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Routine Use of Screening and Brief Intervention for College Students in a University Counseling Center

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Abstract

This study provides preliminary evidence of the effectiveness of the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) and ASSIST-linked brief intervention in a college mental health clinic. Data are from a single group, pre-post evaluation study (2006–2009) at a university counseling center. Students deemed to be at risk for substance use problems were offered the ASSIST and the ASSIST-linked brief intervention. Staff therapists administered the ASSIST and intervention as part of routine care; 453 students (ages 18–24) participated in the evaluation and completed baseline and six-month follow-up interviews. Changes in alcohol and marijuana use were examined by McNemar's test of proportions and by paired t-tests for means. Slight reductions in the rates and number of days (in the prior 30 days) of binge drinking and marijuana use were found. Routine screening and brief intervention procedures in a mental health setting may reduce problematic substance use among college students.

Keywords

alcohol screening; ASSIST; brief intervention; college; mental health

Evidence is accumulating in support of substance use screening and brief intervention as a strategy to reduce binge drinking and drug use among college students. Screening and brief intervention (SBI) models have been tested with college students in a variety of settings, including primary care clinics (Amaro et al. 2010; Schaus et al. 2009) and emergency rooms (Sise et al. 2005; Baer et al. 2001). Web-based interventions have also been tried with this population with favorable results (Hustad et al. 2010; Saitz et al. 2007). Schaus and colleagues 2009) conducted a randomized, controlled trial of SBI at a large, publicly-funded university health center in the southeastern United States. The intervention group showed significant reductions in number of drinks consumed in one sitting at three- and six-months follow-up, as well as significant reductions in the number of times students were intoxicated per week at the three-month follow-up (Schaus et al. 2009). Most, if not all interventions with college students have used the Brief Alcohol Screening and Intervention of College Students (BASICS) model, a two-session intervention designed by G. Alan Marlatt and others at the University of Washington (Dimeff et al. 1999). While previous studies have assessed the implementation of SBI into routine care in university primary care settings (Helmkamp et al. 2003; Dimeff & McNeely 2000), to our knowledge no studies have tested the effectiveness of SBI delivered as part of routine care in a university mental health setting.

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Alcohol is the most widely used substance among college students (SAMHSA 2004). Alcohol-use patterns among college students range from occasional use in social settings to binge drinking problems. Binge drinking is defined as five or more drinks on one occasion for men and four or more drinks for women (NIAAA 2004). Individuals aged 18 to 25 report the highest rates of heavy and binge drinking (42%) compared to all other age groups, and college students report more use than their noncollege peers (SAMHSA 2004). The range for past-month alcohol use among college students is between 60% and 70%, and the rate of heavy drinking is approximately 40% (Fleming 2002). Male students typically have higher rates of binge drinking than do female students (Fleming 2002). White students report significantly higher rates of heavy drinking than do their Black, Hispanic, and Asian peers (Fleming 2002). SAMHSA (2005) estimates that almost four out of every ten (39%) college students aged 18 to 22 engages in illicit drug use. About one-third (32%) use marijuana, one-fourth (23%) use other substances (i.e., cocaine, methamphetamine, hallucinogens), and one-eighth (12%) use or misuse prescription stimulants (e.g., Adderall and Ritalin; SAMHSA 2005; Walters, Miller & Chiauzzi 2005).

The notion that individuals in this age group who attend college are more likely to drink because of their environment has been well established (Quinn & Fromme 2011; Wechsler et al. 2000; Johnson 1989). One explanation for heavy drinking among college students is that it often is seen as a type of rite of passage for students. As such, it is something students tend to regard as acceptable and normative behavior (Boekeloo, Novik & Bush 2011; Crawford & Novak 2006). Despite its apparent acceptance, heavy drinking can result in various adverse consequences, such as injurious accidents, sexual abuse, fighting, and even death (Hingson et al. 2002). Possible adverse physiological effects range from impaired brain and liver functioning to poor growth and endocrine problems (NIAAA 2006). Binge drinking and frequent intoxication have been linked to poorer academic progress, as well. Wolaver (2002), for example, reported negative correlations between drinking and reduced study hours, resulting in poorer school performance and reduced GPA. Some have even found that the effects of binge drinking last beyond the college years by adversely affecting physical health, which reduces the quality of life. Okoro and colleagues (2004), for example, reported that those who drank more than five drinks on one occasion more than three times a month during their college years were more likely to report fair to poor health and more sick days than their nonbinge-drinking peers.

