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Brief Alcohol Interventions With Mandated or Adjudicated College Students

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Abstract

This article summarizes the proceedings of a symposium presented at the 2003 RSA Meeting in Ft. Lauderdale, Florida, organized and chaired by Nancy Barnett. The purpose of the symposium was to present information and efficacy data about approaches to brief intervention with students who get into trouble on their campuses for alcohol and as a result are required to attend alcohol education or counseling. Presentations were (1) Differences Between Mandated College Students and Their Peers on Alcohol Use and Readiness to Change, by Tracy O'Leary Tevyaw; (2) An Effective Alcohol Prevention Program for Mandated College Students, by Kim Fromme; (3) Two Brief Alcohol Interventions for a Referred College Population, by Kate Carey; and (4) Brief Motivational Intervention With College Students Following Medical Treatment or Discipline for Alcohol, by Nancy Barnett. The data presented in this symposium indicated that students who are evaluated or disciplined for alcohol use are on average heavy drinkers who drink more heavily than their closest peers. Brief intervention approaches described by the speakers included group classroom sessions, individual motivational intervention, individual alcohol education, and computerized alcohol education. Reductions in consumption and problems were noted across the various intervention groups. Brief motivational intervention as a general approach with mandated students shows promise in that it reduced alcohol problems in a group of mandated students who were screened for being at risk (in the Borsari and Carey study) and increased the likelihood that students would attend further counseling (in the Barnett study).

Keywords

College; Brief Intervention

TENS OF THOUSANDS of alcohol and drug arrests occur on U.S. campuses each year. According to a recent large survey of U.S. college administrators, more than one half of violations of campus policies involve alcohol (Anderson and Gadaletto, 2001). Students who receive a citation for violating university rules concerning alcohol use may be at particular risk for problematic alcohol involvement, as they compose a disproportionate number of heavy drinkers and alcohol abusers compared with nonadjudicated samples (Caldwell, 2002; O'Hare, 1997). Most colleges have mandatory sanctions for alcohol violations such as alcohol education classes or alcohol counseling (from 55% in 1985 to 84% in 2001; Anderson and Gadaletto,

2001), yet despite the ubiquity of such requirements, very few studies have adequately described these students, and, to date, there has been only one randomized controlled studies of their effects (Keillor et al., 1999). This symposium brought together researchers who have studied the characteristics of college students who were required to attend alcohol education or counseling and have tested the efficacy of brief (1-4 hr) interventions with this population.

DIFFERENCES BETWEEN MANDATED COLLEGE STUDENTS AND THEIR PEERS ON ALCOHOL USE AND READINESS TO CHANGE

Tracy O'Leary Tevyaw, Peter M. Monti, and Suzanne M. Colby

Adults who are mandated to substance abuse treatment seem to benefit as much from treatment as those who are self-referred (Lawental et al., 1996; Sia et al., 2000). In several studies, mandating individuals to receive treatment significantly increased compliance and treatment attendance rates (Lawental et al., 1996; Martin et al., 2003), with interventions that target motivation and readiness to change showing promise in improving treatment participation, retention, and completion rates among court-ordered individuals (Lincour et al., 2002; Sia et al., 2000). However, concern has been raised that harm reduction approaches may be fundamentally incompatible with mandated treatment (Wild, 1999) and that mandated treatment status may be associated with worse outcomes in some populations (e.g., Hohman et al., 2003; Stark and Campbell, 1988).

Mandated College Students and Harm Reduction Approaches

Examination of college students who are mandated to receive alcohol education as a result of infractions of campus alcohol policies may help to address this issue. The relationship between heavy drinking and negative consequences among college students is well established (Abbey et al., 1998; Wechsler et al., 2000; Wood et al., 2000), with ~70% of college students reporting drinking in the past month and 40% reporting heavy drinking in the past month (O'Malley and Johnston, 2002). To date, harm reduction approaches, such as motivational enhancement interventions, have shown considerable promise with reducing hazardous drinking and drinking-related problems among college student drinkers (Larimer and Crouce, 2002).

Less is known of the impact of mandated status on drinking rates among college students. Indeed, there is limited information about how mandated students differ from their nonmandated peers on motivational and substance use variables. Moreover, most student drinking likely goes undetected, with only a small fraction of students being mandated to complete campus-based intervention as a result of alcohol-related infractions. College students tend to drink together (Humphreys et al., 1997), and peers significantly affect drinking levels (Baer, 1994). Thus, one possible avenue for targeting students who are at higher risk and might not otherwise come to the attention of campus administrators is to examine the peers of students who are mandated to undergo intervention, with the assumption that these peers may have similar drinking profiles to those of mandated students.

