's test is conceptually similar to a paired samples t-test but is appropriate for dichotomous variables. To determine whether attendees' motivation to change was impacted by the NASD+ intervention, we conducted paired sample t-tests utilizing participants' pre-assessment and immediate follow-up scores on the two scales of the RCQ that assess cognitions (i.e., pre-contemplation and contemplation; these comparisons were limited to attendees who reported lifetime alcohol consumption).

Prior to conducting these analyses, the data were screened for univariate outliers; no outliers (i.e., scores falling beyond 3 standard deviations above or below the mean) were identified on these measures. Across analyses, the degree of missing data was low: of the 86

NASD attendees who consented to participate in the study, 78 (91%) had complete data on the perceived norms questionnaire items, and of 68 NASD attendees who consented to participate in the study and reported lifetime alcohol consumption, 62 (91%) had complete data on the RCQ scales. Missing data were handled using the multiple imputation module in SPSS version 23.0. Based on recommendations from Bodner (2008), six data sets were imputed. Because SPSS does not report pooled results across imputed data sets for the McNemar's test, we report the results of these tests including only participants with complete data ($n = 78$), as well as the trend across the six imputed data sets. SPSS does compute pooled results across imputed data sets for dependent samples t-test, therefore for these tests we report the pooled results.

Immediate effect on perceived norms. Regarding perceived normative frequency, contrary to expectations, a similar number of NASD attendees over-estimated the norm (64%; $n = 50$) at immediate follow-up compared to the pre-assessment (58%; $n = 45$); an exact McNemar's test indicated that this change in proportions was not statistically significant ($p = .38$). Across the six tests conducted with imputed datasets, the pattern of results remained consistent (i.e., p 's ranged from .30 - .69). Regarding perceived normative quantity, consistent with expectations, fewer participants over-estimated the norm at immediate follow-up (19%; $n = 15$), compared to during the pre-assessment (37%; $n = 29$). The exact McNemar's test indicated that this change was statistically significant ($p < .01$), and across the six tests conducted with imputed data sets, the results were similar (p 's ranged from .01 - .06). These results suggest that the NASD+ intervention did not have a clear impact on estimates of normative frequency; however, it did impact estimates of normative quantity in the intended way for a sizeable group of NASD attendees.

Immediate effect on motivation to change. Results from the dependent samples t-tests conducted with the pre-contemplation ($t [67] = -0.50, p = .63$) and contemplation ($t [67] = 0.81, p = .43$) scales of the RCQ, indicate that the NASD+ intervention did not have an immediate impact on NASD attendees' readiness to change. Responses on both the pre-contemplation and contemplation subscales of the RCQ remained consistent from pre-assessment to immediate follow-up.

Short-term Effects of NASD+: Comparison of Attendees to Non-Attendees

Prior to conducting our main analyses under Aim 3, descriptive statistics and correlations on relevant study variables were computed in Mplus version 7.3 (Muthen & Muthen, 1998 - 2015). All univariate outliers were fenced in at three standard deviations above or below the mean, missing data were handled with full information maximum likelihood (FIML), and we used the robust maximum likelihood (MLR) estimator (Satorra & Bentler, 1994) to protect against the influence of non-normally distributed variables (Brown, 2006). Descriptive statistics for each group at each time point are provided in Table B3.1. Correlations, computed separately by group, are provided in Tables B3.2 and B3.3.

To determine whether receiving the NASD+ intervention had an impact on attendees' perceptions of alcohol use and/or on their alcohol consumption behaviors in the weeks after NASD, we compared NASD attendees and non-attendees responses on the delayed follow-up survey measures. Specifically, each of the eleven (i.e., perceived normative frequency, perceived normative quantity, RCQ-pre-contemplation, RCQ-contemplation, RCQ-action, DDQ, AUDIT, recent frequency, recent largest quantity, recent binge frequency, and RAPI) measures completed during the delayed follow-up were used as the outcome variable in a separate regression analysis, with dummy coded group membership (i.e., non-attendees were coded as 0; NASD attendees

were coded as 1) as the predictor variable. In each of these analyses, score on the specified variable during the pre-assessment was also included as a predictor, in order to control for initial score on the variable. Thus, parameter estimates for group indicate differences between the groups at delayed follow-up, controlling for pre-assessment. As noted in Table B3.4, for binary predictor variables (e.g., group) we report beta values that represent group differences in standard deviation units (i.e., StdY in Mplus).

The degree of missing data across variables included in each analysis was acceptable given the missing data technique utilized (e.g., Newman, 2003) and was evenly distributed across groups. The proportion of complete data for each pair of variables ranged from 47-100%. In order to improve the accuracy of estimates of missing data, the following variables, which have been shown to be associated with alcohol consumption, were included as auxiliary variables in the eight analyses in which the outcome variable was continuous: sex, age, year, Greek involvement, and GPA (Collins, Schafer, & Kam, 2001; Enders, 2010). Additionally, in these models, pre-assessment and delayed follow-up scores on the variables of interest not being tested in the specified model were included as auxiliary variables, and missing data was handled using full information maximum likelihood (FIML). Because auxiliary variables cannot be used to accommodate missing data in analyses with dichotomous outcomes, and FIML cannot be used when data is missing for all variables other than the predictor variables, in the two models assessing perceived norms, only participants who had complete data were included (total *n*'s for each analysis are reported in Table B3.4). As such total *n*'s varied across analyses.

Regarding differences in participants' perceptions about both others (i.e., perceived norms) and their own (i.e., cognitive components of readiness to change) alcohol consumption following NASD+, we found mixed support for our hypotheses (see Table 3.4). Contrary to our

expectations, but similar to the pattern found in Aim 2, groups did not differ in terms of estimates of normative frequency of alcohol consumption; however, as hypothesized, NASD attendees were less likely to over-estimate ($\text{StdY} = -0.63, p = .01$) normative quantity of alcohol consumption than were their non-attendee counterparts. Similarly, although groups did not differ on the pre-contemplation subscale of the RCQ, NASD attendees scored higher on the contemplation subscale at the delayed follow-up (i.e., indicating greater motivation to change), than did non-attendees ($\beta = 0.34, p = .02$).

Results reflecting differences in behavior (i.e., action subscale of the RCQ, alcohol use variables, and experiences of alcohol-related problems) were also mixed. As expected, NASD attendees scored higher (i.e., endorsed taking more steps to reduce alcohol consumption) on the action subscale of the RCQ ($\beta = 0.31, p = .02$), than did non-attendees. However, NASD attendees did not report lower levels of alcohol use and/or related problems than did non-attendees at the delayed follow-up. Indeed, the only significant finding among the alcohol consumption and alcohol-related problems variables was on the largest quantity item, with NASD attendees reporting a *larger* quantity on this item at delayed follow-up than non-attendees ($\beta = 0.27, p = .04$).

Post-hoc Analyses: Controlling for Interactions and Participation in Rodeo

Upon examination of the data collected for this study, we suspected that there was a potential for an interaction to exist. Specifically, we considered that among NASD attendees, only those scoring at moderate to high levels on the variables included in the study at pre-assessment (i.e., higher risk drinkers) would be likely to report changes on the outcome variables at the delayed follow-up. To test this idea, we conducted additional regression analyses with each of the continuous variables. In these analyses, we included the interaction between group

membership and pre-assessment score on the variable of interest. A significant interaction would indicate that participation in NASD+ had a differential impact on the outcome of interest that depended on severity of that outcome prior to the intervention. Contrary to our expectations, none of the interactions tested were significant, and other than the difference on the action scale of the RCQ being reduced to non-significance, the overall pattern of results remained consistent when the interactions were included (see Table B3.5).

Lastly, although based on our previous research about NASD attendees and non-attendees we expected alcohol consumption to be similar across groups, prior to running the study we noted that a large campus event that has been traditionally associated with heavy drinking (i.e., a concert and rodeo event, hereafter known as *Rodeo*) was scheduled to occur after NASD, but before we closed the non-attendee pre-assessment survey. Thus, for all NASD attendees, this event occurred between the pre-assessment survey and the delayed follow-up survey, whereas for non-attendees, the event occurred either before or after the pre-assessment survey, depending upon when they completed it. Because Rodeo is a day-long outdoor event at which hundreds of students tailgate, participate in a variety of rodeo games (e.g., bull-riding, calf roping, etc.), and attend a concert performed by a nationally recognized artist (i.e., Alan Jackson in 2015), we thought it highly plausible that students' attendance at this event may have impacted their reported alcohol use. As such, we included the question *Did you attend the Alpha Psi Rodeo (hosted on April 11, 2015)* in both the pre-assessment and delayed follow-up surveys completed by non-attendees, and the delayed follow-up survey completed by attendees. In combination with the date/time variables that are automatically generated by the survey software, responses to these items allowed us to determine if participants attended Rodeo 1) prior to completing the pre-assessment survey, 2) between the pre-assessment and the delayed follow-up

survey, or 3) not at all. Based on this information, we created dummy coded variables to represent each of the possible options (i.e., Rodeo attendance prior to pre-assessment: 0 = did not attend; 1 = attended; Rodeo attendance between pre and delayed post-assessment 0 = did not attend; 1 = attended) with not attending Rodeo at all serving as the reference group. To account for the potential impact that attendance at Rodeo may have had on study participants' reports across assessment periods, we conducted follow-up analyses in which we controlled for both of the dummy coded Rodeo variables. As can be seen in Table B3.6, Rodeo attendance prior to the pre-assessment survey appeared to impact participants' estimates of normative quantity of alcohol consumption, in addition to group membership. Additionally, across a number of alcohol consumption variables (i.e., DDQ, AUDIT, drinking frequency, and RAPI) Rodeo attendance in the time between the pre-assessment and delayed follow-up surveys was associated with an increase on the variable of interest (although these associations were marginally statistically significant). Regarding the impact that controlling for Rodeo attendance had on the association between group membership and our outcome variables, as can be seen by comparing tables B3.4 and B3.6, NASD attendance remained associated with a lower likelihood of over-estimating normative quantity, and higher scores on the action subscale of the RCQ, but not with a higher largest consumption quantity or higher scores on the contemplation subscale of the RCQ.