It has been documented that drinking in groups or in social atmospheres brings greater pleasure and increased levels of euphoria (Weitzman, Nelson & Wechsler 2003; Pliner & Cappell 1974). Because the college experience is largely social in nature—students often find themselves participating in group activities whether it be in classrooms, residence halls, or various academic and social clubs such as honor societies, fraternities, and sororities—it is not surprising that students would be more likely to consume alcohol when they are with peers rather than when they are alone. Further, a case can be made that they are more likely to seek out situations where alcohol use and misuse is encouraged (Clapp et al. 2003; Weitzman, Nelson & Wechsler 2003; Abbey 2002). In the same light, problematic behavior that comes with binge drinking in the form of criminal acts (e.g., vandalism, theft) are more likely to occur and be accepted as somewhat of a social norm (Abbey 2002).

Courtney and Polich (2009) reviewed a number of epidemiological and experimental studies on binge drinking in young adults. Based on their analysis and review, they argue that while binge drinking is an important topic within alcohol research, the lack of empirical support prohibits precise conclusions concerning effects within the young adult population. Nevertheless, there are a number of relatively recent studies that have explored the effect of binge drinking on college students in domains ranging from social issues (Clapp &

Shillington 2001) to physiological factors and risk factors for alcoholism/dependence (Boyd, McCabe & Morales 2005; Hasin, Paykin & Endicott 2001).

This article provides preliminary evidence of the effectiveness of the Alcohol, Smoking, and Substance Involvement Screening Test (ASSIST) and ASSIST-linked brief intervention in a university counseling center. We examined reductions in binge drinking and marijuana use among college students who received the ASSIST and explored differences in outcomes by gender.

METHODS

This study provides a secondary analysis of data collected through the UCLA Access to Care project, a project funded by a three-year Substance Abuse and Mental Health Services Administration (SAMHSA) grant awarded in 2005. UCLA was one of 12 colleges to receive a grant for screening and brief intervention to address drinking and drug use among college students and was the only university to implement the project in a mental health setting.

Participants

By the end of the project, UCLA Access to Care had prescreened 6,772 students with the Alcohol Use Disorders Identification Test-Consumption (AUDIT-C) and conducted the Alcohol, Smoking, and Substance Involvement Test (ASSIST) with 1,534 students. The baseline Government Performance and Results Act Client Outcome Measure (GPRA), a questionnaire administered following the ASSIST, provided data for the evaluation of the brief intervention and was administered to 866 students ages 17 to 45. The mean age was 22 years. Students aged 18 to 24 years were our primary target population, and a majority of the students in this sample (85%, or 733 students) were 18 to 24 years old. The focus of the present study is on students aged 18 to 24 years, and analysis of outcomes at the six-month follow-up interview are limited to those students who (a) received the ASSIST screen *and* brief intervention, and (b) completed the baseline and six-month follow-up GPRA interviews. About 80% (n = 453) of students who received a brief intervention completed the follow-up interview. Our analysis of pre-post differences in reported substance use is based on this subsample of 453 students.

The 453 students who received a brief intervention for heavy drinking and/or illicit drug use and who completed the follow-up interview closely resemble the larger sample of 18- to 24-year-olds. The average age was 20 years. The majority of students were women (59%). Most students were White (66%) or Asian (25%), and 16% reported Latino/Hispanic ethnicity. Only 2% of students were either Black or American Indian.

Procedures

The UCLA Access to Care project targeted at-risk students who could benefit from alcohol and drug screening and brief intervention. To identify students who may be at risk for substance abuse, we used a self-administered prescreen, the Alcohol Use Disorders Test Consumption Questions (AUDIT-C; Bush 1998), which is a three-question screen, and one question that screened for any illicit drug use in the past 30 days (including nonmedical use of prescription drugs). The screening was integrated into the counseling center's routine care, so all students coming in for services were prescreened regardless of whether they presented with a drug- or alcohol-related issue. Between 2006 and 2009, the project screened 6,772 students with the prescreen.

A positive screen was defined as scoring five or more points for men and four or more for women (for AUDIT-C alcohol scores) and/or a "yes" for both men and women on the illicit drug use questions. If a positive prescreen was indicated, the clinician administered the

ASSIST. By the end of the project, the clinicians had administered the ASSIST to 1,534 students.