Comparisons of Mandated Versus Nonmandated Students

We compared baseline levels of substance use, motivation, and individual difference variables between mandated college students ($n = 32$) and their age- and sex-matched college peers ($n = 32$) who did not have an alcohol infraction. Mandated students and their peers were recruited as part of a treatment outcome study. The study was conducted at a private 4-year northeast university. Student Life Offices referred students who had alcohol-related infractions of university policy to the study as part of a mandatory alcohol education program. Students had the option to participate in the study in lieu of paying a fine to the university for their infraction. Eligible students were between 18 and 24 years of age, English speaking, enrolled full time at

the university, and mandated to receive alcohol education for an alcohol-related infraction. After informed consent, an individual, 45-min assessment battery was administered to students, who were asked to identify a peer of the same sex who would be willing to participate in the study. To ensure that the nature of the student-peer relationship was stable, meaningful, and positive, mandated students' level of investment in their relationship with nominated peers was assessed using the Important People Instrument (Longabaugh and Zywiak, 1998). These nominated, nonmandated peers were eligible to participate if they were 18 to 24 years of age, not a current or former significant other of the student, the same sex as the student, saw the student at least once a week, and rated by the student as important to them and supportive of them.

Mean age of mandated students was 19.1 years ($SD = 1.4$), and nonmandated students were also 19.1 years of age on average ($SD = 1.6$). The majority of mandated (88%) and nonmandated (87%) students lived on campus, and most were white (84.6% of mandated students and 76.9% of nonmandated students). Results indicated that nonmandated students reported significantly higher grades in school and a lower percentage of heavy drinking days in the past month than mandated students. Mandated students also had significantly higher scores on the Young Adult Alcohol Problems Screening Test (Hurlbut and Sher, 1992). There were no significant differences between mandated students and their peers on readiness to change drinking, percentage of drinking days in the past month, number of supportive people or average level of support in one's social network, perceived norms for drinking frequency and quantity, or how much they liked the study and felt comfortable in their participation in the study.

Summary

Findings lend support to the notion that targeting the social network of students who are cited for alcohol-related infractions of university policy may be an effective strategy for increasing reach. Whereas mandated students did report significantly higher levels of heavy drinking days and alcohol-related problems, nonmandated and mandated students were similar in their motivation to change hazardous drinking, their perceptions of peer norms for drinking, and their social support network size and quality. Indeed, mandated and nonmandated students reported very high perceived norms for drinking: for example, in response to the assessment item, "How many drinks per drinking occasion does the average college student your age drink?" mandated students reported a mean of 6.9 drinks per drinking occasion, and nonmandated students reported 7.2. These high perceptions of drinking, coupled with their actual drinking rates, suggest that nonmandated students might similarly benefit from an intervention that addresses these areas.

AN EFFECTIVE INTERVENTION TO REDUCE HEAVY DRINKING AND ASSOCIATED NEGATIVE CONSEQUENCES AMONG COLLEGE STUDENTS

Kim Fromme and William R. Corbin

Heavy drinking is not a new phenomenon on college campuses, yet both the amount of alcohol consumed per occasion and the number of drinking occasions by college students continue to be high, despite recent prevention efforts. On most college campuses, drinking is both accepted and expected. Traditions such as postexam celebrations, tailgate parties at football games, and fraternity drinking contests promote heavy episodic drinking. Binge drinking (typically defined as five or more consecutive drinks on one occasion for men and four or more consecutive drinks for women) is reported by 56% of college men and 35% of college women (Wechsler et al., 1994). Problems associated with binge drinking include direct effects of acute intoxication and negative consequences of intoxicated behavior (e.g., blackouts and DUI, respectively).

Compared with lighter drinking peers, student binge drinkers are twice as likely to report hangovers, three times as likely to experience blackouts, and six times as likely to drive after drinking.

