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A Novel Approach for Streamlining Delivery of Brief Motivational Interventions to Mandated College Students: Using Group and Individual Sessions Matched to Level of Risk

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Abstract

Background—Mandated college students (those in violation of a campus alcohol policy) are heterogeneous with respect to alcohol consumption. Thus, when universities consider required treatment for mandated students, one promising option is to match treatment intensity according to level of alcohol involvement. The present study evaluates such an approach with minimal resources.

Methods—Mandated students ($N = 285$) were required to complete a baseline assessment. Participants identified as high-risk (5+ past month alcohol problems AND 2+ past month heavy drinking episodes) received a one session individual Brief Motivational Intervention (I-BMI) whereas those identified as low-risk (all others) received a one session group Brief Motivational Intervention (G-BMI). I-BMI and G-BMI sessions were delivered by doctoral students in Clinical Psychology. Follow-up assessments were collected 1 month post-intervention (response rate = 73%).

Results—The vast majority of students complied with their requirement. Participants assigned to I-BMI reported an 82% reduction in drinks per week, a 58% reduction in heavy episodic drinking, and a 74% reduction in alcohol-related problems at a 1 month follow-up. Participants assigned to

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Declaration of interest

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G-BMI reported a 61% reduction in drinks per week and a 42% reduction in alcohol-related problems at follow-up relative to baseline.

Conclusion/Importance—We demonstrate that matching intervention intensity on baseline alcohol involvement with mandated students is feasible and associated with short-term reductions in alcohol use and consequences. Universities may wish to consider the procedure outlined here as a way of allocating more resources to those who drink at problematic levels.

Keywords

Alcohol; brief motivational intervention; mandated students; drinking; college students

Introduction

Alcohol misuse among college students remains a serious concern, with 35% consuming 5 or more drinks in a row during the past 2 weeks, and 13% meeting criteria for past 2-week “extreme bingeing” (10 or more) (Johnston, O’Malley, Bachman, Schulenberg, & Miech, 2015). In general, drinking rates among college students exceed those of their non-college peers (Johnston et al., 2015), and 18–24 year olds are at risk for a range of alcohol-related consequences such as hangovers, driving under the influence, and sexual assault (Hingson, Zha, & Weitzman, 2009). Due to the impact of heavy drinking on college campuses, universities are charged with implementing prevention and intervention approaches to reduce alcohol-related harm (Kilmer, Crounce, & Larimer, 2014).

Mandated students

A subpopulation of college students that have received a great deal of attention are “mandated” or “adjudicated” students (Barnett & Read, 2005). Some studies have observed that, relative to other college students, mandated students report more weekly drinks (Merrill, Carey, Lust, Kalichman, & Carey, 2014), heavy drinking days (Barnett et al., 2004), and alcohol-related problems (Barnett et al., 2004). Although this group reports generally high levels of alcohol consumption, they are still heterogeneous with respect to rates of alcohol use and misuse. For example, while Merrill et al. (2014) observed a reported average of 12.3 drinks/week among mandated students, there was substantial variability ($SD = 8.6$), with 20% reporting five or fewer drinks/week, and over 15% reporting more than 20 drinks/week. Similarly, Barnett et al. (2008) identified a “*Why me?*” cluster (29.3% of sample) marked by relatively low levels of alcohol use as well as a “*So What?*” cluster (24.7% of sample) characterized by high levels of heavy drinking days and alcohol problems in a mandated student sample. Thus, although average levels of drinking may be elevated among mandated students, the heterogeneous nature of the population is an important consideration in the design and implementation of alcohol interventions (e.g., Borsari et al., 2012).

Brief motivational interventions

Brief motivational interventions (BMIs) are widely supported for reducing alcohol misuse among college students (Carey, Scott-Sheldon, Elliott, Garey, & Carey, 2012). In one meta-analysis of alcohol interventions for mandated students, BMI-style approaches were

associated with short-term reductions in alcohol quantity and alcohol-related problems at short-term (i.e., <3 months) follow-ups (Carey, Scott-Sheldon, Garey, Elliott, & Carey, 2016).