Discussion

In this study we were interested in examining the feasibility and acceptability, as well as the immediate and short-term effects, of integrating a brief normative feedback intervention into the NASD procedures. Data were collected from NASD clinicians, NASD attendees, and non-attendees at a single university at various time points during the weeks surrounding NASD, in association with our three major aims. We expected that NASD clinicians would indicate that

they found the protocol to be feasible, and that both clinicians and NASD attendees would view the protocol favorably. Additionally we anticipated that receiving the NASD+ protocol would immediately reduce attendees' estimates of normative alcohol consumption and increase their motivation to reduce their own drinking. We also hypothesized that over the two weeks following NASD, attendees would report greater reductions in their alcohol consumption and experiences of alcohol-related problems than would non-attendees. Results partially supported these hypotheses. Consistent with our expectations for Aim 1, clinicians reported good fidelity to the treatment protocol and provided favorable ratings across feasibility and acceptability items. With respect to our expectations under Aim 2, findings were mixed. As we expected, NASD attendees indicated that they found the normative feedback components to be among the most interesting and impactful aspects of the intervention and reduced their estimates of normative alcohol consumption quantity during the immediate follow-up. However, the intervention had no immediate impacts on NASD attendees' estimates of normative drinking frequency, nor on their self-reported motivation to change. Similarly, results under Aim 3 were partially consistent with our hypotheses. As expected, two weeks after receiving NASD+, attendees were less likely than non-attendees to over-estimate normative consumption quantity, and their scores on the contemplation and action subscales of the motivation to change measure were higher. However, there were no differences between NASD attendees and non-attendees on estimates of normative drinking frequency, scores on the pre-contemplation subscale of the readiness to change measure, or on most measures of alcohol consumption. The only significant difference that was found between NASD attendees and non-attendees regarding alcohol consumption at follow-up was on the measure of largest quantity of alcohol consumed recently; however, this finding was in the opposite direction of our hypothesis and was reduced to non-significance when we

controlled for participants' attendance at the heavy drinking event Rodeo. Results under each aim are discussed in more depth below.

Aim 1: Clinician Fidelity, and Perceptions of Feasibility and Acceptability

Consistent with our hypotheses under Aim 1, clinicians reported good overall fidelity to the treatment protocol and positive perceptions of the protocol in terms of feasibility and acceptability. Although fidelity ratings were generally good, with most clinicians reporting that they *always* or *almost always* included each intervention element, there was some noteworthy variation in the inclusion of particular intervention elements. Whereas clinicians reported being especially likely to include elements that were provided in written form (e.g., attendees' normative perceptions), the likelihood of including an element was reduced for those elements that were to be included in verbal form only (i.e., attendees' heaviest drinking day quantity, attendees' specific AUD symptoms). While the format of these elements may have impacted their inclusion, it is also possible that the elements that were less likely to be included by clinicians were those that seemed less relevant to NASD attendees given their relatively light drinking patterns. However, because the heaviest drinking day item in particular may be among the critical elements to include with NASD attendees (see Aim 3 below for more details), these findings highlight the need to ensure that all intervention elements are being utilized by clinicians. As was indicated by some clinicians in their write-in comments about protocol feasibility and acceptability, one possible way to improve fidelity would be to provide trainings further in advance of NASD, to allow clinicians more time to practice and gain comfort with the protocol. Similarly, adding brief written information to the Feedback Summary for all intervention elements may be useful for increasing the likelihood that all core intervention elements are included in every intervention. Given clinicians' positive responses to the

acceptability items, particularly about their own perceptions of the protocol, it seems plausible that increasing training in order to improve intervention fidelity in the future would be well received.

Aim 2: Immediate Effects of NASD+ on Perceptions and Readiness to Change

Our mixed findings under Aim 2 appear to simultaneously provide support for future use of the NASD+ protocol during the screening day, and suggest a need for more fine-grained measures of the immediate impacts of the intervention. The fact that only a small minority of NASD attendees reported discovering they had significant symptoms of AUD (i.e., 9%) and fewer still (i.e., 1%) indicated that they received a referral for treatment at NASD appears to confirm that the majority of NASD attendees are not high-risk drinkers, and therefore are not in need of intensive treatment for AUD. However, as we and others (i.e., Larmier et al., 2007) speculated, receiving normative feedback was viewed positively by NASD attendees regardless of their drinking status, with write-in comments confirming that this feedback created self-other discrepancy for heavier drinking NASD attendees while also helping to normalize and affirm attendees' decisions to abstain and/or engage in light drinking. As such, the NASD+ protocol appeared to provide NASD attendees with novel and beneficial information, regardless of their alcohol consumption patterns.

Despite the above interpretations drawn from NASD attendees' combined quantitative and qualitative responses on the opinions of NASD questionnaire, quantitative data from other measures (i.e., the perceived norms questionnaire and the RCQ) appeared to indicate that the immediate effects of the intervention were fairly limited. While it is possible that the only immediate effect of NASD+ was a reduction in perceived normative quantity, it is also possible that other immediate impacts were not observable on the measures utilized in the current study.

In particular, although we opted to measure perceived norms with dichotomously scored items in order to efficiently assess NASD attendees' perceptions, the use of these items limited NASD attendees' abilities to provide specific estimates. While response options appear to have been sufficiently incremental to detect changes in perceptions on the perceived quantity item, this may have not been the case for the perceived frequency item. Had we utilized an open-ended measure of perceived norms more similar to the DDQ (e.g., the Drinking Norms Rating Form; Baer, Stacy, & Larimer, 1991) it may have been possible to detect more subtle changes in normative perceptions from the pre- to the immediate-post assessment. Similarly, items on the RCQ may not have been sufficiently subtle to detect differences in motivation to change during the immediate follow-up survey, as items do not directly assess respondents' perceptions about whether their alcohol consumption is normal/typical. In addition to utilizing more fine-grained measures of the constructs assessed in the current study, it would also be useful for future research to include measures relevant to light-drinkers and abstainers (e.g., affect, perceptions of social adjustment, etc.), in order to determine the extent to which normative feedback affirms these students' choices.

Aim 3: Short-term Effects of NASD+ on Perceptions, Readiness to Change, and Consumption

Compared to non-attendees, NASD attendees were less likely to over-estimate normative alcohol consumption quantity at follow-up, and had higher scores on the contemplation and action scales of the RCQ at follow-up, suggesting an increased motivation to reduce drinking among NASD attendees. However, this increased motivation in the attendee group was not reflected in their reported alcohol consumption over the course of the follow-up period, as there were no group differences in the expected direction on measures of alcohol consumption or

experiences of alcohol-related problems. In contrast, on the largest quantity item NASD attendees reported greater alcohol consumption on their heaviest drinking day than non-attendees.

Given that greater alcohol consumption in the attendee group is at odds with not only our expectations and the limited literature on the use of normative feedback interventions with light drinkers (i.e., Larimer et al., 20007; Neighbors et al., 2011; Prince et al., 2014) , but also the finding of increased motivation to change in the attendee group, we explored the possibility that the heavy drinking event Rodeo may have impacted our results. When we controlled for the effect that attending this event had on participants' alcohol consumption during either of the reporting periods, the group differences on the perceived normative quantity variable, as well as the action subscale of the RCQ were maintained, but the difference on the largest quantity item was reduced to non-significance. As such, the data suggest that the NASD+ intervention had the intended impacts on NASD attendees' cognitions, but had neither positive nor negative impacts on their behavior over the course of the follow-up period.

There are three possible explanations for the discrepancy between the cognitive and behavioral impacts of the intervention that warrant consideration. First, given that the delayed follow-up survey occurred during the final weeks of the Spring semester when preparing for exams is likely to be a priority for most students, it is not surprising that both groups tended to report small decreases in their overall alcohol consumption. Previous research suggests that such variation in alcohol consumption in association with academic demands is typical in the college student population (Del Boca, Darkes, Greenbaum, & Goldman, 2004). In combination with the low to moderate levels of alcohol consumption that NASD attendees reported prior to the intervention, it is possible that the timing of the intervention and follow-up period led to a floor

effect for the impact of the intervention on behavior. Similarly, given that the follow-up period was fairly brief and occurred over the weeks immediately after the intervention, it is possible that although NASD attendees intended to reduce their alcohol consumption, they did not have sufficient opportunities over the follow-up period to put these intentions into practice. Indeed previous studies have indicated that the impacts of BAIs tend to emerge over time, with longer follow-up periods (e.g., six months to one year) providing greater evidence of behavioral change than may be immediately evident (Carey, Henson, Carey, & Maisto, 2007; Neighbors et al., 2011; White, Mun, Pugh, & Morgan, 2007).

Lastly, given that the item that NASD attendees scored higher on than non-attendees at the delayed follow-up was associated with single occasion drinking (i.e., largest quantity), which was the intervention element that was least likely to be included by clinicians, it is possible that attendees did not consider reducing single occasion drinking as a relevant behavioral change. Given the small difference between groups on this variable, and the temporal association with Rodeo, it seems unwarranted to consider this finding as an adverse effect of the NASD+ intervention. However, a longer follow-up period will be imperative in future studies to determine the extent of the behavioral effects of the NASD+ intervention.

Summary, Conclusions, and Limitations

Given that most NASD attendees at the present university do not use alcohol at such high levels to warrant traditional treatment, and that nationally even those who do receive a referral are unlikely to pursue services (Fishman, 2015), adding a normative feedback component to NASD may be beneficial to encourage and affirm lighter drinking among those who voluntarily attend the event. In the current study, this addition appeared to have the simultaneous effects of decreasing normative estimates, increasing motivation to change, and potentially, normalizing

low levels of consumption and/or abstinence. Additionally, clinicians responded positively to the use of the NASD+ intervention, indicating that it was easy to learn and implement, and providing self-ratings that suggested general fidelity to the intervention protocol.

Although the above findings appear to be distinct benefits of the inclusion of normative feedback into the NASD screening, several limitations need to be taken into consideration when interpreting our findings. First, during this pilot study of the feasibility and efficacy of the NASD+ intervention, we did not randomly assign participants to conditions, nor did we compare the NASD+ protocol to the typical NASD screening procedures. These decisions were made in order to decrease research-related effects on feasibility (e.g., the need to train clinicians in distinct protocols), and ensure an adequate sample size in the NASD+ group. Although necessary at this early stage, the study design clearly limits our ability to make causal statements about the addition of the normative feedback components. Similarly, because we aimed to limit respondent burden on NASD clinicians and attendees alike, some of our measures (i.e., acceptability, feasibility, and normative perceptions) were broad and/or created for the purposes of the current study. To ensure that findings were not a product of how these constructs were assessed, more fine-grained and well-validated measures will need to be used in future studies. Additionally, the majority of our participants were not heavy drinking students, thus we cannot speak to the impact that receiving the NASD+ intervention may have on students who are at greater risk. Although this is a limitation of our study, it is also a reflection of the typical student who is currently attending NASD, and highlights the need to improve advertising, in order to target heavy drinking students. One possible way of doing this would be to offer extra-credit in exchange for NASD attendance to students for non-psychology courses. As we have reported previously (i.e., Gauthier et al., 2015) the vast majority of NASD attendees at the current institution indicate that

extra credit is their primary motivator for attending the event; if students from other courses were equally motivated by extra credit, it seems likely that a greater number of students in general, and a greater number that report heavy drinking, would attend NASD. Without a sufficient number of students who reported heavy drinking, and thus received a referral for treatment in the current study, we are unable to speak to whether receiving normative feedback at NASD could increase motivation to seek treatment for heavy drinking students. Because there are a number of barriers that currently prevent students who would benefit from more intensive treatment from ever receiving it, this remains an important empirical question. Given that the primary purposes of the current study were to explore the feasibility and describe providers and recipients' responses to the protocol, as well as to present a broad picture of the cognitive and behavioral effects of the NASD+ intervention on the students that currently attend NASD, the study design, sample, and selected measures were appropriate. However, before making decisions about extending the NASD+ protocol to other universities and/or making permanent changes to the NASD protocol, a randomized comparison of the protocols with psychometrically sound measures is needed. Based on the overall positive findings from the current study, conducting a randomized comparison of the protocols appears warranted.