Prevention of Heavy Episodic Drinking and Associated Consequences

Previous successful prevention efforts have focused on the benefits of reducing consumption and increasing positive alternatives (Baer et al., 1992; Kivlahan et al., 1990). The Alcohol Skills Training Program and Brief Alcohol Strategies and Intervention for College Students used cognitive-behavioral and motivation enhancement techniques (Miller and Rollnick, 1991) to effectively reduce drinking and dependence symptoms (Baer et al., 1992; Kivlahan et al., 1990; Marlatt et al., 1995). Programs that focus on social influence and misperceptions of peer behavior have also shown promise (Hansen et al., 1988). College students reliably estimate that peers drink more than peers actually report (Baer et al., 1991). Such misperceived peer norms may escalate students' drinking practices and have therefore become a target for intervention. The Risk Skills Training Program, for example, facilitated more accurate evaluations of the consequences of substance use and intoxicated driving by challenging positive beliefs about these behaviors and overestimations of peer behavior (D'Amico and Fromme, 2002). Thus, brief, cognitive-behavioral, motivation enhancement approaches that emphasize positive aspects of change and provide corrective feedback regarding peer drinking behavior are successful in reducing heavy drinking.

Peer Advisor Programs

Of 118 colleges and universities surveyed, 70% used undergraduates to provide health education (Winston and Ender, 1988). Use of peer advisors reflects a health education philosophy that students are better able to relate to peers than to adult professionals. Despite their popularity, however, there is little empirical research on the efficacy of peer-based programs. The few available outcome studies show promise (for review, see Parkin and McKeganey, 2000), with peer advisors effectively delaying the onset of adolescent substance use and behavioral intent about unsafe sexual behavior. Nonetheless, findings are mixed with regard to the relative efficacy of peer- versus professional-led programs, with some evidence for the superiority of peer-led groups (Botvin et al., 1990) and others showing no advantage for peer- over adult-led programs (Rickert et al., 1991).

Lifestyle Management Class

Although abstinence is clearly the safest alternative, few students refrain from drinking. Consequently, the Lifestyle Management Class (LMC) is based on a harm reduction model. It is designed to reduce heavy drinking, associated negative consequences of acute intoxication, driving after drinking, and perceived peer drinking norms. Available to any University of Texas student, the LMC is primarily intended for students who are referred by the Office of the Dean of Students/Student Judiciary Services, Division of Housing/Food Service, or Department of Intercollegiate Athletics for Men. The LMC maintains a nonjudgmental attitude toward substance use and strives for a realistic appraisal of college drinking behavior. Students learn to moderate their use and to choose behaviors that reduce negative outcomes and facilitate achievement of personal lifestyle goals. Individualized graphic feedback allows students to evaluate their drinking in relation to their peers.

The LMC consists of two, 2-hr group sessions held 1 week apart. The first LMC session addresses the philosophy of self-management, moderation, and balance. The supports and barriers that students experience in making lifestyle changes are discussed within the Stage Model of Change (Prochaska et al., 1994). Students then explore concepts of lifestyle management through moderation by completing a self-assessment of risk for alcohol-related problems. The second session examines harm reduction concepts related to drinking (e.g.,

avoiding DUI and risky sex). Students are also provided individualized graphic feedback (based on pretest measures) that illustrates their own drinking, drug use, and sexual behavior relative to estimated and actual peer averages; lists drinking consequences that they have experienced; and summarizes students' alcohol expectancies. The feedback provides the focus for discussion about both overestimation of peer drinking and the influence of expectancies on behavior. Finally, time and stress management is presented to promote a balanced lifestyle. Because motivational enhancement is a key component of the LMC, leaders are trained in motivational interviewing techniques (Miller and Rollnick, 1991) and strategies for facilitating group discussions in a nonjudgmental and empathic manner.

LMC Instructors

The peer advisors are student volunteers who receive a three-credit-hour training course followed by a two-semester course in which they contribute 30 volunteer hours teaching or assisting with campus health outreach. For a recent outcome evaluation of the LMC, professional staff leaders were doctoral candidates in clinical psychology who had a minimum of 3 years' training in clinical assessment and therapy skills and a research background in addictive behaviors. The professional leaders also completed a 2-day training course in LMC philosophy and curriculum.

Test of the Efficacy of the LMC

The LMC was recently tested in a randomized, controlled design, with the classes facilitated by either peer advisors or professional staff (Fromme and Corbin, 2004). Participation by campus volunteers and disciplinary-referred students presented an opportunity to test the intervention as a universal and targeted prevention program, respectively.

Disciplinary participants ($n = 124$) were recruited from students who were mandated to take the LMC because of substance-related campus infractions. Voluntary participants ($n = 452$) were recruited through fliers, advertisements in the campus paper, and introductory psychology courses. All participants were randomly assigned to a peer- or professional-led LMC or to a waitlist/control group. Participants completed a pretest assessment 1 week before the first LMC and at a comparable time for waitlist/control conditions. Posttest assessments were completed by all participants ~4 weeks after the end of the LMC and 6 weeks after the pretest.