As the literature supporting the efficacy of BMIs has grown, researchers have tried minimizing the resources needed to administer the intervention without compromising effectiveness. One of these approaches has been delivering the intervention in a group, rather than individual, format (e.g., Labrie, Earleywine, Lamb, & Shelesky, 2006; LaBrie, Thompson, Huchting, Lac, & Buckley, 2007). In one study, Hustad, Pearson, Neighbors, & Borsari (2014) randomly assigned mandated students to an individual BMI (iBMI) or group BMI (gBMI) session. Relative to baseline, participants in both conditions reported a lower peak BAC and fewer alcohol-related consequences at 1-, 3-, and 6-month post-intervention (no change was observed for drinks per week). However, there were no significant differences between iBMI and gBMI, suggesting that group interventions are effective among mandated students in that particular study. In spite of these promising findings, the efficacy of group BMI sessions should be treated with some caution since one meta-analysis (Carey, Scott-Sheldon, Carey, & DeMartini, 2007) of preventive interventions for college students revealed that individual sessions typically outperform group sessions across all intervention styles (i.e., not just BMIs). Furthermore, CollegeAim (2015) has categorized individual BMIs in the “higher effectiveness” category, and group BMIs in the “moderate effectiveness” category. This may be due in part to the fact that there is a large literature supporting individual BMIs for college drinking, whereas group BMIs have only been evaluated in a few RCTs for college alcohol use.

Furthermore, although Hustad et al. (2014) did not examine this specifically, it is possible that drinking status may have moderated those findings such that heavy drinkers responded best to iBMIs. That is, since participants in individual sessions will be given more therapeutic attention, those in greater need of treatment (i.e., heavier drinkers) may benefit more from a one-on-one meeting. It also provides greater opportunity for therapists to tailor their session to each client, which is a key component of Motivational Interviewing (Miller & Rollnick, 2013). For example, by talking to students one-on-one, therapists in an individual session may be more able to challenge normative misperceptions than therapists in a group sessions. Conversely, participants identified as lower risk (i.e., lighter drinkers) may not need such a resource-intensive intervention, and a group session could be more appropriate for them.

Dissemination of BMIs—To date, nearly all the work on BMIs has been conducted in resource-rich environments in the context of elegantly designed experimental studies (e.g., Borsari & Carey, 2000; Murphy et al., 2001; Wood et al., 2010); research focused on implementation, however, is lacking. As noted above, this research suggests that BMIs are efficacious, and the National Institute of Alcohol Abuse and Alcoholism (2002) has designated them as “Tier 1” Interventions for college students (indicating greatest effectiveness). Nonetheless a series of studies show they are rarely used among universities/colleges more broadly. In one survey assessing sanctions among higher education institutions, only 25% reported an individual Motivational Interview requirement with mandated students (The Center for Leadership in Public Service, 2010). In a more recent

study of 343 institutions, mandated students were rarely referred to an alcohol education program (Bernat, Lenk, Nelson, Winters, & Toomey, 2014). Of those who did receive alcohol education, it is likely that even fewer participated in a BMI or other empirically supported program. In another survey that queried campus administrators from 330 colleges or universities, respondents were asked the extent to which certain programs/activities were used in prevention efforts (Anderson & Gadaletto, 2006). “Individual Motivational Interviews” were ranked lower than “Residence Hall programs/meetings,” “Poster/slogan campaigns,” and “Educational handouts prepared by campus groups.”

We speculate that one possibility for the low use of BMIs in colleges and universities is that they might be perceived as costly, and CollegeAim (2015) has indeed identified this intervention as being in the “mid-range” cost category. Given the resources necessary to conduct BMIs (CollegeAim, 2015), and the fact many mandated students are not drinking at problematic levels (Barnett et al., 2004; Merrill et al., 2014), approaches that more selectively use resources are warranted. One model that has gained recent support is “stepped care” where all participants receive a low-intensity phase 1 intervention, and only people who continue to engage in risky drinking receive a more intensive phase 2 intervention (i.e., Borsari et al., 2012). Stepped care is a notable improvement over the standard approach of assigning all students, regardless of risk, to the same intervention. However, stepped care can be administratively challenging. Schools must have the resources to: (1) provide a brief (phase 1) intervention to all students, (2) administer a post-intervention assessment, (3) determine whether students meet high- or low-risk criteria after that assessment, (4) assign high-risk students to a second (phase 2) intervention, and (5) conduct phase 2 interventions. Also, since low-risk drinkers are not given any kind of phase 2 intervention, there may be an incentive for people to under-report their alcohol use.