After conducting the ASSIST screen, clinicians provided personalized feedback in the form of a brief intervention or by providing simple educational information based on the screening results. Each question on the ASSIST has a set of responses to choose from, and each response has a numerical score. At the end of the screen, the clinician tallied the responses and calculated the numerical score that corresponded to the client's response for each question. These scores were added together to produce an overall ASSIST score. Based on the score range, the clinician categorized the client as "Low Risk" (0–10 on alcohol; 0–3 on all other substances) and provided education, "Moderate Risk" (11–26 on alcohol; 4–26 on all other substances) and performed the BI, or "High Risk" (27+ on alcohol and/or all other substances) and performed the BI and provided a referral for substance use disorder treatment. Students were encouraged to share their views on substance use and its impact on their lives. The goal of the screening and brief intervention service was to raise students' awareness about the harms related to substance abuse and to reduce risky drinking and drug use. The whole procedure took between 15 and 20 minutes. Because the ASSIST was integrated as part of routine care and not as a part of the evaluation study, data related to the ASSIST are not available.

Following the educational session or brief intervention, students were asked to participate in the evaluation study, which involved completing the GPRA measure—a more in-depth questionnaire describing specific drug use, mental health issues, health and sexual behaviors, etc. Participants also agreed to participate in a follow-up interview six-months post baseline. All students who received the ASSIST were recruited for the evaluation study. A total of 866 students participated in the evaluation between 2006 and 2009. Students were compensated with gift cards valued at $5 and $20 for the baseline and follow-up interviews. All students provided informed consents and were assured of confidentiality. Baseline interviews were conducted in person and follow-up interviews were conducted by telephone. All procedures were approved by the UCLA Institutional Review Board.

Alcohol, Smoking, and Substance Involvement Test (ASSIST)—The ASSIST was developed by an international team of researchers in 1997 (WHO ASSIST Working Group 2002). The ASSIST consists of eight questions that cover the following substances: tobacco, alcohol, cannabis, cocaine, amphetamine-type stimulants, sedatives, hallucinogens, inhalants, opioids, and other drugs. It takes approximately five to ten minutes to administer and provides information on lifetime substance use, substance use in the past three months, problems related to substance use, risk of current or future harm, substance dependence, and injection drug use (Henry-Edwards et al. 2003). Research has shown the ASSIST to be a valid and reliable test. Substance-specific internal consistency reliabilities ranged from α = 0.73 to α = 0.93 (WHO ASSIST Working Group 2002). The ASSIST has been validated in an international study that included participants from Australia, Brazil, Ireland, India, Israel, the Palestinian Territories, Puerto Rico, the United Kingdom, and Zimbabwe (WHO ASSIST Working Group 2002).

The ASSIST has an accompanying brief intervention that is designed for individuals who score in the moderate- and high-risk ranges. The aim of the ASSIST-linked brief intervention is to help patients understand that their substance use is putting them at risk for health problems and to encourage them to reduce their substance use (Henry-Edwards et al. 2003). The ASSIST-linked brief intervention uses motivational interviewing techniques to provide feedback, emphasize personal responsibility, give advice, provide a menu of options, convey empathy, and promote self-efficacy (Henry-Edwards et al. 2003). The ASSIST-linked brief intervention takes ten to 15 minutes, on average, to complete. While

individuals can score in the moderate-risk range for a number of different substances, clinicians typically focus the intervention on the substance with the highest score or any substance that a person reports injecting.

The Government Performance and Results Act (GPRA) Client Outcome Measure—The Government Performance and Results Act (GPRA) Client Outcome Measure was administered to students directly after receiving the ASSIST and ASSIST-linked brief intervention. It was administered a second time six months post-intervention (CSAT 2005). The GPRA questionnaire collects past 30-day information regarding demographics, drug and alcohol abuse, mental health issues, family and living conditions, education and employment, criminal justice, social support, and services received. It was administered by a trained research assistant and took approximately 20 minutes to complete.