Approximately 6 months after completing the pretest, all participants except mandated sample waitlist/controls completed follow-up questionnaires. Participants were paid \$20 for each pre- and posttest assessment and \$35 for the follow-up assessment.

Consistent with study hypotheses, LMC participants significantly reduced their drinking after drinking, with a trend toward decreases in negative consequences of acute intoxication. Men in the mandated group and those higher in readiness to change among the voluntary sample also showed a significant reduction in their heavy drinking. No differences were found in outcomes for participants who were in peer- or professional-led LMC groups, suggesting that both types of group leaders are effective. Nevertheless, an independent evaluation of instructor quality and adherence and participant measures of knowledge of class material favored professional- over peer-led classes. Because greater quality, adherence, and knowledge were not associated with a better overall outcome, findings collectively suggest that there may be something unique about the use of peer leaders in promoting change in the drinking behavior of college students. Perhaps a combination of peer and professional co-leaders might promote the greatest amount of change among college student drinkers. Regardless of leader status, the LMC shows promise as both a universal and a targeted intervention for college drinking and associated negative consequences.

TWO BRIEF ALCOHOL INTERVENTIONS FOR REFERRED STUDENTS

Brian Borsari and Kate B. Carey

The search continues for effective and innovative interventions to curtail heavy, episodic drinking on college campuses. Of particular concern is the development of ways to reduce the alcohol use and consequences of students who have been referred for alcohol-related violations. Adaptation of programs designed for adults with drinking problems has limited utility as a result of their philosophy of abstinence-based rehabilitation, as well as the failure of most heavy drinking students to perceive their alcohol use as a problem (Knight et al., 2002). Educational programs designed primarily to teach students about the risks associated with excessive drinking have also failed to achieve desired reductions in alcohol use (Bangert-Drowns, 1988; Hingson et al., 1997; Wechsler et al., 2002). One interpretation of this consistent lack of effectiveness is that risky drinking does not represent a lack of knowledge but rather a lack of motivation to change. Therefore, more targeted approaches with components that address motivational enhancement are needed to assist the students who are already drinking heavily.

Brief Motivational Interventions in the College Setting

Among adults, brief motivational interventions (BMIs) have emerged as a potentially effective method of reducing alcohol use in nondependent adult drinkers (Bien et al., 1993; Wilk et al., 1997). Because of their brevity (one to four sessions) and their focus on risk reduction, BMIs are suited for use with college student drinkers. In addition, BMIs are promising with college students because they pair educational information about alcohol with strategies that increase motivation for decreasing use. Indeed, a recent review (Larimer and Crounse, 2002) indicated that individual BMIs were more effective for reducing alcohol use than education (e.g., Garvin et al., 1990), values clarification (teaching students to incorporate responsible decision making; e.g., Barnett et al., 1996), and normative education (providing accurate information regarding peer alcohol use and approval of drinking; e.g., Schroeder and Prentice, 1998).

To date, five published studies have evaluated in-person BMIs for college students (Baer et al., 1992, 2001; Borsari and Carey, 2000; Larimer et al., 2001; Murphy et al., 2001). Taken together, these five studies indicate that BMIs with college students lead to reduced drinking and, to a lesser extent, alcohol-related problems. However, two limitations are evident in this research. First, BMIs have yet to be compared with control groups that receive sessions of similar length, format, and content. Although the content of previous control conditions may have been similar to the information provided during the BMIs, the structure and format was much different [e.g., group format (Larimer et al., 2001); an educational videotape (Murphy et al., 2001)]. Second, there is no published research indicating whether BMIs will be effective with students who are referred for alcohol violations. Previous research has been performed with students who were identified as “at risk” during mass screenings and asked to participate voluntarily (e.g., Borsari and Carey, 2000). Therefore, many questions remain about how referred students will receive and respond to a personalized intervention to address their alcohol use. It is likely that certain attributes make referred students a special class of intervention recipients, creating unique challenges for the design and implementation of brief interventions with referred students. For example, referred students are often heavy drinkers (Caldwell, 2002; O’Hare, 1998). In addition, being mandated to receive an intervention may limit the student’s receptivity to any information presented. Students may feel unjustly accused or may view the interviewer as part of the Judicial Affairs system.