Purpose of current study

The current study was undertaken to evaluate a new approach that could be feasibly implemented in higher education as an alternative to stepped care. Specifically, mandated students identified as high-risk were assigned to an *individual* session, whereas those identified as low-risk were assigned to a highly comparable *group* session. Our approach utilizes evidence-based practices, appeals to institutional preferences, and addresses the limitations of stepped care (Borsari, Tevyaw, Barnett, Kahler, & Monti, 2007; Borsari et al., 2012). We administered in-person BMIs because these are the most widely supported interventions for alcohol prevention with college students. Although we could have administered group sessions to all participants regardless of risk, there was institutional preference at the administration level for providing individual face-to-face BMI sessions with the highest risk students. This preference seems consistent with the practices reported by other institutions. In the survey by Anderson and Gadaletto (2006), 46% of institutions mandated individual BMIs for students with an alcohol incident; there was no mention of group BMIs at all. Also, as noted above, there are fewer studies supporting the efficacy of group (versus individual) sessions, and there are conceptual reasons (i.e., session tailoring) to prefer individual sessions, especially for heavy drinkers. Finally, as is typical when conducting research within the context of current practice, we only had the resources to

administer one assessment and one intervention, which is incompatible with the stepped care model (Borsari et al., 2012).

To establish our model as a potentially viable approach, it is necessary to first show feasibility and risk reduction. In line with those goals, the aims of this study are to: (1) demonstrate the feasibility of matching interventions for mandated students by level of risk and (2) examine whether this triage model will be associated with less alcohol involvement at a 1-month follow-up. If successful, this could provide universities with a valuable approach for judiciously administering resources.

Method

Design overview

The current study is a quasi-experimental two-group design. Mandated students identified as high-risk for problematic drinking were assigned to a one-session individual BMI session (I-BMI). Mandated students identified as low-risk for problematic drinking were assigned to a one-session group BMI session (G-BMI). An optional 1-month follow-up assessment was conducted.

Participants and procedure

All students who were first-time violators of the alcohol policy at a mid-sized New England public university were mandated to complete a confidential baseline (T1) assessment. This was used to identify participants as high risk (5+ past-month alcohol problems AND 2+ incidents of HED) or low risk (all others). This criterion was established by determining the number of available interventionist hours, and working backward to project how many individual versus group BMI sessions could be assigned within that time constraint. Baseline drinking data from the previous year informed this decision.

High-risk participants ($n = 57$) received an email saying they were required to complete an I-BMI session, and that they should email the counselor directly to set up a time. Low-risk participants ($n = 256$) received an email saying they were required to complete a G-BMI session, and were sent an online sign-up sheet (which typically had two options per week). Prior to their session, all students (in both I-BMI and G-BMI) were required to complete the e-CHECKUP TO GO (Moyer, Rikard, Van Sickle, Walters, & Wilson, 2004), and told they must bring the printed feedback to their session. The feedback consisted of 10 pages of personalized results, such as normative drinking information (relative to same-gender college students, and college students as the study site), Blood Alcohol Content, money spent on alcohol, and the number of calories in alcoholic drinks.

Students who did not comply with these instructions (either completion of the screening survey or completion of the BMI) were sent one reminder email. If they remained non-compliant 1 week after this reminder, they received a campus hold and became unable to register for classes or request a transcript until their sanction was fulfilled. The median number of days between the incident and the referral was 14.0 for I-BMI and 9.0 for G-BMI. The median number of days between the incident and the session was 35.5 for I-BMI and 31.0 for G-BMI.

One month after their session, participants received an email link to a confidential follow-up survey (T2), and 72.6% completed the questionnaire. Although it was voluntary, participants were incentivized to complete the follow-up assessment by receiving one less semester of disciplinary probation (those who participated were placed on probation for two semesters and those who did not participate were placed on probation for three semesters). Recruitment is further depicted in Figure 1. All policies and procedures were approved by the Institutional Review Board.

Interventions

I-BMI and G-BMI sessions were administered by one of three Ph.D. Clinical Psychology students. Interventionists received 2 days of training and regular supervision from the fourth author. Training consisted of a review of Motivational Interviewing skills and approaches to working with mandated students. Specific components included: an overview of MI (such as discussion around empathetic responses and the spirit of MI), information on reflective listening skills, use of open- and close-ended questions, change talk facilitation, rapport building strategies, responding to resistant clients, and completion of exercises aimed at incorporating MI skills into sessions. Additionally, review of e-CHECKUP TO GO feedback was provided with specific instruction on alcohol information related to BAC levels, alcohol outcome expectancies, college normative beliefs, protective behaviors, family history, and other general alcohol information. Supervision entailed weekly group meetings discussing completed sessions and a review of recorded audio files.

Both I-BMI and G-BMI sessions were modeled after the BASICS manual (Dimeff, Baer, Kivlahan, & Marlatt, 1999). Specifically, interventionists discussed pros and cons of drinking, common “myths” of alcohol, alcohol expectancies, protective behavioral strategies, the biphasic effects of alcohol, and e-CHECKUP TO GO results. This feedback was discussed in all BMI sessions. I-BMI and G-BMI varied by delivery method only; identical content was covered. There were a total of 38 G-BMI sessions, with an average of 7 (SD = 3.75; range 2–16¹) students in each. All sessions lasted between 30 and 60 minutes (for I-BMI: $M = 45.6$ [SD = 10.4]; for G-BMI: $M = 57.4$ [SD = 7.9]).

