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Brief Intervention for Substance Use among At-Risk Adolescents: A Pilot Study

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Abstract

This pilot study demonstrates that it is feasible to administer brief individualized interventions on alternative high school campuses to students who are at risk of substance abuse. Students actively participated in brief motivational interviews and showed some improvement in five of nine outcomes at three-month follow-ups.

Keywords

Substance use; Adolescents; Motivational interviewing; Brief intervention

Prevention of substance abuse among adolescents may require multiple strategies. Universal prevention programs administered in school classrooms are effective for many students [1], but those adolescents who use a moderate to heavy amount of drugs might benefit from multiple approaches. Heavy and problem drinkers, for example, were less interested in traditional school-based programs [2]. Many of the students who were heavier users of alcohol appeared to have limited motivation to change their behavior. A brief, one-to-one intervention based upon motivational interviewing [3] might provide an additional intervention tool that could be used to address the needs of these at-risk students. Adaptations of motivational interviewing (MI) use a nonconfrontational, empathetic approach that is sensitive to the participant's ambivalence toward change. These types of brief interventions have had some success among adolescents and young adults [4], but to our knowledge, individualized interventions based upon motivational interviewing have not been studied on high school campuses among at-risk students. The aim of the current initial study was to evaluate the feasibility and preliminary effects of this approach, that is, the logistics of providing MI at continuation high school sites, engagement of at-risk students, and initial outcomes regarding potential for change.

Methods

Participants were recruited from three morning classes at two continuation high schools in the greater Los Angeles area. Continuation high schools enroll students who are unable to

attend regular high schools for various reasons including conduct problems and drug use. The prevalence of drug use at these schools is nearly twice that of regular high schools, and therefore, these youth are considered relatively high risk for substance abuse [5]. The University IRB approved the recruiting procedures. Minors under the age of 18 years signed informed letters of assent, and a parent (or guardian) provided written or verbal (via telephone) consent. The study conducted assessments and the intervention at Time 1, with a three-month follow-up assessment. Time 1 and follow-up assessments included the following: demographics, frequency and types of substances used, Rutgers Alcohol Problem Index (RAPI; [6]) adjusted for multiple substances, and special rulers designed to measure readiness to change [7]. The anchors for the 10-point readiness-to-change ruler were “I never think about my alcohol/drug use” and “My alcohol/drug use has changed. I now drink/use drugs less.” Six participants were randomly selected from the complete list of consented students in each class on the day of the interviews to participate in the intervention group, and the remaining students on the list were assigned to the care-as-usual control group. The final sample included 11 participants in the intervention group and seven in the control group. The care-as-usual group attended classes per their normal schedule.

Those assigned to the intervention group met with one of two motivational interviewers sometime during that same day. The intervention included these steps: (a) greet the student and explain confidentiality, (b) establish rapport, (c) agree upon a behavior to discuss (options included use of a specific substance or study habits for graduation), (d) provide normative drug-use feedback when appropriate, (e) discuss pros and cons of current drug use or study habits, (f) affirm student’s capacity to change, and (g) summarize the session and give the student a one-Euro coin. The interviewers were able, with some prior role-playing practice with youth volunteers before going into the field, to follow these steps and conduct each interview in approximately 25 minutes. The study was conducted in cooperation with researchers in the Netherlands, and the students were told that the Euro coin was a token of our appreciation for their assistance in this international project and that it might help them remember the interview. After each interview, the data collector administered an evaluation questionnaire separately to the student and interviewer.

Results

Of the 59 students invited to participate, 26 agreed to participate, six declined to participate, and 27 failed to return the consent forms. Of the 26 who consented, four were not available for assessment at Time 1 and four were not available for assessment at follow-up, leaving 18 participants in the study. Demographic information and the prevalence of drug use at Time 1 are shown in Table 1. The control group appeared to be slightly older, at a higher grade level, and used more club and hard drugs in the past 30 days. Frequency of drug use in the past 30 days was similar to that previously observed among students in this population [1].

All participants assigned to the treatment group were willing to discuss their personal drug use. Five participants chose to discuss marijuana, four chose alcohol, one chose ecstasy, and one chose methamphetamine. The participants assigned to the treatment group provided a positive evaluation of the interview. On a scale of 1 to 4, the mean rating was $3.7 \pm .4$ across six questions (e.g., “I would be willing to talk with the interviewer again”). There was a significant correlation between the participant and the interviewer ratings of the sessions ($r = .88, p < .001$). Estimates by the interviewers for each participant’s readiness to change significantly predicted the difference between Time 1 and follow-up in the participant’s self-reported readiness to change ($r = .83, p < .01$). There was insufficient power in this small sample to analyze the data for interactions between treatment group and time of measurement, but generally, the results in Table 2 suggested some improvement in five of

nine outcomes for the treatment group relative to the control group (club drugs, hard drugs, seven-day drinks, RAPI, and readiness to change).