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Appendix A: Additional Materials

A1: NASD+ Procedural Manual

Contents

1. Training schedule
2. Flow of Clinical Interaction
3. NASD measures and description
4. Normative feedback scoring template
5. Percentile rankings by gender
6. AUDIT Scoring template
7. Referral List
8. Drink Smart Sheet
9. Same Day Referrals and Emergency Procedures

1. Training Schedule

1. Week of 3/16: Send out clinician recruitment e-mail; schedule group trainings
2. Week of 3/23: Spring break
3. Week of 3/30: Group Trainings (TBD) 1 date for 2nd years+, 1 date for 1st years; schedule individual trainings
4. Week of 4/3-4/8: Individual Trainings (role play screening w/ Jami or Bryan)
5. 4/9: NASD

1. Flow of NASD Clinical Interaction

1. Introductions

2. Completion of personal feedback form (do this with student, during discussion; pg. 40) and scoring of the AUDIT (pg. 42)

A. Ask the student for their estimate of how many drinks the typical student consumes per week (2A.1), and about their own typical consumption pattern (2A.2).

Example Statements:

2A.1. “You answered questions similar to this on one of the forms, but I want to double check, about how many times a week do you think the typical college student drinks (*frequency*)? And about how many drinks per drinking day (*quantity*)? So that’s about (*frequency*quantity*) drinks per week? Does that sound about like what you would estimate?”

2A.2. “What about for you, about how many times a week do you drink (*frequency*), and about how many drinks per occasion (*quantity*)? So that’s about (*frequency*quantity*) drinks per week for you? Sound right?”

3. Discussion of perceived norms:

A (~2 minutes). Discuss with the student their estimates of the typical college student’s alcohol consumption pattern, including what went into these estimates (3A.1), and embedding the definition of *perceived norms* (3A.2) into this discussion.

Example Statements:

3A.1. “How did you come up with your estimates for what the typical college student does? Who (and/or what experiences) were you thinking about?”

3A.2. “Great, so you thought about what you *perceive* most other students to be doing, and based your estimates on that. You decided what you think is normal based on what you see; this is exactly what most people do when faced with this question.”

B (~3 minutes). Discuss with the student the actual normative drinking behavior of Auburn students. Give them their *Personalized Feedback Summary* (pg. 40), explain the chart in detail (you can use a blank feedback form for yourself if needed; 3B.1), and ask for the student’s perceptions of the information (3B.2). Many students will comment on how they overestimated the norm, and this deserves some discussion (3B.3). If students don’t draw a comparison between their estimate and the true norm, you should ask them to do so (3B.4).

Example Statements:

3B.1. “Now if you look at the chart below, this is based on a survey that Auburn University conducted with our students recently, where everyone was asked to report the **actual** number of drinks they consume every week. Across the bottom (x-axis) you can see the total number of drinks per week options, and the numbers on the side (y-axis)

represent the percentage of students that reported consuming that number of drinks each week, with the different colors representing males and females”

3B.2. “What stands out to you in looking at the chart?”

3B.3. “One of the things you said that really stands out to me is how off your estimate was from what students are actually doing. Why do you think that’s the case?”

OR

3B.4. “One thing that sticks out to me is your estimates are a bit higher than what students are actually doing. What do you think may have influenced your estimates?”

C. (~3 minutes). Discuss with the student their own drinking pattern (3C.1), providing them with a percentile rank to compare their pattern to the typical Auburn student (3C.2). This portion of the feedback will vary depending on whether the student consumes alcohol at or above (3C.3), or below (3C.4) the norm.

Specifically, if the student consumes alcohol at or above the norm, discuss with them how their perceptions of what others are doing may impact their own behavior and their perceptions of it (3C.3).

If the student consumes alcohol below the norm, find out more information about their personal choices, and be sure to point out that between 20-25% of students don’t drink alcohol at all. Be sure to praise/ encourage this behavior (3C.4).

Example Statements:

3C.1. “Now let’s look at what you reported *you* do. So you said you have about (*estimated total*) drinks per week....

3C.2. “When we compare your report to what other students do, you consume more drinks than about (students percentile rank) percent of students your same gender. Is that surprising to you?”

3C.3. “It seems like your own pattern is pretty consistent with your perceptions of what other students are doing. Is that something that you’ve noticed before?”

OR

3C.4. “In looking at your pattern vs. your estimation, something that really stands out to me is that even though you *thought* most students were drinking even more than they actually are, you drink less than that. To me this says you’re not influenced by others the way a lot of college students are, and have your own values...how have you been able to stick to what’s important to you in this environment?”

4. (~3 minutes) Discussion of AUDIT and risk score.

After introducing the measure (4A.1) and informing the student of his/her score, discuss this score with the student (4A.2). Because frequency/ quantity of use have already been discussed, try to focus the conversation on the items that the student endorsed for questions 5-10.

Example Statements:

4A.1. “The other form that you filled out is the AUDIT, which is a measure that assesses for hazardous and harmful patterns of alcohol consumption. In addition to the amount of alcohol used, this measure also takes into account some of the problems you have experienced related to your alcohol use.”

4A.2. **0-7 Low Risk:** “Based on your responses, your risk for experiencing alcohol-related harm is low. As we discussed earlier, you tend to drink moderately. Tell me about the other strategies that you are using to limit the negative effects of your alcohol use.”

OR

4A.2. **8-18 Moderate Risk:** “Based on your responses, you fall in the moderate risk range for alcohol-related harm. As we discussed earlier, one of the biggest things that increases your risk are occasions of heavy drinking. You endorsed experiencing a few problems, including (e.g., *forgetting parts of your night*); have you noticed a pattern as to when those problems come up more often?”

OR

4A.2. **19+ High Risk:** “Based on your responses, your risk for experiencing alcohol-related harm is high. As we discussed earlier, one of the biggest things that increases your risk are nights of heavy drinking. You endorsed experiencing multiple problems, including (e.g., *forgetting parts of your night*); have you noticed a pattern as to when those problems come up more often?”

5. (~1 minute) Discussion of Referral options (for everyone, in case needed in the future; give copy of Referral list, pg. 43).

Remind the student that college is a time when many individuals are likely to face a mental health difficulty, whether it be related to alcohol misuse or something else such as depression and/or anxiety. Explain that one thing that is great about being an Auburn student is that all students are able to get free services from TESI (for alcohol/ substance abuse issues) and student counseling services (for alcohol and/or other issues), and that other options (AUPSC, local psychologists) are also available.

***Give the student a copy of the referral list.**

Code Number: _____

Clinician Code Name: _____

6. (~1 minute) Drink Smart Sheet.

***Give the student a copy of the drink smart sheet, and explain that it includes a lot of the information that you discussed with them today.**

7. Questions

Ask the student if they have any questions about what you discussed today.

8. (~1 minute) Recruitment for NASD Follow-up Study!!

Explain that one of the students in the clinical psychology department is doing a study about students' experiences at NASD, and participants can earn up to an additional 1.5 hours of extra credit.

Let them know that you only need to be 18 years old to participate! Write the students code number (written at the top of the AUDIT) on a sticky note and hand it to them. Explain that if they are interested in gaining 1 additional hour of SONA credit NOW for spending another ~15 minutes doing some self-report surveys, they should bring their sticky note to Jami at the NASD study table (in the main hallway of Cary to the left of the NASD table) who will give them more information.

If students say that they do not have time, tell them that there will also be an online portion of the study in 2 weeks that they can still participate in (and earn 0.5 hours of credit). Tell them that it is very important to keep their code number for this portion of the study, and recommend that they take a picture of this number with their phone before leaving the room.

2. NASD 2015 Measures and Description: The AUDIT

Code Number: _____

Clinician Code Name: _____

NASD National Alcohol Screening Day®		COLLEGE SCREENING FORM
Based on the Alcohol Use Disorders Identification Test (AUDIT) <i>Check the box that best describes your answer for the period covering the past 12 months.</i>		For Staff Use Only
1. How often do you have a drink containing alcohol? (days a week) <input type="checkbox"/> Never <input type="checkbox"/> Monthly or less <input type="checkbox"/> 2 to 4 times a month <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7		
2. How many drinks* containing alcohol do you have on a typical day when you are drinking? <small>*A standard drink is one 12-ounce bottle of beer or wine cooler, one 5-ounce glass of wine, or 1.5 ounces of liquor.</small> <input type="checkbox"/> None <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12+		
3. For women: How often do you have 4 or more drinks a day? For men: How often do you have 5 or more drinks a day? <input type="checkbox"/> Never <input type="checkbox"/> Less than monthly <input type="checkbox"/> Monthly <input type="checkbox"/> Weekly <input type="checkbox"/> Daily or almost daily		
4. How often during the last year have you found that you were not able to stop drinking once you started? <input type="checkbox"/> Never <input type="checkbox"/> Less than monthly <input type="checkbox"/> Monthly <input type="checkbox"/> Weekly <input type="checkbox"/> Daily or almost daily		
5. How often during the last year have you failed to do what was normally expected from you because of drinking? <input type="checkbox"/> Never <input type="checkbox"/> Less than monthly <input type="checkbox"/> Monthly <input type="checkbox"/> Weekly <input type="checkbox"/> Daily or almost daily		
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session? <input type="checkbox"/> Never <input type="checkbox"/> Less than monthly <input type="checkbox"/> Monthly <input type="checkbox"/> Weekly <input type="checkbox"/> Daily or almost daily		
7. How often during the last year have you had a feeling of guilt or remorse after drinking? <input type="checkbox"/> Never <input type="checkbox"/> Less than monthly <input type="checkbox"/> Monthly <input type="checkbox"/> Weekly <input type="checkbox"/> Daily or almost daily		
8. How often during the last year have you been unable to remember what happened the night before because you had been drinking? <input type="checkbox"/> Never <input type="checkbox"/> Less than monthly <input type="checkbox"/> Monthly <input type="checkbox"/> Weekly <input type="checkbox"/> Daily or almost daily		
9. Have you or has someone else been injured as a result of your drinking? <input type="checkbox"/> No <input type="checkbox"/> Yes, but not in the last year <input type="checkbox"/> Yes, during the last year		
10. Has a relative, friend, doctor or health professional been concerned about your drinking or suggested that you cut down? <input type="checkbox"/> No <input type="checkbox"/> Yes, but not in the last year <input type="checkbox"/> Yes, during the last year		
Total AUDIT Score:		
11. Age: <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>	19. At any time in his/her life, has your father, mother, sister or brother ever been an alcoholic or problem drinker? <input type="checkbox"/> No <input type="checkbox"/> Yes	
12. Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female	20. Alcohol Treatment History: (check all that apply) <input type="checkbox"/> I am currently being treated for an alcohol problem <input type="checkbox"/> I was treated in the past for an alcohol problem <input type="checkbox"/> I have never been treated for an alcohol problem	
13. Ethnic/Racial Group: (check all that apply) <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Hispanic or Latino <input type="checkbox"/> Asian <input type="checkbox"/> Native Hawaiian or Other Pacific Islander <input type="checkbox"/> White <input type="checkbox"/> Black or African American	21. Other Treatment History: (check all that apply) I have received treatment for: <input type="checkbox"/> Anxiety Disorder/Post-Traumatic Stress Disorder <input type="checkbox"/> Drug Abuse <input type="checkbox"/> Bipolar Disorder <input type="checkbox"/> Depression <input type="checkbox"/> Schizophrenia <input type="checkbox"/> None of the above	
14. I am currently a: <input type="checkbox"/> Full-Time Student <input type="checkbox"/> Part-Time Student <input type="checkbox"/> Faculty <input type="checkbox"/> Staff <input type="checkbox"/> Other	22. During the past 12 months, have you driven when you've had perhaps too much to drink? <input type="checkbox"/> No <input type="checkbox"/> Yes	
15. Where is your residence? <input type="checkbox"/> On-Campus <input type="checkbox"/> Off-Campus	23. Do you have a medical or mental health condition? <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, have you been told by your doctor that a current medical or mental health condition might be affected by drinking alcohol? <input type="checkbox"/> No <input type="checkbox"/> Yes	
Screening Recommendation - To be filled out by clinician <input type="checkbox"/> Advised talking with health provider <input type="checkbox"/> Outpatient referral		