Measures

Demographics—At T1, participants indicated their gender, age, race, ethnicity, and Greek status. Greek status, which refers to fraternity/sorority membership, was obtained with one item adapted from Capone, Wood, Borsari, & Laird (2007), and coded dichotomously as “Greek-involved” (member, pledge, or rush) or “non-Greek” (not a member, pledge, or rush).

Drinks per week—At T1 and T2, the number of drinks per week was obtained by multiplying open-ended responses to “Thinking back over the past 30 days, in a typical week, on how many days did you drink alcohol?” and “Thinking back over the past 30 days, on days when you drank, how many drinks did you typically consume?”

¹Students are especially likely to receive an alcohol citation during certain parts of the year, such as the beginning of fall semester. Conversely, at other times (e.g., just before final exams), very few citations occur. This disparity accounts for the wide range in number of participants per G-BMI session.

Heavy episodic drinking (HED)—At T1 and T2, HED was assessed by asking: “Within the past month, how many times have you had [5/4 (for men/women)] drinks on one occasion?”

Alcohol problems—At T1 and T2, 48 alcohol problems were measured with the Young Adult Alcohol Consequences Questionnaires (YAACQ; Read, Kahler, Strong, & Colder, 2006). Participants indicated how many alcohol-related consequences (i.e., “I have gotten into physical fights because of drinking”) they experienced in the past month in a dichotomous yes/no format. We observed a co-efficient alpha of 0.89.

Analytic plan

All analyses were conducted using SAS Software 9.4 (SAS Inc., Cary, NC) or SPSS 21.

First, we examined whether participants lost to follow-up (across both interventions) were different from those retained at follow-up using independent samples *t*-tests (for drinking variables) and chi-squared (for demographics and condition). T1 and T2 modeling, both within and between participants, was accomplished using generalized mixed modeling with PROC GLIMMIX using Sandwich estimation assuming a Poisson or Binomial distribution, where observations were nested within both participants and treatment groups. Since data are counts and therefore not normally distributed, standardized effect sizes such as Cohen’s *d* cannot be calculated. Instead, the percentage change between baseline and follow-up was used as an estimate of effect size. Multiple comparisons were made using Bonferroni adjustments. Alpha was established at the 0.05 level and all interval estimates were calculated for 95% confidence.

Results

Sample description

In total, 235 participants completed 38 G-BMI sessions (82.5%) and 55 (17.5%) completed I-BMI sessions. Participants were predominantly male, White/Caucasian, and 18 years old (Table 1). This is generally consistent with other mandated student interventions (e.g., Borsari et al., 2012; Hustad et al., 2014) Participants in I-BMI were more likely to be male, $\chi^2(1, N=278) = 7.36, p < 0.01$, and Greek-involved $\chi^2(1, N=278) = 5.32, p < 0.05$ than those in G-BMI. No other demographic differences were significant, *p*’s > 0.05.

Attrition analyses

Participants who were lost at T2 were not different from those retained at T2 on gender, age, race (White vs. non-White), T1 drinking (drinks per week, HED, and alcohol-related problems), and condition (G-BMI vs. I-BMI), all *p*’s > 0.10

Outcomes modeling

Drinks per week—Participants in both G-BMI and I-BMI decreased their drinks per week (Figure 2). Participants receiving I-BMI reported consuming 15.6 (95% CI [12.6, 19.4]) drinks per week at T1 and 2.8 (95% CI [2.0, 3.9]) at T2, a reduction of 82% (*p* < 0.0001). Participants receiving G-BMI reported consuming 4.1 (95% CI [3.5, 4.8]) drinks per week at

baseline and 1.6 (95% CI [1.2, 2.0]) at follow-up, a reduction of 61% ($p < 0.0001$). Students in I-BMI reported 3.8 times more drinks per week at T1 ($p < 0.0001$) and 1.8 times more drink per weeks at T2 ($p = 0.0053$) relative to students in G-BMI.

Heavy episodic drinking—Students in the I-BMI sessions significantly reduced HED frequency, but those in the G-BMI sessions did not (Figure 3). Those receiving I-BMI reported an average of 5.0 (95% CI [4.1, 5.9]) heavy drinking episodes at T1 and 2.1 (95% CI [1.5, 3.0]) at T2, a 58% reduction ($p < 0.0001$). Students receiving G-BMI reported only 0.74 HED episodes on average (95% CI [0.6, 0.9]) at T1 and 0.75 (95% CI [0.6, 0.9]) at T2 ($p = 0.99$). Students in I-BMI had 6.7 times more heavy drinking episodes at T1 ($p < 0.0001$) and 2.8 times more at T2 ($p < 0.0001$) relative to students in G-BMI.