Current Study

The current study used a randomized control group design to evaluate the effectiveness of a BMI compared with an alcohol education session (AE) in a referred sample. Recruitment sites

were established at two campuses in the northeastern United States. Campus A is a large liberal arts school with 11,500 undergraduates, and campus B is a much smaller Jesuit college with 2,000 undergraduates. All students who were referred for alcohol violations completed the screening measures, and those who met screening criteria were invited to participate. Screening criteria were a score of 10 or higher on the AUDIT (WHO Brief Intervention Study Group, 1996) and/or two or more binge drinking episodes in past month [defined as five or more drinks on one occasion for men and four or for women (Wechsler et al., 2002)]. Students were told that participation was voluntary and that involvement in *either* the study or regular program services would allow them to fulfill their obligations to the program. Baseline and 3-month assessments were part of their obligation; students received \$15 for the follow-up assessments at 6 months. The senior author administered both the AE ($n = 30$) and the BMI ($n = 34$) interventions in a one-on-one format. The interventions were structurally equivalent regarding the sequence of topics and educational content covered, but the two interventions differed in several ways.

The BMI followed the Brief Alcohol Strategies and Intervention for College Students format (Dimeff et al., 1999) and was different from the AE sessions in four ways. First, the information collected at baseline was provided using a personalized feedback form that structured subsequent discussion. This form provided an individualized introduction to topics such as normative quantity/frequency of drinking, blood alcohol concentration (BAC) and tolerance, alcohol-related problems, influence of setting and triggers of drinking, and alcohol expectancies. Second, the BMI students received information related to their personal experiences (e.g., discussing the BAC achieved during the heaviest day of drinking in the past month). Third, the Harm Reduction model (cf. Marlatt and Witkiewitz, 2002) was introduced as a way to minimize risky behaviors. Fourth, the BMI interviewer followed the four principles of motivational interviewing: express empathy, develop discrepancy, roll with resistance, and support self-efficacy for change (see Miller and Rollnick, 2002). Options for change were developed over the course of the interview, encouraging the student's active collaboration and cooperation.

The AE session was designed to present the type of information currently used in many AE groups across the United States (e.g., Hingson et al., 1997). Information about alcohol and its effects was provided without making attempts to elicit personal information or change talk regarding problem recognition. The topics discussed during the session were not explicitly linked to personal use, and any questions that the student may have were answered factually. Personal goals to reduce alcohol use were not developed during the AE session; instead, common risk reduction strategies were provided.

To assess treatment integrity, raters listened to the content of each session ($r = 0.90$). Percentages (number of tapes that included a specific topic divided by total number of tapes rated) were calculated for both BMI ($n = 15$) and AE ($n = 16$) sessions. For content specific to BMI, 77 to 100% (mode and median 93%) was covered in BMI sessions, but 0 to 28% (mode and median 6%) of AE sessions included BMI-specific content. Thus, the interventions were distinct.

Findings and Implications

The pattern of findings at 6-month follow-up was encouraging. A general trend emerged in both groups for high-risk drinking and alcohol-related problems to decrease after the interventions. Hierarchical linear modeling techniques revealed significant reductions in binge drinking episodes in the past month and in typical blood alcohol content (tBAC) for both groups (within-group effect sizes within the small to moderate range). However, the BMI group demonstrated significantly greater reductions in alcohol-related problems than the AE group

(within-group effect sizes of 1.11 and 0.07, respectively). Collateral observations confirmed self-reported reductions in drinking.

Although the small to moderate effect sizes evident were consistent with previous research involving nonreferred students (Baer et al., 2001; Collins et al., 2002; Murphy et al., 2001), very large effects were evident for the reductions in alcohol-related problems. It is important to evaluate these outcomes in context. Specifically, when interpreting the magnitude of effect sizes, resistance of the dependent variable to change and the degree of manipulation of the independent variable are important considerations (Prentice and Miller, 1993). In this study, participants were heavy drinking students who had committed alcohol violations and who continued to drink in a hazardous manner an average of 75 days after the triggering event. An individual session of ~1 hr in length was associated with significant reductions in alcohol use 6 months later. This is an encouraging finding for colleges and universities that seek to reduce the alcohol use of the students who have been referred for alcohol-related violations, a population that is by definition “at risk.”