3. NASD 2015 Measures and Description: PNQ, DDQ, RCQ

Code Number: _____

Clinician Code Name: _____

2. Perceived Norms Questionnaire (PNQ)

1 (a). How often do you think the typical college student (of your gender) drinks?

- | | |
|----------------------|------------------|
| Once a month or less | 3-4 times a week |
| 2-3 times a month | Nearly every day |
| 1-2 times a week | |

2 (b). How much do you think the typical college student (of your gender) drinks on a typical drinking night?

- | | |
|------------|--------------|
| 0-2 drinks | 7-8 drinks |
| 3-4 drinks | 9-10+ drinks |
| 5-6 drinks | |

3. Daily Drinking Questionnaire (DDQ)

3. For the past month fill in for each calendar day the number of standard drinks you usually drink on that day, and the number of hours over which you consume this amount. Answer "0" if you have not used alcohol on that particular day, or if you have never used alcohol.

*One standard drink equals a 12oz beer, a mixed drink or shot with 1.5oz of liquor, or a 5oz glass of wine.

Day (c)	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
# drinks consumed							
# of hours drinking							

4. During the last 2 weeks, on how many days did you drink alcohol? _____
5. During the last 2 weeks, what is the largest number of standard drinks you consumed in 1 night? _____
6. For **women**, during the last 2 weeks, on how many days did you have **4** or more standard drinks? _____
- For **men**, during the last 2 weeks, on how many days did you have **5** or more standard drinks? _____

4. Readiness to Change Questionnaire (RCQ)

Please indicate the degree to which you tend to agree or disagree with each statement regarding your use of alcohol, using the scale below:

1	2	3	4	5
Strongly Disagree				Strongly Agree

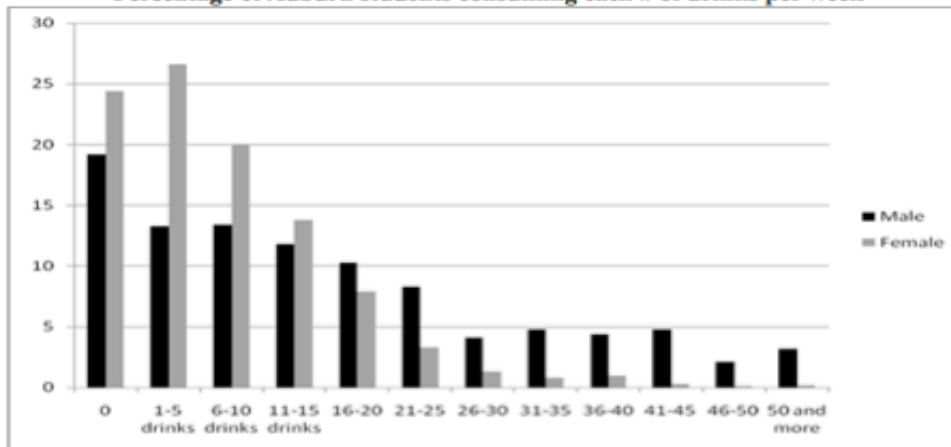
1. _____ I don't think I drink too much.
2. _____ I am trying to drink less than I used to.
3. _____ I enjoy my drinking but sometimes I drink too much.
4. _____ Sometimes I think I should cut down on my drinking.
5. _____ It's a waste of time thinking about my drinking.
6. _____ I have just recently changed my drinking habits.
7. _____ Anyone can talk about wanting to do something about drinking, but I'm actually doing something about it.
8. _____ I'm at least at the stage where I should think about drinking less.
9. _____ My drinking is a problem sometimes.
10. _____ There is no need for me to think about changing my drinking.
11. _____ I am actually changing my drinking habits right now.
12. _____ Drinking less alcohol would be pointless for me.

NASD Feedback Summary (Male Example)

Your Beliefs about Student Drinking:

You estimated that the average student drinks 3 - 4 ^(a) times a week and consumes 7 - 8 ^(b) drinks per occasion, for a total of 32 ^(a*b) drinks per week.

Percentage of Auburn students consuming each # of drinks per week



Your Drinking Pattern:

You reported that you drink 3 ^(c) times a week and consume about a total of 24 ^(d) drinks per week. In comparison to other Auburn University students of your same gender, your percentile rank is 76 ^(e). This means that you currently drink more than 76% ^(e) of students of your same gender.

Your Risk of Alcohol Use Problems:

The AUDIT is a measure used to assess for persons with hazardous and harmful patterns of alcohol consumption. Based on your responses, your current drinking pattern falls into the range of:

Low Risk (0-7): Alcohol use falls within safe-use guidelines. Drinking in moderation and use of protective strategies keep risk low.

Moderate Risk (8-18): Alcohol use exceeds safe-use guidelines. Reducing frequency/quantity of consumption and use of protective strategies can help to decrease risk.

High Risk (19+): Alcohol use far exceeds safe-use guidelines. Use at this level is associated with potential for serious harm. Reducing frequency/ quantity of consumption and use of protective strategies can help to decrease risk.

8

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Comment [1]: Write the students estimates of what other students do on this section of the form (you'll get this information from talking to them [see pg.1]; fill it out when you get it!)

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Comment [2]: Same here, get this information from talking to the student BEFORE you talk about the table (see page 1). Once they tell you their drinks per week, use the table on the back of this sheet to fill in the percentile rank.

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Comment [3]: Based on their AUDIT total score, place an X next to the risk level. Discuss this with the student (see pages 3-4).

Percentile Rank by Number of Drinks per Week

# of drinks	Female percentile ranks	Male percentile ranks
0	24.4	19.2
1	28.7	22.0
2	35.9	26.8
3	40.5	28.5
4	46.6	31.3
5	50.9	32.6
6	55.8	36.8
7	59.5	38.1
8	63.9	39.9
9	67.1	42.3
10	70.9	46.0
11	73.5	50.5
12	77.0	53.6
13	79.1	54.3
14	82.9	55.7
15	84.8	57.7
16	86.7	61.5
17	89.0	62.2
18	90.0	63.6
19	91.1	65.3
20	92.7	68.0
21	93.3	70.1
22	94.5	71.8
23	94.8	73.2
24	95.7	75.6
25	96.0	76.3
27	96.4	77.0
28	96.8	78.0
29	97.0	79.0
30	97.1	80.4
31	97.4	81.1
32	97.7	81.8
33	97.8	82.8
34	97.9	84.9
35	98.2	85.2
36	98.5	87.3
38	98.6	88.7
40	99.2	89.7
41	99.3	90.7
43	99.5	92.4
44	99.6	93.1
46	99.7	95.2
58	100.0	97.9
76		100.0

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Comment [4]: This will actually be on the back of the feedback summary. Just be sure to fill in the percentile before you give this to the student.