Alcohol problems—Both G-BMI and I-BMI reported significant decreases in alcohol problems (Figure 4). For I-BMI, there was an average of 8.9 (95% CI [7.4, 10.7]) alcohol-related problems at T1 and 2.3 (95% CI [1.6, 3.4]) at T2, a reduction of 74% ($p < 0.0001$). For G-BMI, there was an average of 1.9 (95% CI [1.6, 2.3]) alcohol related problems at T1 and 1.1 (95% CI [0.9, 1.4]) at T2, a reduction of 42% ($p < 0.0001$). Students in I-BMI reported 4.7 times more alcohol-related problems at T1 ($p < 0.0001$) and 2.1 times more at T2 ($p = 0.01$) than students in G-BMI.

High/low-risk drinking

As an ancillary analysis, we examined how many participants in the I-BMI group moved from high-risk drinking to low-risk drinking, and how many participants in the G-BMI group moved from low-risk to high-risk. This was done with the same criteria specified earlier (high-risk: 2+ HED episodes *and* 5+ consequences; low risk: all others). Among the 33 participants who completed I-BMI and were retained at follow-up, 23 (70%) transitioned to low-risk criteria at follow-up, while 10 (30%) remained high-risk. Among the 174 participants who completed G-BMI and were retained at follow-up, 155 (89%) remained low risk, while only 19 (11%) moved to high-risk criteria.

Discussion

The present study was designed to examine the feasibility (Aim 1) and risk reduction (Aim 2) of a triage model for treating mandated college students. Regarding feasibility (Aim 1), the majority of students adhered to their requirement (see Figure 1). Specifically, 89.5% of students who received a violation ultimately participated in an I-BMI or G-BMI session, and nearly all students (I-BMI: 98.2%, G-BMI: 94.5%) who were assigned to an intervention completed it. Furthermore, Doctoral students were motivated to lead the sessions in order to accrue clinical hours and receive intensive training and supervision in motivational interviewing. As such, none of the therapists needed monetary compensation. All additional responsibilities for this program were managed by the part-time Graduate Assistant (1st author), and the Director of Substance Abuse Prevention Services (6th author). The fact that these interventions were feasible from a financial perspective is especially noteworthy given the comprehensive nature of the program. Throughout the course of approximately 1.5 academic semesters, 298 undergraduate students received a BMI. Since the vast majority of

people only needed a group intervention, it was possible for three therapists each working around 6–7 hours per week to see such a large number of students.

Regarding risk reduction (Aim 2), for the high-risk students receiving I-BMI, all drinking outcomes improved at follow-up and over two-thirds of these students moved out of high-risk drinking. This is consistent with past research showing substantial reductions in alcohol involvement 1-month post-intervention among heavy drinking college students receiving a BMI (Carey, Carey, Miasto, & Henson, 2006; Wood, Capone, Laforge, Erickson, & Brand, 2007). For the low-risk students receiving G-BMI, significant reductions were observed in two of the three drinking outcomes (drinks per week and alcohol problems), despite low base-rates. Furthermore, relatively few students (11%) in G-BMI transitioned to high-risk drinking at follow-up. Taken together, these findings indicate that both interventions were associated with reductions in alcohol involvement. In fact, we observed these effects with a primarily male and heavily Greek sample, despite research suggesting that individuals from these groups respond poorly to BMIs (Henson, Pearson, & Carey, 2015; Scott-Sheldon, Carey, Kaiser, Knight, & Carey, 2016).

One notable finding is the very modest rate of alcohol use among low-risk mandated students, which comprised a large majority (82.5%) of the sample. On average, these students only consumed 4.1 drinks per week, and experienced 0.75 incidents of past 2-week HED. These findings suggest that many adjudicated college students do not consume alcohol at problematic levels, consistent with research on the heterogeneity of college drinking (Barnett et al., 2008). This finding contributes further to the idea, developed by Borsari et al. (2012), that a “one-size fits all approach” for intervening on college alcohol use may not be appropriate, and treatment should be matched to the level of need.

However, unlike Borsari and colleagues (2012), all participants here completed a 30–60 minute BMI. The intensity of treatment differed only with respect to whether this session was group or individual, determined by baseline alcohol involvement. In contrast, using stepped care (Borsari et al., 2012), all mandated students receive a low-intensity Step 1 treatment, and only students classified as heavy drinkers at a follow-up period receive a Step 2 treatment. While stepped care is a promising method of allocating interventions, widespread dissemination may be difficult due to the drawbacks discussed earlier. The model presented here seems to be a viable alternative.