The measure has been used in other federally funded SBI projects including that of Madras and colleagues (2009), who reported a two-thirds (68%) reduction in illicit drug use over a six-month period among people who had received SBIRT services. Data from nearly a half a million patients (N = 459,599) from various medical settings across six states were analyzed and almost one-fourth (23%) either had a drinking or drug problem or were considered high risk for developing them. Of those patients, one-sixth (16%) received a brief intervention. This brief intervention was judged quite successful, as heavy alcohol use was reduced by over a third (39%) at the six-month follow-up. Patients also self-reported other improvements, including fewer arrests, more stable housing situations, improved employment status, fewer emotional problems, and improved overall health over that which was reported at baseline (Madras et al. 2009). In the present study, in addition to demographic variables, dichotomized variables of days of binge drinking and days of marijuana use were extracted from the GPRA.

Analysis

Alcohol and marijuana were the most commonly used substances by students in our sample; therefore, our analysis focuses on outcomes for these two substances. The outcome variables used were: days of binge drinking (four or more drinks) in the past 30 days, days of binge drinking (five or more drinks) in the past 30 days, and days of marijuana use in the past 30 days. The data analysis plan consisted of two statistical tests. We used McNemar's test to examine whether the proportion of students reporting binge drinking and marijuana use at follow-up was significantly less than at baseline. McNemar's test is used to test for the presence of a dichotomous trait, e.g., any binge drinking, among matched pairs of individuals. For the binge-drinking outcome, we included students who reported at least one day of alcohol use in the past 30 days (n = 432). For marijuana, we included all students in the analysis. Paired *t* -tests were then used to compare differences in the mean number of days of binge drinking and marijuana use at baseline and follow-up. Separate tests were performed for women and men to examine outcomes by gender.

RESULTS

The mean age of the study participants was 20.4 years (SD = 1.7). The majority (59%) were female and over one-third (35.3%) of students lived on campus in dorms or student apartments. The mean number of years of education was 13.9 years. Approximately 46% of participants reported full-time or part-time employment (see Table 1).

Among students who reported at least one day of alcohol use at baseline (n = 432), overall, 89.2% reported binge drinking when it was defined as either having four or five drinks in one day at baseline, and 84.1% reported binge drinking at follow-up. For men, 90.6% reported binge drinking at baseline, and 88.6% reported binge drinking at follow-up. For

women, 73.4% reported binge drinking 4 or more drinks at baseline, and 71.4% reported binge drinking at follow-up. Fewer women reported binge drinking five or more drinks; 64.3% reported that amount at baseline and 58.4% reporting that amount at follow-up. In regard to marijuana use, 37.5% of women reported use at baseline and 30.7% used at follow-up, whereas 58.1% of men used at baseline and 51.1% used at follow-up (see Table 2).

Turning to the question of the number of times students used substances, significant reductions in binge drinking were not found for the overall sample when binge drinking was defined as four drinks, $t(451) = 0.77$, $p = .44$, or five drinks, $t(451) = 1.80$, $p = .07$. When examined by gender, significant reductions were not found for women when binge drinking was defined as four drinks; however, significant reductions were found, $t(265) = 2.95$, $p < .05$, when it was defined as five drinks. Significant reductions were not found for men, $t(184) = -.085$, $p = .93$. In terms of marijuana use, significant reductions were not found for the overall sample, $t(451) = 1.10$, $p = .27$, or when examined by gender: $t(265) = .954$, $p = .34$ for women vs. $t(184) = .626$, $p = .52$ for men (see Table 3).

DISCUSSION

The findings from this evaluation provide preliminary evidence of the effectiveness of screening and brief interventions among college students seeking care in a campus counseling center. Significant reductions in the overall number of days of binge drinking and marijuana use were not observed. However women who reported binge drinking five or more drinks did significantly reduce the number of days of their use from baseline to follow-up. Significant reductions in the proportion of students reporting marijuana use were also found for both male and female students.

Our ability to evaluate the outcomes of the ASSIST brief intervention was limited due to a number of factors. First, this study employed a single-group, pre-post design. At best, such a design is able to establish the degree of change in the sample, but it is unable to establish the causes or correlates of that change. A more robust and accurate test of the brief intervention would be a design in which there is a true control group and some type of random assignment into either the treatment or control group. Second, the study relied solely on the GPRA measures, which are limited, to evaluate the brief intervention. For example, GPRA measures frequency of substance use but not quantity of use. Because students in our sample, on average, did not report a high number of days of use at baseline, we were not able to detect much change over time. Measures that may be more sensitive to change as a result of SBI include the typical number of drinks consumed and the number of alcohol-related problems experienced.