Scoring of the AUDIT

NASD National Alcohol Screening Day®

COLLEGE SCREENING FORM

Based on the Alcohol Use Disorders Identification Test (AUDIT) <i>Check the box that best describes your answer for the period covering the past 12 months.</i>		For Staff Use Only
1. How often do you have a drink containing alcohol? <small>(days a week)</small>	0 <input type="checkbox"/> Never 1 <input type="checkbox"/> Monthly or less 2 <input type="checkbox"/> 2 to 4 times a month 3 <input type="checkbox"/> 2 4 <input type="checkbox"/> 4 5 <input type="checkbox"/> 5 6 <input type="checkbox"/> 6 7 <input type="checkbox"/> 7	
2. How many drinks* containing alcohol do you have on a typical day when you are drinking? <small>*A standard drink is one 12-ounce bottle of beer or wine cooler, one 5-ounce glass of wine, or 1.5 ounces of liquor.</small>	0 <input type="checkbox"/> None 1 <input type="checkbox"/> 1 2 <input type="checkbox"/> 2 3 <input type="checkbox"/> 3 4 <input type="checkbox"/> 4 5 <input type="checkbox"/> 5 6 <input type="checkbox"/> 6 7 <input type="checkbox"/> 7 8 <input type="checkbox"/> 8 9 <input type="checkbox"/> 9 10 <input type="checkbox"/> 10 11 <input type="checkbox"/> 11 12+ <input type="checkbox"/> 12+	
3. For women: How often do you have 4 or more drinks a day? For men: How often do you have 5 or more drinks a day?	0 <input type="checkbox"/> Never 1 <input type="checkbox"/> Less than monthly 2 <input type="checkbox"/> Monthly 3 <input type="checkbox"/> Weekly 4 <input type="checkbox"/> Daily or almost daily	
4. How often during the last year have you found that you were not able to stop drinking once you started?	0 <input type="checkbox"/> Never 1 <input type="checkbox"/> Less than monthly 2 <input type="checkbox"/> Monthly 3 <input type="checkbox"/> Weekly 4 <input type="checkbox"/> Daily or almost daily	
5. How often during the last year have you failed to do what was normally expected from you because of drinking?	0 <input type="checkbox"/> Never 1 <input type="checkbox"/> Less than monthly 2 <input type="checkbox"/> Monthly 3 <input type="checkbox"/> Weekly 4 <input type="checkbox"/> Daily or almost daily	
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	0 <input type="checkbox"/> Never 1 <input type="checkbox"/> Less than monthly 2 <input type="checkbox"/> Monthly 3 <input type="checkbox"/> Weekly 4 <input type="checkbox"/> Daily or almost daily	
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	0 <input type="checkbox"/> Never 1 <input type="checkbox"/> Less than monthly 2 <input type="checkbox"/> Monthly 3 <input type="checkbox"/> Weekly 4 <input type="checkbox"/> Daily or almost daily	
8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?	0 <input type="checkbox"/> Never 1 <input type="checkbox"/> Less than monthly 2 <input type="checkbox"/> Monthly 3 <input type="checkbox"/> Weekly 4 <input type="checkbox"/> Daily or almost daily	
9. Have you or has someone else been injured as a result of your drinking?	0 <input type="checkbox"/> No 2 <input type="checkbox"/> Yes, but not in the last year 4 <input type="checkbox"/> Yes, during the last year	
10. Has a relative, friend, doctor or health professional been concerned about your drinking or suggested that you cut down?	0 <input type="checkbox"/> No 2 <input type="checkbox"/> Yes, but not in the last year 4 <input type="checkbox"/> Yes, during the last year	
Total AUDIT Score:		
11. Age: <input style="width: 30px; height: 20px;" type="text"/> <input style="width: 30px; height: 20px;" type="text"/> 12. Sex: <input type="checkbox"/> Male <input type="checkbox"/> Female 13. Ethnic/Racial Group: (check all that apply) <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Hispanic or Latino <input type="checkbox"/> Asian <input type="checkbox"/> Native Hawaiian or Other Pacific Islander <input type="checkbox"/> White <input type="checkbox"/> Black or African American 14. I am currently a: <input type="checkbox"/> Full-Time Student <input type="checkbox"/> Part-Time Student <input type="checkbox"/> Faculty <input type="checkbox"/> Staff <input type="checkbox"/> Other 15. Where is your residence? <input type="checkbox"/> On-Campus <input type="checkbox"/> Off-Campus 16. If enrolled in college, your involvement in athletics: <input type="checkbox"/> Inter-Collegiate <input type="checkbox"/> Intramural <input type="checkbox"/> Recreational <input type="checkbox"/> Club Team 17. If enrolled in college, current year: <input type="checkbox"/> Freshman <input type="checkbox"/> Junior <input type="checkbox"/> Graduate Student <input type="checkbox"/> Sophomore <input type="checkbox"/> Senior 18. If enrolled in college, are you a member of a: <input type="checkbox"/> Fraternity <input type="checkbox"/> Sorority <input type="checkbox"/> Neither	19. At any time in his/her life, has your father, mother, sister or brother ever been an alcoholic or problem drinker? <input type="checkbox"/> No <input type="checkbox"/> Yes 20. Alcohol Treatment History: (check all that apply) <input type="checkbox"/> I am currently being treated for an alcohol problem <input type="checkbox"/> I was treated in the past for an alcohol problem <input type="checkbox"/> I have never been treated for an alcohol problem 21. Other Treatment History: (check all that apply) I have received treatment for: <input type="checkbox"/> Anxiety Disorder/Post-Traumatic Stress Disorder <input type="checkbox"/> Drug Abuse <input type="checkbox"/> Bipolar Disorder <input type="checkbox"/> Depression <input type="checkbox"/> Schizophrenia <input type="checkbox"/> None of the above 22. During the past 12 months, have you driven when you've had perhaps too much to drink? <input type="checkbox"/> No <input type="checkbox"/> Yes 23. Do you have a medical or mental health condition? <input type="checkbox"/> No <input type="checkbox"/> Yes If yes, have you been told by your doctor that a current medical or mental health condition might be affected by drinking alcohol? <input type="checkbox"/> No <input type="checkbox"/> Yes	
Screening Recommendation - To be filled out by clinician <input type="checkbox"/> No follow-up <input type="checkbox"/> Advised talking with health provider <input type="checkbox"/> Outpatient referral <input type="checkbox"/> Advised reducing drinking levels <input type="checkbox"/> Inpatient referral <input type="checkbox"/> Advised to stop drinking		

NASD 13C-125F

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Referral List

Thank you for participating in National Alcohol Screening Day at Auburn University. The following is a referral list of several local mental health providers. Additional area providers are listed in the phone book under “Psychologists” or “Counselors.”

Drug and Alcohol Specific Services

Provider	Phone Number	Cost/Hour
Bradford Health Services	1-888-577-0012	Offers inpatient and outpatient services. Call for a quote.
East Alabama Alcoholism and Substance Abuse Services	1-334-742-2877	Offers outpatient and court referral programs. Call for a quote
Clinical Psychologists, P.C	1-334-821-3350	Drs. Tom Lawry and Doug Booth have specialized experience in the treatment of substance abuse. Call for a quote.

On Campus Services

Provider	Phone Number	Cost/Hour
Tiger Education Screening Intervention (TESI)	1-334-844-1311	Substance use education and brief intervention. Free for self-referred students.
Auburn University Student Counseling Services	1-334-844-5123	No Charge (first 10 sessions for Auburn students)
Auburn University Psychological Services Center (AUPSC)	1-334-844-4889	Intake fee \$80; sliding fee scale per session thereafter

Community Services

Provider	Phone Number	Cost/Hour
Clinical Psychologists, P.C.	1-334-821-3350	Initial fee \$140; \$130 per session thereafter
Psychological Associates, L.L.C.	1-334-826-1699	Initial fee of \$140; \$130 per session thereafter
Auburn Psychology Group, L.L.C	1-334-887-4343	Call for a quote.
East Alabama Mental Health	1-334-742-2877	Provides services on a sliding fee scale.

Hotlines/In Case of Emergency

Provider	Phone Number	Cost/Hour
National Suicide Prevention Hotline	1-800-273-TALK(8255)	No Charge
Emergency Room, East Alabama Medical Center	If needed call 911 for emergency transport	Dependent on Insurance

Websites with Information about Alcohol and Substance Use

https://cws.auburn.edu/studentaffairs/healthandwellness/ www.rethinkingdrinking.niaaa.nih.gov http://www.collegedrinkingprevention.gov/ www.niaaa.nih.gov
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Referral to Student Counseling

1. If the participant is an AU Student and would like to schedule an appointment for counseling services at SCS, show them the contact information for SCS on the feedback sheet and have them call SCS to schedule an appointment.
2. If the situation is a crisis, refer to the Emergency Situation instructions below.

Emergency Situations

Although it is unlikely that a student will present with a problem that poses an immediate risk, we need to be prepared for that possibility. Examples of immediate risk include:

- Acute intoxication
- Current suicidal or homicidal ideation (within the last year)
- Any history of suicidal or homicidal intent or plan
- Serious mental health issue

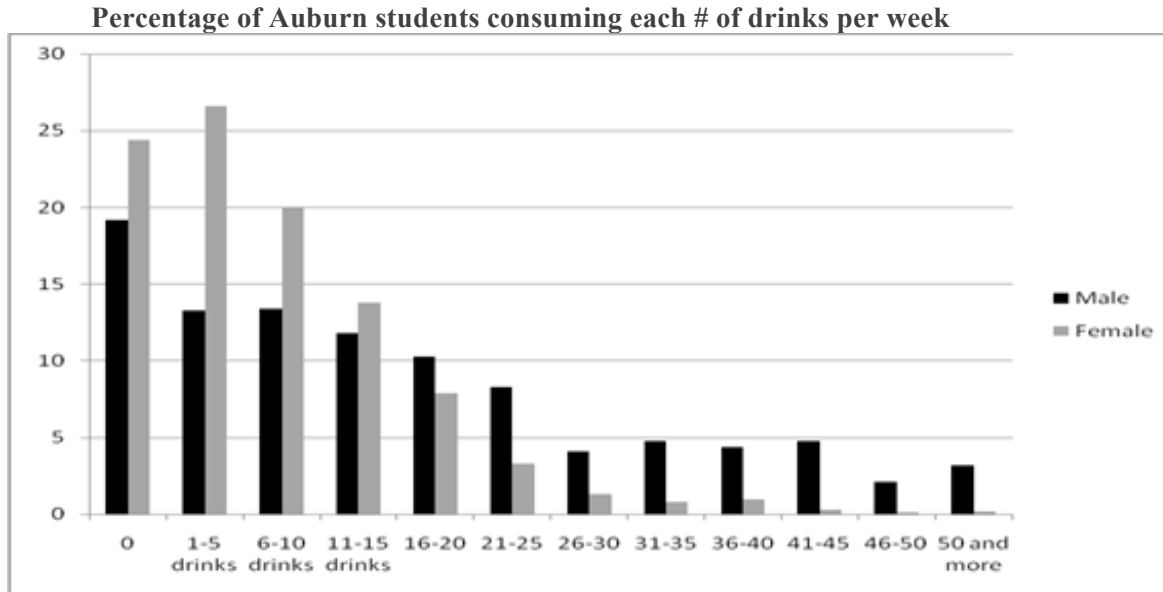
In the event that you learn that your participant poses an immediate risk, gather any relevant information about their situation. Then, ask them to complete the BASC-2. Excuse yourself from the room for a moment and proceed with the following instructions:

1. Go to the available SCS counselor stationed in the assessment rooms
2. Describe the concern you have about your participant to the SCS counselor including all of the details from the screening and your discussion with the participant.
3. Ask the SCS counselor what should happen next... ask whether you should:
 - a. Provide feedback and referrals and let the participant leave?
 - b. Have the participant meet with the SCS counselor? If your participant needs to meet with the SCS counselor, **then you need to stay with them throughout the meeting**. Do not leave your participant until they are finished talking with the SCS counselor and have completed the screening day process.
 - c. In the case that the student requires emergency treatment, a ride from campus security to student counseling services will be arranged for them. In this highly unlikely event, the clinician who met with the student should stay with them until they are admitted to SCS.

A2: Sample Personalized Feedback Summary

Your Beliefs about Student Drinking:

You estimated that the average student drinks _____ - _____ times a week and consumes _____ - _____ drinks per occasion, for a total of _____ drinks per week.



Your Drinking Pattern:

You reported that you drink _____ times a week and consume about a total of _____ drinks per week. In comparison to other Auburn University students of your same gender, your percentile rank is _____. This means that you currently drink more than _____% of students of your same gender.

Your Risk of Alcohol Use Problems:

The AUDIT is a measure used to assess for persons with hazardous and harmful patterns of alcohol consumption. Based on your responses, your current drinking pattern falls into the range of:

___ **Low Risk (0-7):** Alcohol use falls within safe-use guidelines. Drinking in moderation and use of protective strategies keep risk low.

___ **Moderate Risk (8-18):** Alcohol use exceeds safe-use guidelines. Reducing frequency/quantity of consumption and use of protective strategies can help to decrease risk.

___ **High Risk (19+):** Alcohol use far exceeds safe-use guidelines. Use at this level is associated with potential for serious harm. Reducing frequency/ quantity of consumption and use of protective strategies can help to decrease risk.