Strengths, limitations, and future directions

The primary strengths of the current study include the relatively large sample size and the fact that all mandated students participated at baseline (i.e., did not self-select into the study). Given the promising findings and ease of implementation, this study provides a useful framework for how colleges can feasibly implement evidence-based interventions with mandated students.

The current study has several limitations. First, since participants were assigned to condition based on their drinking patterns, our design did not allow for a comparison of the efficacy between I-BMI and G-BMI. Future research could randomly assign both low-risk and high-risk students to either an I-BMI or G-BMI. This 2×2 design would provide an empirical

test of whether the matching procedure is in fact beneficial. Second, research suggests that simply receiving a sanction is associated with self-initiated reductions in alcohol use (e.g., Morgan, White, & Mun, 2008; White, Mun, & Morgan, 2008). Therefore, since the current study lacked a control group, the extent to which BMIs reduced alcohol use compared to the sanction effect (combined with regression toward the mean for I-BMI) is unknown. Third, our follow-up response rate was relatively low (72%). This concern, however, is mitigated by the fact that participants lost at follow-up were not different from those who completed the follow-up on demographics or baseline drinking. Fourth, the 1 month follow-up period is short. We lacked the available resources to conduct an additional assessment (e.g., 3 months), but a promising future direction would be determining whether the effects observed in this real-world setting persist. Finally, there was a relatively long gap between the incident and session (median number of days >30). This was due to several factors such as: heavy burden on the student conduct staff (particularly during Orientation, Halloween, and Spring Break), and the ability of students to appeal their sanction and request a hearing. Nonetheless, it might be beneficial for the intervention to occur more proximal to the incident, and future studies could work on narrowing that window. Additionally, other research could explicitly compare the efficacy of a “one-size fits all approach” with an intervention matched to level of need. Similarly, researchers may wish to consider the cost-effectiveness of the approach outlined here to one in which all students receive an individual face-to-face BMI.

Conclusions

Assigning high-risk mandated students to I-BMI and low-risk mandated students to G-BMI in the manner described here is both feasible and effective. Few students failed to complete their required session, and this approach can be implemented for a large number of students with minimal resources. Furthermore, these interventions were associated with substantial reductions in alcohol involvement. Colleges and universities looking to develop an evidence-based policy for intervening with mandated students may wish to consider this procedure.

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References

- Anderson, DS., Gadaletto, AF. Results of the 2006 college alcohol survey. 2006. Retrieved from caph.gmu.edu/assets/caph/2006CollegeAlcoholSurveyResults.pdf
- Barnett NP, Borsari B, Hustad JT, Tevyaw TOL, Colby SM, Kahler CW, Monti PM. Profiles of college students mandated to alcohol intervention. *Journal of Studies on Alcohol and Drugs*. 2008; 69(5): 684–694. [PubMed: 18781243]
- Barnett NP, Read JP. Mandatory alcohol intervention for alcohol-abusing college students: A systematic review. *Journal of Substance Abuse Treatment*. 2005; 29(2):147–158. DOI: 10.1016/j.jsat.2005.05.007 [PubMed: 16135343]
- Barnett NP, Tevyaw TOL, Fromme K, Borsari B, Carey KB, Corbin WR, Colby SM, Monti PM. Brief alcohol interventions with mandated or adjudicated college students. *Alcoholism: Clinical and Experimental Research*. 2004; 28(6):966–975. DOI: 10.1097/01.ALC.0000128231.97817.C7