Despite a general trend for all participants to engage in less risky drinking, between-group reductions in alcohol-related problems favored the BMI group. This is in contrast with previous research that has failed to detect decreases in problems after a brief intervention (Borsari and Carey, 2000; Larimer et al., 2001; Murphy et al., 2001). It is possible that differences in the content and process between the two groups contributed to the observed differences in problems associated with drinking. Careful documentation of treatment fidelity and process established that the groups did differ on many dimensions. Regarding content, the BMI students received personalized feedback on alcohol use, BAC, perceived norms, expectancies, and alcohol-related problems; they also discussed harm reduction strategies. This may have increased the participants’ motivation to reduce the riskiest aspects of their alcohol use. Satisfaction ratings provided by students indicated that their intervention, even though mandated, was a positive and useful experience. We also had independent raters make ratings of the process of interactions within the AE and BMI sessions; these are important data because they are less likely to be influenced by reporting bias. Students who participated in personalized BMIs expressed greater levels of affect and disclosed more personal information than students who received an AE. In addition, BMI students were seen as more engaged and seemed to derive more personal benefit from the session. The BMI sessions were also viewed to be more collaborative than the AE sessions.

Although the results of this study indicate that motivational interventions are a promising approach for reducing alcohol use in referred students, some limitations deserve mention. First, the sample contained relatively few women. This reflects that referred populations tend to be predominantly male (Caldwell, 2002; O’Hare, 1998); however, it would have been desirable to have more powerful tests of sex interactions. Second, the study design did not address potential confounds that may affect interpretation of results. It is possible that some change over time may reflect regression to the mean and that being referred for an alcohol violation may put into place processes of change independent of interventions [e.g., historical or maturational effects (Campbell, 1969)]. Appropriate comparison conditions must be carefully considered in studies of this type to rule out potential confounds as a result of change-inducing effects of the alcohol violation per se, as opposed to specific intervention components. However, in light of the dearth of evaluation data on the outcomes of interventions for referred students (National Institute on Alcohol Abuse and Alcoholism, 2002), it is helpful to establish that change does occur.

In sum, this study demonstrated that students who were referred for alcohol-related infractions on two markedly different campuses do reduce their drinking and alcohol-related problems after a mandated intervention. Although they pose unique challenges, referred students were

particularly receptive to the motivational intervention. The nonjudgmental and empathetic style of motivational interviewing appealed to the students, and they responded favorably to the concept of harm reduction rather than abstinence, demonstrated by the decrease in alcohol-related problems evident in the BMI group over the course of the project. Students who received the individual alcohol education session also reduced their alcohol use, suggesting that simply providing an opportunity to discuss alcohol-related information with an empathetic nonjudgmental interviewer can influence drinking behaviors. Thus, this study suggests that BMIs are an acceptable and effective way to decrease the alcohol use and problems of students who have already begun to experience adverse consequences of their drinking.

BRIEF MOTIVATIONAL INTERVENTION WITH COLLEGE STUDENTS FOLLOWING MEDICAL TREATMENT OR DISCIPLINE FOR ALCOHOL

Nancy P. Barnett, Suzanne M. Colby, and Peter M. Monti

Acute intoxication, vandalism, fights, and other alcohol-related incidents are commonplace on college campuses and compose a large proportion of the emergency medical treatment cases and arrests made by campus police forces (Anderson and Gadaletto, 2001; Wright et al., 1998; Wright and Slovis, 1996). A number of studies also have found alcohol to be the most common reason for a disciplinary case in college (Dannells, 1991; Stone and Lucas, 1994). Students who have alcohol-related incidents are not likely to self-refer for counseling but may be in need of effective services. As one way to address the need to evaluate these students, most colleges and universities have alcohol policies that require attendance at alcohol education or counseling for students who are cited for a policy infraction (Anderson and Gadaletto, 2001) or who are otherwise identified as having problematic alcohol use.

As a client-centered and empathic intervention approach, motivational interviewing (Miller and Rollnick, 2002) is well suited for application with students who are required to attend counseling and who therefore may be defensive about the mandate or uninterested in discussing their alcohol use. It is also possible that conducting an intervention after a salient alcohol-related event will capitalize on the student's concern about the event or interest in avoiding another. Although well tested and clearly efficacious for high-risk college students (Baer et al., 2001; Borsari and Carey, 2000; Larimer et al., 2001), little is known about the efficacy of motivational interventions with mandated students.

Study Design

The purpose of this study was to test a 2×2 design comparing a brief motivational intervention with standard alcohol education and comparing a 1-month booster session with no booster on drinking and alcohol-related consequences among undergraduates who have had a medical or disciplinary event related to alcohol and are mandated to attend a session of alcohol education. Students were enrolled at a private college in the Northeast and were eligible for the study when they were required to attend a session with a health educator after either medical treatment for intoxication or a disciplinary hearing related to alcohol. Seniors were excluded because the transition out of college would occur during follow-up and we expected that that would make interpretation of results with this sample difficult. Students were offered the option to participate in the research project as a way to meet the requirement that they meet with a health educator, and 65% agreed. After enrollment, participants completed a baseline assessment, which included demographics, measures of the incident characteristics and the participants' response to the incident, motivation to change, alcohol consumption, and alcohol-related behavior and risks.