Appendix B: Tables

Table B1.1. *Clinician self-report ratings of fidelity to NASD+ protocol (N = 17).*

Intervention element:	<i>n</i> and % of clinicians endorsing each response option:				
	1 <i>Never</i>	2 <i>Rarely</i>	3 <i>Sometimes</i>	4 <i>Most of the time</i>	5 <i>Always</i>
1. Discuss attendee's estimates of campus drinking norms	0 (0%)	0 (0%)	0 (0%)	0 (0%)	17 (100%)
2. Discuss attendee's typical frequency of drinking	0 (0%)	1 (6%)	1 (6%)	0 (0%)	15 (88%)
3. Discuss attendee's typical quantity of alcoholic beverages	1 (6%)	0 (0%)	0 (0%)	0 (0%)	16 (94%)
4. Discuss attendee's heaviest drinking day quantity	3 (18%)	2 (12%)	4 (23%)	2 (12%)	6 (35%)
5. Provide an explanation of perceived norms	0 (0%)	0 (0%)	0 (0%)	2 (12%)	15 (88%)
6. Describe and discuss the actual campus norms	0 (0%)	0 (0%)	0 (0%)	0 (0%)	17 (100%)
7. Provide attendee with their percentile rank	0 (0%)	0 (0%)	0 (0%)	1 (6%)	16 (94%)
8. Discuss tendency to overestimate drinking norms	0 (0%)	0 (0%)	1 (6%)	3 (18%)	13 (76%)
9. Discuss attendee's symptoms of alcohol use disorder	1 (6%)	3 (18%)	4 (23%)	0 (0%)	9 (53%)
10. Provide AUDIT risk score	0 (0%)	0 (0%)	0 (0%)	0 (0%)	17 (100%)
11. Provide referral list and discuss counseling options	0 (0%)	0 (0%)	0 (0%)	0 (0%)	17 (100%)
12. Answer attendee's questions/ address concerns	0 (0%)	0 (0%)	1 (6%)	1 (6%)	15 (88%)

Note. AUDIT = Alcohol Use Disorders Identification Test.

Table B1.2. *Clinician ratings of NASD+ protocol feasibility and acceptability (N = 17).*

Survey item content:	<i>n and % of clinicians endorsing each response option:</i>						
	1 <i>Strongly disagree</i>	2 <i>Disagree</i>	3 <i>Somewhat disagree</i>	4 <i>Neither agree nor disagree</i>	5 <i>Somewhat agree</i>	6 <i>Agree</i>	7 <i>Strongly agree</i>
Feasibility:							
1. Intervention protocol was feasible to enact	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3 (18%)	14 (82%)
2. Training adequately prepared me	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (12%)	7 (41%)	8 (47%)
Acceptability:							
1. Attendees appeared to like receiving norms clarification	0 (0%)	0 (0%)	1 (6%)	1 (6%)	3 (18%)	5 (29%)	7 (41%)
2. It was easy to build rapport while following the protocol	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (12%)	8 (47%)	7 (41%)
3. I think the intervention protocol should be used in the future	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	4 (24%)	13 (76%)
4. I preferred this protocol to the prior NASD protocol ^a	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2 (18%)	9 (82%)
5. I believe attendees preferred this protocol to the prior NASD protocol ^a	0 (0%)	0 (0%)	0 (0%)	1 (9%)	4 (36%)	0 (0%)	6 (55%)

Note. ^aOnly clinicians who had provided clinical services at NASD previously ($n = 11$) responded to these items.

Table B2.1. *Timetable of measure completion for student participants.*

Participant Group	Assessment Period		
	Pre-assessment	Immediate follow-up	Delayed follow-up
NASD Attendees	<ol style="list-style-type: none"> 1. NASD screener (AUDIT, past year; demographics) 2. Perceived Norms Questionnaire (i.e., frequency and quantity) 3. Daily Drinking Questionnaire (past month) 4. Additional alcohol consumption questions (i.e., frequency, largest quantity, binge frequency; past two week) 5. RCQ (i.e., pre-contemplation, contemplation, and action subscales) 	<ol style="list-style-type: none"> 1. NASD screener (demographics only) 2. Perceived Norms Questionnaire (i.e., frequency and quantity) 3. RCQ (i.e., pre-contemplation, contemplation, and action subscales) 4. RAPI (past two weeks) 5. Opinions of NASD questionnaire 	<ol style="list-style-type: none"> 1. NASD screener (AUDIT, past two weeks; demographics) 2. Perceived Norms Questionnaire (i.e., frequency and quantity) 3. Daily Drinking Questionnaire (past two weeks) 4. Additional alcohol consumption questions (i.e., frequency, largest quantity, binge frequency; past two week) 5. RCQ (i.e., pre-contemplation, contemplation, and action subscales) 6. RAPI (past two weeks)
Non-attendees	<ol style="list-style-type: none"> 1. NASD screener (AUDIT, past year; demographics) 2. Perceived Norms Questionnaire (i.e., frequency and quantity) 3. Daily Drinking Questionnaire (past month) 4. Additional alcohol consumption questions (i.e., frequency, largest quantity, binge frequency; past two week) 5. RCQ (i.e., pre-contemplation, contemplation, and action subscales) 6. RAPI (past two weeks) 	N/A	<ol style="list-style-type: none"> 1. NASD screener (AUDIT, past two weeks; demographics) 2. Perceived Norms Questionnaire (i.e., frequency and quantity) 3. Daily Drinking Questionnaire (past two weeks) 4. Additional alcohol consumption questions (i.e., frequency, largest quantity, binge frequency; past two week) 5. RCQ (i.e., pre-contemplation, contemplation, and action subscales) 6. RAPI (past two weeks)

Note. AUDIT = Alcohol Use Disorders Identification Test. RCQ = Readiness to Change Questionnaire. RAPI = Rutgers Alcohol Problems Index.

Table B2.2. *NASD attendees experiences and opinions of NASD+ protocol (N = 77).*

Item content:	Response options; n and % endorsed:				
1. Did discussion clarify whether you had significant symptoms of AUD?	a. Discussion clarified that I do <i>n</i> = 7 9%	b. Discussion clarified that I do not <i>n</i> = 65 84%	c. Discussion was inadequate to clarify, but I think I do <i>n</i> = 0 0%	d. Discussion was inadequate to clarify, but I think I do not <i>n</i> = 3 4%	e. Other/ write-in ^a <i>n</i> = 2 3%
2. Did you receive a referral for alcohol treatment?	a. Yes <i>n</i> = 1 1%	b. No <i>n</i> = 72 94%	c. Unsure <i>n</i> = 4 5%	d. Other/ write-in <i>n</i> = 0 0%	
3. Did you begin to feel more comfortable/ able to discuss problems?	a. Yes; more comfortable <i>n</i> = 12 16%	b. No; less comfortable <i>n</i> = 1 1%	c. Comfortable; not having problems <i>n</i> = 61 79%	d. Not comfortable; not having problems <i>n</i> = 2 3%	e. Other/ write-in ^b <i>n</i> = 1 1%
4. Did meeting with a clinician change how you feel about getting help?	a. Easier; current problem <i>n</i> = 4 5%	b. More difficult; current problem <i>n</i> = 0 0%	c. Easier; if future problem <i>n</i> = 73 95%	d. More difficult; if future problem <i>n</i> = 0 0%	e. Other/ write-in <i>n</i> = 0 0%
5. Do you feel attending had any negative impacts on you (describe)? ^c	a. Yes <i>n</i> = 3 4%	a. No <i>n</i> = 74 96%	a. Unsure <i>n</i> = 0 0%		

Note. ^aWrite-in responses were as follows: *I don't have any symptoms and I don't have symptoms because I don't drink*. ^bWrite-in response was as follows: *I have no problems and they weren't discussed*. ^cParticipants who indicated that there were negative effects described these effects as: *gave me more information about alcohol on campus, good to know statistics, and made me aware*.

Table B2.3. NASD attendees ratings of most interesting/ impactful intervention elements.

Intervention element:	Rated most interesting (n = 79)			Rated most impactful (n = 74)		
	n	%	95% CI	n	%	95% CI
Symptoms of AUD	1	1.27%	0.00 – 6.83%	3	4.05%	1.39 – 11.25%
Potential dangers of AUD symptoms	1	1.27%	0.00 – 6.83%	10	13.51%	7.51 – 23.12%
Local campus drinking norms	44	55.69%	44.74 – 66.14%	18	24.32%	15.97 – 35.20%
Personal comparison to norms/ percentile rank	28	35.44%	25.79 – 46.44%	24	32.43%	22.86 – 43.73%
Campus mental health resources	5	6.33%	2.73 – 13.98%	19	25.68%	17.10 – 36.66%
Other/write-in	0	0.00%	0.00 – 4.64%	0	0.00%	0.00 – 4.93%

Note. AUD = Alcohol use disorder.

Table B3.1. *Descriptive statistics by subsample and time point.*

Dichotomous Variables ^a	NASD Attendees				Non-Attendees			
	Over-estimated		Did not over-estimate		Over-estimated		Did not over-estimate	
	N	%	N	%	N	%	N	%
Perceived Norm-Frequency								
Pre-assessment ^b	50	59%	35	41%	143	74%	51	26%
Delayed follow-up	26	58%	19	22%	78	71%	32	29%
Perceived Norm-Quantity								
Pre-assessment ^b	31	37%	54	63%	67	35%	127	65%
Delayed follow-up	5	11%	40	89%	31	28%	79	72%
Continuous Variables ^c	NASD Attendees			Non-Attendees				
	Mean	SD	Range	Mean	SD	Range		
RCQ-Pre-contemplation^d								
Pre-assessment	13.25	3.48	6.00-20.00	13.61	2.81	7.00-20.00		
Delayed follow-up	13.28	3.48	6.00-20.00	13.80	3.42	4.00-20.00		
RCQ-Contemplation^d								
Pre-assessment	7.38	3.46	4.00-18.00	8.92	3.33	4.00-19.00		
Delayed follow-up	8.21	3.57	4.00-16.00	8.11	3.40	4.00-17.00		
RCQ-Action^d								
Pre-assessment	8.51	3.98	4.00-19.00	9.38	3.35	4.00-19.00		
Delayed follow-up	9.03	4.03	4.00-16.00	8.58	3.26	4.00-20.00		
Daily Drinking Questionnaire								
Pre-assessment	6.08	7.44	0.00-32.00	6.62	7.97	0.00-32.00		
Delayed follow-up	4.81	5.24	0.00-20.00	5.38	7.06	0.00-27.00		
AUDIT								
Pre-assessment	4.85	4.62	0.00-17.00	5.59	5.12	0.00-21.00		
Delayed follow-up	4.24	3.84	0.00-16.00	4.55	4.25	0.00-18.00		
Drinking Frequency								
Pre-assessment	1.49	1.94	0.00-10.00	1.93	2.29	0.00-11.00		
Delayed follow-up	1.48	1.77	0.00-7.00	1.81	2.14	0.00-8.00		
Largest Quantity								
Pre-assessment	2.59	3.47	0.00-16.00	3.29	3.75	0.00-16.00		
Delayed follow-up	3.14	3.93	0.00-15.00	2.89	3.48	0.00-13.00		
Binge Frequency								
Pre-assessment	0.66	1.29	0.00-6.00	0.91	1.41	0.00-6.00		
Delayed follow-up	0.81	1.06	0.00-5.00	0.91	1.40	0.00-6.00		
RAPI								
Pre-assessment	2.23	3.60	0.00-16.00	2.31	3.84	0.00-16.00		
Delayed follow-up	1.39	3.55	0.00-16.00	1.82	3.51	0.00-16.00		

Note. ^aFor dichotomous variables, only participants who did not have missing data on the specified variable were included.