- Bernat DH, Lenk KM, Nelson TF, Winters KC, Toomey TL. College law enforcement and security department responses to alcohol-related incidents: A national study. *Alcoholism: Clinical and Experimental Research*. 2014; 38(8):2253–2259. DOI: 10.1111/acer.12490
- Borsari B, Carey KB. Effects of a brief motivational intervention with college student drinkers. *Journal of Consulting and Clinical Psychology*. 2000; 68(4):728–733. DOI: 10.1037/0022-006X.68.4.728 [PubMed: 10965648]
- Borsari B, Hustad JT, Mastroleo NR, Tevyaw TOL, Barnett NP, Kahler CW, Eaton E, Monti PM. Addressing alcohol use and problems in mandated college students: A randomized clinical trial using stepped care. *Journal of Consulting and Clinical Psychology*. 2012; 80(6):1062–1074. DOI: 10.1037/a0029902 [PubMed: 22924334]
- Borsari B, Tevyaw TOL, Barnett NP, Kahler CW, Monti PM. Stepped care for mandated college students: A pilot study. *American Journal on Addictions*. 2007; 16(2):131–137. [PubMed: 17453615]
- Capone C, Wood MD, Borsari B, Laird RD. Fraternity and sorority involvement, social influences, and alcohol use among college students: A prospective examination. *Psychology of Addictive Behaviors*. 2007; 21:316–327. DOI: 10.1037/0893-164X.21.3.316 [PubMed: 17874882]
- Carey KB, Carey MP, Maisto SA, Henson JM. Brief motivational interventions for heavy college drinkers: A randomized controlled trial. *Journal of Consulting and Clinical Psychology*. 2006; 74(5):943–954. DOI: 10.1037/0022-006X.74.5.943 [PubMed: 17032098]
- Carey KB, Scott-Sheldon LA, Carey MP, DeMartini KS. Individual-level interventions to reduce college student drinking: A meta-analytic review. *Addictive Behaviors*. 2007; 32(11):2469–2494. [PubMed: 17590277]
- Carey KB, Scott-Sheldon LA, Elliott JC, Garey L, Carey MP. Face-to-face versus computer-delivered alcohol interventions for college drinkers: A meta-analytic review, 1998 to 2010. *Clinical Psychology Review*. 2012; 32(8):690–703. DOI: 10.1016/j.cpr.2012.08.001 [PubMed: 23022767]
- Carey KB, Scott-Sheldon LAJ, Garey L, Elliott JC, Carey MP. Alcohol interventions for mandated college students: A meta-analytic review. *Journal of Consulting and Clinical Psychology*. 2016; 84:619–632. DOI: 10.1037/a0040275 [PubMed: 27100126]
- Center for Leadership in Public Service, Fisher College, Office of the President. Research study to evaluate the role and effectiveness of campus law enforcement and student affairs in combating overconsumption on college campuses. Boston, MA: 2010.
- CollegeAim. Individual level strategies. 2015. Retrieved from collegedrinkingprevention.gov/CollegeAIM/IndividualStrategies/default.aspx
- Dimeff, LA., Baer, JS., Kivlahan, DR., Marlatt, GA. Brief alcohol screening and intervention for college students (BASICS): A harm reduction approach. Guilford Press; New York: 1999.
- Henson JM, Pearson MR, Carey KB. Defining and characterizing differences in college alcohol intervention efficacy: A growth mixture modeling application. *Journal of Consulting and Clinical Psychology*. 2015; 83:370–381. DOI: 10.1037/a0038897 [PubMed: 25730522]
- Hingson RW, Zha W, Weitzman ER. Magnitude of and trends in alcohol-related mortality and morbidity among US college students ages 18–24, 1998–2005. *Journal of Studies on Alcohol and Drugs* s16. 2009; :12–20. DOI: 10.15288/jsads.2009.s16.12
- Hustad JT, Pearson MR, Neighbors C, Borsari B. The role of alcohol perceptions as mediators between personality and alcohol-related outcomes among incoming college-student drinkers. *Psychology of Addictive Behaviors*. 2014; 28(2):336–347. DOI: 10.1037/a0033785 [PubMed: 24467197]
- Johnston, LD., O'Malley, PM., Bachman, JG., Schulenberg, JE., Miech, RA. Monitoring the future national survey results on drug use, 1975–2014: Volume 2, College students and adults ages 19–55. Ann Arbor: Institute for Social Research, The University of Michigan; 2015.
- Kilmer JR, Cronce JM, Larimer ME. College student drinking research from the 1940s to the future: Where we have been and where we are going. *Journal of Studies on Alcohol and Drugs*. 2014; 75(s17):26–35. DOI: 10.15288/jsads.2014.75.26 [PubMed: 24565309]
- LaBrie J, Earleywine M, Lamb T, Shelesky K. Comparing electronic-keypad responses to paper-and-pencil questionnaires in group assessments of alcohol consumption and related attitudes. *Addictive Behaviors*. 2006; 31(12):2334–2338. DOI: 10.1016/j.addbeh.2006.03.004 [PubMed: 16626878]