Discussion

This initial study successfully implemented a one-to-one, brief intervention among at-risk students at continuation high schools, showing that the approach is quite feasible in a field setting. Students were willing to discuss their drug use and were engaged in the interview process. The number of students that did not return consent forms was high, but there was no indication of an adverse opinion of the program. Some incentives probably are necessary to encourage students to return the forms (consenting or declining). Preliminary findings indicated that positive changes occurred among those students interviewed relative to the control group. Of particular interest was the greater readiness to change drug use at follow-up compared with Time 1 among those students who participated in the interview. A readiness to change is thought to be an important mediator in the process of changing drug use [3]. In a similar pilot study among adolescents in clinical settings, motivational interviewing appeared to encourage many of the participants to reduce their substance use and related risk behaviors [8]. The current study has important implications for the design of interventions for students at higher risk of substance use disorders. High school students who are using drugs might be ideal candidates for one-to-one brief interventions as adjuncts to classroom interventions, as phone-based boosters, or as stand-alone interventions.

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Table 1

Demographic information and drug-use prevalence at Time 1

	All (n=18)	Intervention (n=11)	Control (n=7)
Female gender	6 (33%)	4 (36%)	2 (28%)
Mean age ^a	16.1 ± .9	15.8 ± .9	16.4 ± .8
Mean grade ^a	10.7 ± 1.0	10.4 ± 1.1	11.1 ± .7
Living with two parents	7 (44%)	4 (44%)	3 (43%)
Mean parent education ^{a,b}	4.3 ± 1.8	4.5 ± 1.8	3.9 ± 2.0
Mean English language usage ^{a, c}	4.4 ± .6	4.4 ± .6	4.5 ± .5
Self-reported ethnicity			
Latino	9 (56%)	5 (56%)	4 (57%)
Mixed	4 (25%)	3 (33%)	1 (14%)
African American	2 (12%)		2 (28%)
Caucasian	1 (6%)	1 (11%)	
Prevalence of drug use during lifetime ^d			
Alcohol	18 (100%)	11 (100%)	7 (100%)
Marijuana	16 (89%)	10 (91%)	6 (86%)
Cigarettes	13 (81%)	8 (80%)	5 (83%)
Club drugs	6 (33%)	4 (36%)	2 (28%)
Hard drugs ^e	7 (39%)	6 (55%)	1 (14%)
Prevalence of drug use in past 30-days ^d			
Alcohol	13 (72%)	9 (82%)	4 (57%)
Marijuana	12 (67%)	7 (64%)	5 (71%)
Cigarettes	8 (44%)	5 (45%)	3 (43%)
Club drugs	2 (11%)	2 (18%)	
Hard drugs ^e	4 (22%)	4 (36%)	

^aMeans are reported with standard deviations.^bParent education (proxy for SES): 3 = Completed high school (received a diploma); 4 = Some college or job training (1 to 3 years); and 5 = Completed college (4 years).^cEnglish usage (proxy for acculturation): 4 = English more than another language; and 5 = only English.^dPrevalence includes all participants that reported some use of a drug during the period.^eHard drugs included cocaine, hallucinogens, stimulants, tranquilizers, opiates, and inhalants.

Table 2

Frequencies (percent) of change in status from Time 1 to follow-up

Variable	Group	Follow-up compared with Time 1		
		Improved ^a	No change	Worse
Frequency of drug use last month				
Alcohol	Intervention	1 (9%)	8 (73%)	2 (18%)
	Control	1 (14%)	3 (43%)	3 (43%)
Marijuana	Intervention	4 (36%)	5 (45%)	2 (18%)
	Control	2 (29%)	4 (57%)	1 (14%)
Cigarettes	Intervention	1 (9%)	6 (55%)	4 (36%)
	Control	1 (14%)	3 (43%)	3 (43%)
Club drugs	Intervention ^b	2 (18%)	7 (64%)	2 (18%)
	Control	0 (0%)	5 (71%)	2 (29%)
Hard drugs ^d	Intervention ^b	3 (27%)	7 (64%)	1 (9%)
	Control	0 (0%)	5 (71%)	2 (29%)
Binge drinking in the last month	Intervention	3 (28%)	4 (36%)	4 (36%)
	Control	2 (29%)	0 (0%)	5 (71%)
Number of drinks in the last 7 days	Intervention ^b	5 (45%)	1 (9%)	5 (45%)
	Control	0 (0%)	3 (43%)	4 (57%)
Problems due to drug use (RAPI)	Intervention ^b	8 (73%)	0 (0%)	3 (27%)
	Control	4 (57%)	0 (0%)	3 (43%)
Readiness to change drug use	Intervention ^{b,c}	7 (64%)	2 (18%)	2 (18%)
	Control	0 (0%)	2 (29%)	5 (71%)

^aThe numbers of students (% of group) that self-reported a behavior or attitude at follow-up that was “improved” when compared with their self-report at Time 1 (e.g., less drug use, more readiness to change).

^bThe intervention group showed more improvement than the control group (i.e., a larger percentage of the intervention group improved at follow-up than the control group).

^cSignificant improvement between Time 1 and follow-up for the intervention group ($p < .05$).

^dHard drugs included cocaine, hallucinogens, stimulants, tranquilizers, opiates, and inhalants.