^bBecause all NASD attendees with available data at pre-assessment were included, the *n*'s and percentages reported for NASD attendees on these variables are slightly greater than those reported for immediate effects (i.e., Aim 2). ^cFor continuous variables, Full Information Maximum Likelihood (FIML) was used to estimate descriptive statistics for all participants. ^dThese statistics based on the subset (*n* = 68 NASD attendees; *n* = 159 non-attendees) of participants who endorsed consumption of alcohol over the lifetime. RCQ = Readiness to Change Questionnaire. AUDIT = Alcohol Use Disorders Identification Test. RAPI = Rutgers Alcohol Problems Index.

Table B3.2. Zero-order correlations among study variables: NASD attendees (N = 86).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Pre-assessment																									
1. PNQ-Frequency ^a	1																								
2. PNQ-Quantity ^a	.19	1																							
3. RCQ Precontemplation ^b	.10	.04	1																						
4. RCQ Contemplation ^b	-.08	-.01	-.44*	1																					
5. RCQ Action ^b	.00	.02	-.42*	.55*	1																				
6. Daily Drinking Questionnaire	-.22	.15	-.04	.19	-.04	1																			
7. AUDIT	-.18	.18	-.20	.44*	.11	.79*	1																		
8. Drinking Frequency	-.02	.04	-.23*	.40*	.13	.63*	.71*	1																	
9. Largest Quantity	-.12	.13	-.23*	.30*	.08	.81*	.77*	.79*	1																
10. Binge Frequency	-.07	.02	-.20	.35*	-.02	.68*	.70*	.78*	.81*	1															
11. RAPI	.04	.09	-.22	.43*	.23*	.38*	.59*	.47*	.49*	.47*	1														
Delayed follow-up																									
12. PNQ-Frequency ^a	.44*	-.03	.24*	-.28*	-.17	-.29*	-.28*	-.15	-.34*	-.38*	-.32*	1													
13. PNQ-Quantity ^a	.28*	.38*	.32*	-.13	-.14	.03	.21	.18	.05	.02	.02	.39*	1												
14. RCQ Pre-contemplation ^b	.21	.32*	.59*	-.52*	-.37*	-.03	-.21	-.19	-.20*	-.29*	-.28*	.40*	.24*	1											
15. RCQ Contemplation ^b	-.03	.11	-.40*	.53*	.26*	.53*	.56*	.35*	.50*	.53*	.43*	-.34*	-.04	-.32*	1										
16. RCQ Action ^b	-.02	-.14	-.51*	.48*	.60*	.11	.19	.10	.20	.13	.27*	-.18	-.21*	-.56*	.62*	1									
17. Daily Drinking Questionnaire	-.04	.10	-.10	.21	-.09	.80*	.76*	.70*	.72*	.75*	.40*	-.20	.23*	-.03	.59*	.06	1								
18. AUDIT	-.12	.17	-.18	.36*	.10	.74*	.95*	.76*	.72*	.59*	-.21	.31*	-.08	.55*	.10	.80*	1								
19. Drinking Frequency	.05	.06	-.35*	.28	.22	.42*	.56*	.50*	.36*	.29*	.29*	-.08	.10	-.08	.32*	.21*	.64*	.58*	1						
20. Largest Quantity	-.01	.29	-.18	.14	.17	.40*	.51*	.49*	.37*	.23*	.32*	-.06	.18	.18	.32*	.08	.61*	.59*	.64*	1					
21. Binge Frequency	-.03	.06	-.31*	.41*	.00	.63*	.74*	.79*	.67*	.86*	.39*	-.24*	.25*	-.25*	.49*	.08	.84*	.81*	.49*	.49*	1				
22. RAPI	.10	.22	-.17*	.25*	.04	.33*	.56*	.53*	.39*	.41*	.75*	-.11	.07	-.07	.68*	.21*	.51*	.59*	.44*	.60*	.49*	1			
23. Age	.12	-.16	-.15	.04	.25*	.06	.10	.35*	.15	.06	.08	.20	.04	-.17	.05	.13	.15	.14	.24*	.07	.12	.16	1		
24. Sex ^c	-.51*	-.10	.09	.06	-.02	.23*	.24*	.18	.25*	.10	.05	-.37*	.10	-.22	-.20	-.13	.19	.22	-.05	.15	.09	-.08	.12	1	

Note. * = correlation is significant at $p < .05$ level. ^aOver-estimates were coded =1, under/accurate were coded = 0; ^bThese correlations based on the subsample ($n = 68$) of participants who endorsed consumption of alcohol over the lifetime. ^cSex coded male=1, female=0. PNQ= Perceived Norms Questionnaire. RCQ = Readiness to Change Questionnaire. AUDIT = Alcohol Use Disorders Identification Test. RAPI = Rutgers Alcohol Problems Index.

Table B3.3. Zero-order correlations among study variables: Non-attendees (N = 205).

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Pre-assessment																									
1. PNQ-Frequency ^a	1																								
2. PNQ-Quantity ^a	.43*	1																							
3. RCQ Pre-contemplation ^b	-.12	-.01	1																						
4. RCQ Contemplation ^b	.07	.02	-.48*	1																					
5. RCQ Action ^b	.04	-.04	-.30*	.66*	1																				
6. Daily Drinking Questionnaire	-.01	.12	-.13	.26*	.09	1																			
7. AUDIT	.01	.13	-.34*	.66*	.35*	.77*	1																		
8. Drinking Frequency	.17*	.14*	-.25*	.40*	.15	.70*	.70*	1																	
9. Largest Quantity	-.01	.20*	-.17*	.35*	.07	.80*	.79*	.73*	1																
10. Binge Frequency	.05	.21*	-.18*	.34*	.08	.73*	.71*	.77*	.82*	1															
11. RAPI	.07	.10	-.35*	.57*	.25*	.54*	.70*	.60*	.61*	.64*	1														
Delayed follow-up																									
12. PNQ-Frequency ^a	.63*	.27*	-.15	.21*	.23*	.07	.18	.19	.04	.18	.18	1													
13. PNQ-Quantity ^a	.19*	.43*	-.08	.13	.13	.16	.29*	.17	.26*	.38*	.29*	.46*	1												
14. RCQ Pre-contemplation ^b	.02	.06	.62*	-.40*	-.26*	-.06	-.25*	-.20	-.14	-.07	-.26*	-.02	-.08	1											
15. RCQ Contemplation ^b	-.06	-.09	-.34*	.76*	.68*	.29*	.58*	.26*	.30*	.23*	.48*	.15	.10	-.29*	1										
16. RCQ Action ^b	.08	-.07	-.22*	.62*	.81*	.09	.36*	.13	.07	.07	.27*	.20	.03	-.16*	.82*	1									
17. Daily Drinking Questionnaire	-.06	.13	-.23*	.32*	.12	.77*	.74*	.64*	.75*	.71*	.55*	.10	.24*	-.17*	.36*	.12	1								
18. AUDIT	.02	.09	-.34*	.58*	.34*	.72*	.90*	.66*	.79*	.71*	.73*	.15	.27*	-.27*	.58*	.36*	.81*	1							
19. Drinking Frequency	.05	.12	-.26*	.32*	.16	.76*	.69*	.78*	.69*	.66*	.44*	.20*	.16*	-.12	.33*	.14	.82*	.69*	1						
20. Largest Quantity	-.15	.04	-.26*	.31*	.09	.73*	.76*	.56*	.77*	.62*	.53*	.03	.20*	-.17*	.36*	.11	.86*	.78*	.73*	1					
21. Binge Frequency	-.05	.09	-.22*	.39*	.28*	.81*	.76*	.65*	.77*	.74*	.56*	.12	.22*	-.08	.42*	.21*	.83*	.77*	.76*	.76*	1				
22. RAPI	.09	.15*	-.19*	.47*	.34*	.58*	.71*	.47*	.69*	.56*	.67*	.18	.28*	-.20*	.59*	.42*	.69*	.77*	.54*	.56*	.72*	1			
23. Age	-.01	.12	-.16*	-.11	-.11	.11	.12	.12	.08	.06	-.01	.03	.00	-.06	-.09	-.14	.15	.14	.30*	.16	.01	-.01	1		
24. Sex ^c	-.46*	-.35*	.13	-.14	-.10	.06	-.03	-.09	.07	-.03	-.08	-.44*	-.30*	.02	-.02	-.04	.03	-.02	-.02	.12	.04	-.03	.13	1	

Note. . * = correlation is significant at $p < .05$ level. ^aOver-estimates were coded =1, under/accurate were coded = 0; ^bThese correlations based on the subsample ($n = 159$) of participants who endorsed consumption of alcohol over the lifetime. ^cSex coded male=1, female= 0. PNQ= Perceived Norms Questionnaire. RCQ = Readiness to Change Questionnaire. AUDIT = Alcohol Use Disorders Identification Test. RAPI = Rutgers Alcohol Problems Index.

Table B3.4. Regression results comparing groups on all criterion variables at delayed follow-up while controlling for pre-assessment scores.