- LaBrie JW, Thompson AD, Huchting K, Lac A, Buckley K. A group motivational interviewing intervention reduces drinking and alcohol-related negative consequences in adjudicated college women. *Addictive Behaviors*. 2007; 32(11):2549–2562. DOI: 10.1016/j.addbeh.2007.05.014 [PubMed: 17628347]
- Merrill JE, Carey KB, Lust SA, Kalichman SC, Carey MP. Do students mandated to intervention for campus alcohol-related violations drink more than nonmandated students? *Psychology of Addictive Behaviors*. 2014; 28(4):1265–1270. 10.1037/a0037710. [PubMed: 25180559]
- Miller, WR., Rollnick, S. *Motivational interviewing: Helping people change*. 3rd. Guilford Press; New York, NY: 2013.
- Morgan TJ, White HR, Mun EY. Changes in drinking before a mandated brief intervention with college students. *Journal of Studies on Alcohol and Drugs*. 2008; 69(2):286–290. DOI: 10.15288/jsad.2008.69.286 [PubMed: 18299770]
- Moyer, R., Rikard, J., Van Sickle, D., Walters, ST., Wilson, L. *The electronic CHECKUP TO GO*. San Diego, California: Developed at San Diego State University; 2004.
- Murphy JG, Duchnick JJ, Vuchinich RE, Davison JW, Karg RS, Olson AM, Smith AF, Coffey TT. Relative efficacy of a brief motivational intervention for college student drinkers. *Psychology of Addictive Behaviors*. 2001; 15(4):373–379. DOI: 10.1037/0893-164X.15.4.373 [PubMed: 11767271]
- National Institute of Alcohol Abuse and Alcoholism. *A call to action: Changing the culture of drinking at US colleges*. Bethesda, MD: US Department of Health and Human Services; 2002.
- Read JP, Kahler CW, Strong DR, Colder CR. Development and preliminary validation of the young adult alcohol consequences questionnaire. *Journal of Studies on Alcohol*. 2006; 67(1):169–177. DOI: 10.15288/jsa.2006.67.169 [PubMed: 16536141]
- Scott-Sheldon LAJ, Carey KB, Kaiser TS, Knight JM, Carey MP. Alcohol interventions for Greek Letter Organizations: A systematic review and meta-analysis, 1987 to 2014. *Health Psychology*. 2016; 35:670–684. DOI: 10.1037/hea0000357
- White HR, Mun EY, Morgan TJ. Do brief personalized feedback interventions work for mandated students or is it just getting caught that works? *Psychology of Addictive Behaviors*. 2008; 22(1): 107–116. DOI: 10.1037/0893-164X.22.1.107 [PubMed: 18298236]
- Wood MD, Capone C, Laforge R, Erickson DJ, Brand NH. Brief motivational intervention and alcohol expectancy challenge with heavy drinking college students: A randomized factorial study. *Addictive Behaviors*. 2007; 32(11):2509–2528. DOI: 10.1016/j.addbeh.2007.06.018 [PubMed: 17658696]
- Wood MD, Fairlie AM, Fernandez AC, Borsari B, Capone C, Laforge R, Carmona-Barros R. Brief motivational and parent interventions for college students: A randomized factorial study. *Journal of Consulting and Clinical Psychology*. 2010; 78(3):349–361. DOI: 10.1037/a0019166 [PubMed: 20515210]

Figure 1.
Procedural Flowchart.

Figure 2. Drinks per Week at Baseline and Follow-up Among Students Receiving I-BMI and G-BMI sessions. Means and 95% Confidence Intervals are displayed.

Figure 3. Heavy Episodic Drinking at Baseline and Follow-up Among Students Receiving I-BMI and G-BMI sessions. Means and 95% Confidence Intervals are displayed.

Figure 4. Alcohol-related Problems at Baseline and Follow-up Among Students Receiving I-BMI and G-BMI sessions. Means and 95% Confidence Intervals are displayed.

Table 1

Sample demographics.

Variables	I-BMI <i>N</i> (%)	G-BMI <i>N</i> (%)
Gender		
Female	10 (20.0)	96 (41.7)
Male	38 (79.2)	134 (58.3)
Age		
17	4 (8.3)	9 (3.8)
18	22 (45.8)	126 (54.8)
19	17 (35.4)	57 (24.8)
20	5 (10.4)	27 (11.7)
21+	0 (0)	11 (4.8)
Race		
White/Caucasian	44 (91.7)	182 (79.1)
Black/African American	1 (2.1)	8 (3.5)
Asian	0 (0)	11 (4.8)
Pacific Islander	0 (0)	1 (.4)
Other	3 (6.3)	18 (7.8)
Multi-racial	0 (0)	10 (4.3)
Ethnicity		
Hispanic or Latino	1 (2.1)	24 (10.4)
Not Hispanic or Latino	47 (97.9)	206 (89.6)
Greek Involvement		
Greek-involved	20 (41.7)	58 (25.2)
Non-Greek	28 (58.3)	172 (74.8)

Note. Two participants in the I-BMI group and five participants in the G-BMI group failed to answer demographic data.