Intervention Conditions

After the assessment, participants were randomly assigned to receive one session of either motivational intervention (MI) or standard alcohol education (SE). The MI consisted of a 45-min session with a master's or doctoral level counselor who had been fully trained in motivational interviewing. The purpose of the MI session was to give participants an opportunity to talk about the reason for the referral in a nonjudgmental context, to evaluate for themselves their use of alcohol and the alcohol use of their friends and parents, to learn more about alcohol-related risks in general and the risks that they personally show, and, for interested students, to create personalized strategies for avoiding alcohol-related harm. Within the MI, participants received personalized feedback that included normative information about alcohol consumption, information about their BACs over the previous month, and details about specific risks that they showed with regard to alcohol problems and dependence. A harm reduction approach was taken throughout the sessions, which entailed focusing on the consequences that the participants experienced rather than on the fact that they had been drinking.

The SE condition consisted of a 45-min session with a computerized alcohol education program (Alcohol 101, 1998). The program is an engaging, graphically sophisticated CD-ROM that provides information through participation in a "virtual party." Different approaches used in the program include branching video clips in which the user can see the outcome of different decisions made by the actors; multiple-choice questions; monologues; and an interactive "virtual" bar in which the user can see the effects of different types of alcohol, drinking rate, sex, and weight on BAC. Some of the topics covered in the program include sex differences in alcohol metabolism, the effects of drinking after driving, sexual decision making, and drinking games. Students were given only a few instructions about using this program, including that they had to keep the audio headphones on to ensure that they listened to the program and that they spend the entire 45 min with the program. Otherwise, students were free to choose the elements of the programs that they wanted to view.

After the intervention, participants were randomly assigned to receive or not receive a booster session 1 month later. The booster condition was conducted using the same type of intervention that the participant received at baseline and lasted for 25 to 30 min. Follow-up interviews were conducted 3 months after the baseline intervention by a research assistant who was blind to baseline and booster condition.

Early Findings

To date, 117 participants have completed the 3-month follow-up, for a 91% follow-up rate. The sample is 53% male and mostly freshman (73%), with an average age of 18.8. Two thirds of the sample are white (67.5%). Participants were referred after evaluation by the campus Emergency Medical Service (82%) and/or a disciplinary hearing for an infraction related to alcohol (20%). Approximately one third of those who were evaluated by Emergency Medical Service were transported to the campus infirmary for observation and 13% were transported to the hospital.

The average number of standard drinks that participants reported consuming before their incident was 8.4, their mean estimated BAC for the incident was 0.21%, and 10% also reported having used other drugs at the time of the incident. Other evidence that the incidents were serious are that 74% of the participants reported vomiting and 54% reported having had a blackout. Participants highly endorsed internal attributions for the incident, including indicating that they thought that the incident was (mostly to totally) their fault (71%) and that their alcohol use was (mostly to totally) responsible for the incident (65%). Participants also showed relatively low endorsement of the belief that the incident was due to bad luck or someone else's behavior (23%). In addition to feeling responsible for the incident, there was

converging evidence that the incident had an impact on the participants' later behavior, in that the majority (70%) indicated that they had changed their behavior to avoid a similar incident and 39% reported that they had moderated or stopped their drinking. However, at the time of the baseline assessment, 56% of the sample were in precontemplation to change heavy drinking, whereas 27% were in preparation or beyond. Almost every participant (90%) said that he or she would not have pursued any sort of counseling or help if it had not been required. On average, the sample reported 3 days of heavy drinking in the past month, an average BAC of 0.09, and a high BAC of 0.20. The average score on the AUDIT was 10, with 61% of the sample scoring above the cut score of 8. Participants reported experiencing an average of eight different alcohol-related consequences over the past year, and 34% reported having an alcohol-related injury in the past year.

Repeated measures analyses on the 3-month follow-up data revealed that both intervention groups significantly reduced their frequency of drinking in terms of number of days drinking and number of heavy drinking days in the past month and their volume of drinking as measured by drinks per week, but no differences between groups were detected on alcohol use. Typical day BAC was significantly reduced in the SE group but not in the MI group. No differences were found on the number of alcohol consequences experienced. Finally, significantly more participants in the MI condition had pursued further counseling (22% vs. 4% in SE), and 22% of participants in the booster condition had pursued further counseling (vs. 4% in the no-booster condition). Those who had received MI *with* booster were the largest group to seek further assistance (19%).