	B	(SE)	β	t	p
	Perceived Norm Frequency criterion variable (N = 151; R² = .34)				
Pre-assessment Perceived Norm Frequency ^{a,b,c}	2.88	0.46	1.29	6.24	<.01
Group ^{b,d}	-0.12	0.49	-0.05	-0.24	.81
	Perceived Norm Quantity criterion variable (N = 151; R² = .33)				
Pre-assessment Perceived Norm Quantity ^{a,b,c}	2.32	0.45	1.04	5.17	<.01
Group ^{b,d}	-1.39	0.53	-0.63	-2.62	.01
	RCQ Pre-Contemplation criterion variable (N = 214; R² = .38)^e				
Pre-assessment RCQ Pre-Contemplation	0.70	0.09	0.62	8.21	<.01
Group ^{b,d}	0.31	0.59	0.09	0.53	.60
	RCQ Contemplation criterion variable (N = 214; R² = .52)^e				
Pre-assessment RCQ-Contemplation	0.75	0.06	0.74	12.10	<.01
Group ^{b,d}	1.18	0.51	0.34	2.32	.02
	RCQ Action criterion variable (N = 214; R² = .58)^e				
Pre-assessment RCQ-Action	0.78	0.07	0.76	11.38	<.01
Group ^{b,d}	1.32	0.55	0.31	2.41	.02
	Daily Drinking Questionnaire criterion variable (N = 276; R² = .62)				
Pre-assessment Daily Drinking Questionnaire	0.69	0.06	0.79	11.11	<.01
Group ^{b,d}	-0.28	0.65	-0.04	-0.44	.66
	AUDIT criterion variable (N = 288; R² = .83)				
Pre-assessment AUDIT	0.78	0.04	0.91	21.08	<.01
Group ^{b,d}	0.31	0.24	0.07	1.27	.20
	Drinking Frequency criterion variable (N = 278; R² = .58)				
Pre-assessment Drinking Frequency	0.74	0.05	0.76	16.30	<.01
Group ^{b,d}	0.23	0.23	0.11	0.99	.32
	Largest Quantity criterion variable (N = 278; R² = .49)				
Pre-assessment Largest Quantity	0.68	0.06	0.70	11.84	<.01
Group ^{b,d}	0.98	0.50	0.27	1.98	.04
	Binge Frequency criterion variable (N = 276; R² = .58)				
Pre-assessment Binge Frequency	0.78	0.08	0.76	9.27	<.01
Group ^{b,d}	0.01	0.13	0.01	0.09	.93
	RAPI criterion variable (N = 266; R² = .48)				
Pre-assessment RAPI	0.68	0.10	0.70	6.84	<.01
Group ^{b,d}	-0.02	0.45	-0.01	-0.05	.96

Note. RCQ = Readiness to Change Questionnaire. AUDIT = Alcohol Use Disorders Identification Test. RAPI = Rutgers Alcohol Problems Index. ^aPerceived norm frequency and perceived norm quantity variables were coded as follows: 0 = did not over-estimate the norm, 1 = over-estimated the norm. ^bVariable is dichotomous, standardized beta-value reported is STDY. ^cFIML cannot be used to estimate missing data in analyses using only categorical variables, thus the n reported for these analyses represents all participants who had complete data on the included variables. ^dGroup was coded as follows: 0 = non-attendees, 1 = NASD attendees. ^eThese statistics based on the subset of participants who endorsed consumption of alcohol over the lifetime.

Table B3.5. Regression results comparing groups on all criterion variables at delayed follow-up while controlling for pre-assessment scores and the interaction between pre-assessment score and group.

	B	(SE)	β	t	p
RCQ Pre-Contemplation criterion variable (N = 214; R² = .39)^a					
Pre-assessment RCQ Pre-Contemplation	0.83	0.24	0.74	3.42	<.01
Group ^{a,b,c}	1.58	2.37	0.46	0.67	.50
Pre-assessment RCQ Pre-Contemplation*Group	-0.09	0.17	-0.21	-0.54	.59
RCQ Contemplation criterion variable (N = 214; R² = .53)^a					
Pre-assessment RCQ Contemplation	1.08	0.22	1.05	4.96	<.01
Group ^{a,b,c}	3.01	1.13	0.85	2.66	.01
Pre-assessment RCQ Contemplation*Group	-0.24	0.16	-0.37	-1.52	.13
RCQ Action criterion variable (N = 214; R² = .58)^a					
Pre-assessment RCQ Action	1.01	0.23	0.97	4.44	<.01
Group ^{a,b,c}	2.68	1.45	0.73	1.86	.06
Pre-assessment RCQ Action*Group	-0.16	0.15	-0.27	-1.08	.28
Daily Drinking Questionnaire criterion variable (N = 276; R² = .62)					
Pre-assessment Daily Drinking Questionnaire	0.66	0.18	0.75	3.60	<.01
Group ^{b,c}	-0.40	0.64	-0.06	-0.64	.53
Pre-assessment Daily Drinking Questionnaire*Group	0.03	0.13	0.04	0.20	.84
AUDIT criterion variable (N = 288; R² = .83)					
Pre-assessment AUDIT	0.71	0.10	0.83	6.94	<.01
Group ^{b,c}	0.06	0.27	0.01	0.22	.82
Pre-assessment AUDIT*Group	0.06	0.07	0.09	0.83	.41
Drinking Frequency criterion variable (N = 278; R² = .58)					
Pre-assessment Drinking Frequency	0.69	0.17	0.71	4.14	<.01
Group ^{b,c}	0.17	0.24	0.08	0.74	.46
Pre-assessment Drinking Frequency*Group	0.05	0.15	0.06	0.32	.75
Largest Quantity criterion variable (N = 278; R² = .48)					
Pre-assessment Largest Quantity	0.82	0.21	0.84	3.95	<.01
Group ^{b,c}	1.25	0.62	0.35	2.01	.04
Pre-assessment Largest Quantity*Group	-0.12	0.18	-0.16	-0.65	.51
Binge Frequency criterion variable (N = 276; R² = .60)					
Pre-assessment Binge Frequency	0.55	0.27	0.53	2.07	.04
Group ^{b,c}	-0.08	0.11	-0.06	-0.73	.47
Pre-assessment Binge Frequency*Group	0.20	0.23	0.26	0.87	.38
RAPI criterion variable (N = 266; R² = .49)					
Pre-assessment RAPI	0.37	0.28	0.39	1.34	.18
Group ^{b,c}	-0.49	0.37	-0.14	-1.32	.19
Pre-assessment RAPI*Group	0.23	0.18	0.33	1.30	.19

Note. RCQ = Readiness to Change Questionnaire. AUDIT = Alcohol Use Disorders Identification Test. RAPI = Rutgers Alcohol Problems Index. ^aThese statistics based on the subsamples of participants who endorsed consumption of alcohol over the lifetime. ^bVariable is dichotomous, standardized beta-value reported is STDY. ^cGroup was coded as follows: 1 = non-attendees, 2 = NASD attendees.

Table B3.6. Regression results comparing groups on all criterion variable at delayed follow-up while controlling for pre-assessment scores and attendance at the event "Rodeo" during either reporting period.

	B	(SE)	β	t	p
Perceived Norm Frequency criterion variable (N = 151; R² = .34)					
Pre-assessment Perceived Norm Frequency ^{a,b,c}	2.88	0.47	0.57	6.16	<.01
Group ^{b,d}	-0.01	0.53	-0.01	-0.02	.99
Rodeo attendance before pre-assessment ^b	-0.04	0.64	-0.02	-0.06	.95
Rodeo attendance between assessments ^b	-0.81	1.07	-0.36	-0.76	.45
Perceived Norm Quantity criterion variable (N = 151; R² = .38)					
Pre-assessment Perceived Norm Quantity ^{a,b,c}	2.35	0.47	0.49	4.99	<.01
Group ^{b,d}	-1.20	0.56	-0.52	-2.12	.03
Rodeo attendance before pre-assessment ^b	1.32	0.64	0.58	2.06	.04
Rodeo attendance between assessments ^b	0.84	1.07	0.37	0.79	.43
RCQ Pre-Contemplation criterion variable (N = 214; R² = .39)^e					
Pre-assessment RCQ Pre-contemplation	0.70	0.09	0.63	8.14	<.01
Group ^{b,d}	0.26	0.61	0.08	0.42	.68
Rodeo attendance before pre-assessment ^b	0.13	0.87	0.04	0.15	.88
Rodeo attendance between assessments ^b	0.53	1.23	0.16	0.43	.67
RCQ Contemplation criterion variable (N = 214; R² = .53)^e					
Pre-assessment RCQ Contemplation	0.77	0.07	0.75	11.69	<.01
Group ^{b,d}	0.88	0.55	0.25	1.61	.11
Rodeo attendance before pre-assessment ^b	-0.88	0.68	-0.25	-1.28	.20
Rodeo attendance between assessments ^b	0.58	1.02	0.17	0.57	.57
RCQ Action criterion variable (N = 214; R² = .58)^e					
Pre-assessment RCQ Action	0.80	0.07	0.76	11.46	<.01
Group ^{b,d}	1.21	0.59	0.33	2.04	.04
Rodeo attendance before pre-assessment ^b	-0.54	0.67	-0.14	-0.80	.43
Rodeo attendance between assessments ^b	0.14	0.93	0.04	0.15	.88
Daily Drinking Questionnaire criterion variable (N = 276; R² = .63)					
Pre-assessment Daily Drinking Questionnaire	0.67	0.06	0.77	10.59	<.01
Group ^{b,d}	-0.75	0.67	-0.11	-1.13	.26
Rodeo attendance before pre-assessment ^b	0.24	1.28	0.04	0.19	.85
Rodeo attendance between assessments ^b	3.85	2.02	0.57	1.91	.06
AUDIT criterion variable (N = 288; R² = .83)					
Pre-assessment AUDIT	0.76	0.04	0.90	21.42	<.01
Group ^{b,d}	0.26	0.25	0.06	1.06	.30
Rodeo attendance before pre-assessment ^b	0.44	0.54	0.10	0.81	.42
Rodeo attendance between assessments ^b	0.88	0.52	0.21	1.70	.09
Drinking Frequency criterion variable (N = 278; R² = .59)					
Pre-assessment Drinking Frequency	0.74	0.05	0.77	14.96	<.01
Group ^{b,d}	-0.04	0.24	-0.02	-0.16	.87
Rodeo attendance before pre-assessment ^b	-0.48	0.36	-0.23	-1.31	.19
Rodeo attendance between assessments ^b	1.28	0.64	0.61	2.00	.05
Largest Quantity criterion variable (N = 278; R² = .49)					
Pre-assessment Largest Quantity	0.68	0.07	0.70	10.08	<.01
Group ^{b,d}	0.78	0.52	0.22	1.49	.14
Rodeo attendance before pre-assessment ^b	-0.49	0.67	-0.14	-0.74	.46
Rodeo attendance between assessments ^b	0.79	1.02	0.22	0.77	.44
Binge Frequency criterion variable (N = 276; R² = .59)					
Pre-assessment Binge Frequency	0.75	0.09	0.74	8.17	<.01
Group ^{b,d}	-0.05	0.15	-0.04	-0.35	.73
Rodeo attendance before pre-assessment ^b	0.16	0.31	0.11	0.51	.61
Rodeo attendance between assessments ^b	0.74	0.53	0.53	1.38	.17
RAPI criterion variable (N = 266; R² = .51)					
Pre-assessment RAPI	0.64	0.11	0.67	5.75	<.01
Group ^{b,d}	-0.33	0.52	-0.09	-0.62	.53
Rodeo attendance before pre-assessment ^b	0.38	0.70	0.11	0.54	.59
Rodeo attendance between assessments ^b	3.19	1.83	0.89	1.74	.08

Note. RCQ = Readiness to Change Questionnaire. AUDIT = Alcohol Use Disorders Identification Test. RAPI = Rutgers Alcohol Problems Index. ^aPerceived norm frequency and perceived norm quantity variables were coded as follows: 0 = did not over-estimate the norm, 1 = over-estimated the norm. ^bVariable is dichotomous, standardized beta-value reported is STDY. ^cFIML cannot be used to estimate missing data in analyses using only categorical variables, thus the n reported for these analyses represents all participants who had complete data on the included variables. ^dGroup was coded as follows: 0 = non-attendees, 1 = NASD attendees. ^eThese statistics based on the subsamples of participants who endorsed consumption of alcohol over the lifetime.