The ASSIST measures the frequency of health, social, and/or legal problems due to substance use in the past three months. Because the ASSIST data was collected as part of routine care and not as part of the evaluation study, we were unable to obtain ASSIST scores on all students. Future research should incorporate, to the extent possible, collection of ASSIST data at baseline and follow-up to allow for several measures of change over time. Despite this limitation, we did observe small reductions in the proportion of students reporting binge drinking and a significant reduction in the proportion of students reporting marijuana use at follow-up. In addition, while not significant, small reductions in the amounts of substances consumed were also found.

Because this study did not have access to clinical records, we were unable to collect information on the number of therapy sessions students in our sample received during the six months after the ASSIST brief intervention. It could be that students who received the

ASSIST reduced their use of alcohol and drugs because of their ongoing mental health therapy. Future studies of the ASSIST in mental health settings should account for the number of counseling sessions participants receive as well as other services they may receive that could impact their behavior over time. In addition, future work should incorporate standardized mental health screens such as the Beck Depression Inventory, as they can more accurately capture the presence and severity of depressive symptoms.

Screening and brief intervention models such as the ASSIST were designed to be flexible enough to allow for their use in multiple health settings. Given the challenges of implementing SBI within primary care settings (Heather 2007); Anderson et al. 2004), multiple channels are needed to increase the reach of SBI to populations at risk for alcohol and drug-related problems (Mulia et al. 2011). Mental health patients are at increased risk for substance use disorders because of the co-occurring nature of substance abuse and mental health. As evidenced by the present study, mental health clinicians are well-positioned to intercept individuals at risk for substance abuse. In addition, mental health clinicians are in a position to work with patients on an ongoing basis, reinforcing the messages from the SBI and supporting patients' efforts to reduce their substance use. More research is needed to test the effectiveness of SBI in mental health populations.

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TABLE 1

Sample Characteristics of Students Aged 18–24 yrs (n = 453), UCLA Access to Care Project, 2006–2009

Demographics	**n (%)**
Gender	
Female	267 (59.0%)
Male	186 (41.0%)
Average Age	20.4 years
Living on Campus	160 (35.3%)
Working Part or Full-Time	210 (46.4%)
Race/ Ethnicity	
White	297 (65.6%)
Asian	112 (24.7%)
Hispanic/Latino	74 (16.3%)
Black/African-American	11 (2.4%)
American Indian	8 (1.8%)
Substance Use	
Reported at Least One Day of Binge Drinking	194 (42.8%)
Reported at Least One Day of Marijuana Use	208 (45.9%
Received Brief Intervention and Completed Follow-Up Interview	453 (100%)

Because respondents were allowed multiple responses, Race/Ethnicity is greater than (n = 453).

TABLE 2

Past 30-day Binge Drinking and Marijuana Use by Gender at Baseline and Six-Month Follow-up (n = 453), UCLA Access to Care Project, 2006–2009

Substance	Gender	Baseline % (n)	Follow-up % (n)
Binge Drinking (Four or Five Drinks)	Overall	89.2% (404)	84.1% (381)
Binge Drinking (Four Drinks)	Female	73.4% (185)	71.4% (175)
	Male	90.6% (164)	88.6% (155)
Binge Drinking (Five Drinks)	Female	64.3% (162)	58.4% (143)
	Overall	45.9% (208)	39.1% (177)
Marijuana Use *	Male	58.1% (108)	51.1% (95)
	Female	37.5% (100)	30.7% (82)

Binge drinking proportions calculated using only students who reported at least one day of drinking at baseline, n = 432.

* Differences in proportions at baseline and follow up are statistically significant for marijuana use overall and by gender at $p < .05$ level (McNemar's test).

TABLE 3

Mean Days of Binge Drinking and Marijuana Use in the Past 30 Days from Baseline to 6-month Follow-up for Students (n = 453), UCLA Access to Care Project, 2006–2009

	Baseline	6-month follow-up
Substance	**M (SD)**	**M (SD)**
Days of Binge Drinking Five Drinks	3.23 (3.75)	2.93 (4.13)
Days of Binge Drinking Four Drinks	2.10 (2.97)	1.97 (2.74)
Days of Marijuana Use	4.09 (7.87)	3.84 (7.62)

Reductions in days of substance use are not statistically significant at $p < .05$.