Conclusions

This randomized controlled trial found that participants who were required to attend alcohol counseling after a serious medical or disciplinary event related to alcohol were on average heavy drinkers with a recent pattern of drinking problems. The events that they experienced followed heavy-drinking episodes and had serious outcomes. Participants in this study reported feeling responsible for the event, many reported having changed their drinking and/or related behavior since the event, and the majority felt as though they needed to make no further changes to their drinking.

The intervention trial was designed to test the efficacy of promising approaches with college participants, using an MI approach that is generally well regarded for at-risk participants, and comparing that with an ecologically valid and cost-effective alternative. As in other studies of brief intervention, including Borsari and Carey's presented in this symposium, time effects were found indicating that both interventions resulted in reductions in consumption. Two group differences were noted, including a reduction in tBAC in the SE group. This finding may be explained by the fact that at the start of the computerized program, participants are taken to the program's "virtual bar," so every participant in this condition is exposed to some information about BAC. This is the only element of the program that every participant in this condition sees. In the MI condition information on BAC is provided as relevant for the participant. It is possible the group difference on tBAC, therefore, is a function of the greater or more universal focus on the topic in the SE condition. Although more controlled work is needed, this finding may indicate the potential effectiveness of this specific educational element.

A second group difference found was that both the MI condition, in which the participants spoke with a counselor about their experiences with alcohol, and the booster condition, in which participants had more time to spend in contact with intervention elements, resulted in more participants' seeking further counseling. Almost one of five participants in the MI-booster group sought further assistance outside of the project. It may be that the nonjudgmental manner in which the MIs are administered makes participants more willing to seek further help and

that having more opportunity to get information or talk to someone also results in a participant's being more willing to consider further assistance. Previous studies have shown MI to enhance treatment engagement for patients who enter residential treatment (Brown and Miller, 1993), but ours is the first study that we are aware of that found greater help-seeking after MI with college participants. Consistent with some other studies of brief intervention (Borsari and Carey, 2000; Larimer et al., 2001; Murphy et al., 2001), this study did not find group differences in alcohol problems. It may be that a reduction in consequences will be more easily detected after a longer follow-up period.

Some limitations of this study should be noted. Because of the nature of the mandatory referral, a delay between the precipitating event and the baseline research assessment is inevitable. Such delays, because of the scheduling of disciplinary hearings and delay on the students' part in contacting the program, have several effects, including decay in recall about the event and decay in the salience of the event. In addition, the event itself may have affected both the participants' drinking since the event (which participants report) and/or their *report* of their drinking before the event or since. As indicated by the participants' reports at baseline, many of these participants believed that they had already taken care of what needed to change or may have been in the process of implementing change at the time of the intervention, which makes it difficult to determine whether later changes were a function of the event, the intervention or some interaction between the two. Future work, including identifying functional triaging systems and cost-effective alternative sanctions, is needed. Nevertheless, these early results generally support the use of brief intervention and may indicate that adding booster sessions, particularly with motivational interventions, may be an effective approach with referred students.

Summary and Recommendations

Although there is considerable evidence that brief interventions are efficacious for high-risk students, the studies described above are among the first randomized controlled trials of brief interventions for students who are required by their college to complete an intervention as a result of recent alcohol-related behavior. It is evident from Dr. O'Leary Tevyaw's presentation that these are indeed students to be concerned about in that they show patterns of alcohol-related consumption and problems that are more extreme than their chosen peers. To design the most effective intervention approaches, more information is needed about these referred students and their violations, including how they differ from high-risk students who participate in voluntary brief intervention studies.

The potential for efficacious intervention with mandated students is great, as the intervention studies described in this symposium demonstrate that group and individual motivational approaches and alcohol education efforts reduced problematic consumption and behavior. Dr. Borsari studied a well-disseminated BMI that has been well tested in other high-risk groups, Dr. Barnett's study indicates that sophisticated computerized interventions can be effective, and Dr. Fromme found that peer advisors can be as effective as professional staff. These findings together suggest that campus counselors have several good alternatives for working with referred students. In addition to replicating the above studies on other campuses, future directions might include measuring behavior change as a function of the event that prompts the referral, as well as understanding how individual and event characteristics interact with specific interventions. Given that most problematic drinking in college occurs in a social context, targeting close peers is also indicated. Evaluating the clinical significance of drinking and harm reduction (Roberts et al., 2000), mechanisms of change, and the cost-effectiveness of these approaches should follow the detection of significant findings.

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