

Prevention Efforts Underlying Decreases in Binge Drinking at Institutions of Higher Education

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Abstract. Analyses of 94 Fund for the Improvement of Post-Secondary Education (FIPSE)-sponsored drug-prevention programs and their outcomes used the Core Survey to identify 34 institutions where college students' binge drinking increased ($M = 5.44\%$) and 60 institutions where it decreased ($M = -4.59\%$) during 2 years of program operation. The authors used an inductively derived taxonomy of prevention program elements, student variables, student substance use, use-related variables, and institutional variables to compare the 2 groups of institutions. Only prevention program elements discriminated between groups. Factor analysis of discriminating elements identified 8 prevention factors that improved base-rate prediction of institutional decrease in binge drinking by 28.1%. Factor synthesis yielded a 3-construct binge-drinking prevention model based on student participation and involvement strategies, educational and informational processes, and campus regulatory and physical change efforts. This model improved base-rate prediction of decreased binge drinking by 33.2%.

Key Words: alcohol, binge drinking, college students, prevention programs, program evaluation

A social problem of continuing importance is the prevalence of students' binge drinking at institutions of higher education (IHEs). Recent studies by the Core Institute at Southern Illinois University-Carbondale^{1,2} and by the Harvard School of Public Health³ show that student binge drinking remains a significant problem at colleges and universities nationwide.

Researchers have promulgated two similar definitions of binge drinking during the past decade. The Core Institute's

definition is based on the historical standard of 5 or more drinks in a row within the past 2 weeks.^{4,5} Alternatively, Wechsler and colleagues^{6,7} have defined binge drinking as the consumption of 5 or more drinks in a row for men, or 4 or more drinks for women, at least once during the last 2 weeks. Although both definitions may fail to equate with high-risk consumption for some individuals under some circumstances, they nonetheless remain empirically valid aggregate indicators of high-risk drinking behavior. On average, students who consume alcohol at these levels experience significantly more problematic consequences than those who do not.^{1-3,8-17} Furthermore, frequent binge drinkers typically experience more severe personal and academic problems than those who drink less often.^{2,13,18} Both definitions provide useful standard referents for assessing drinking behavior in comparative and longitudinal studies.^{1,19,20}

The enduring prevalence of college students' binge drinking was most recently verified by the 1999 Harvard School of Public Health College Alcohol Study (CAS), which surveyed more than 14,000 students at 119 nationally representative schools. The Harvard researchers concluded that the national level of binge drinking among students stayed relatively stable between 1993 and 1999, with approximately 2 of 5 students consistently reporting this pattern of heavy alcohol use.³ Despite the well-documented incidence of college student binge drinking and associated problems, few researchers have demonstrated success in addressing these issues. Of the many binge-drinking-related articles published in refereed journals during the last 5 years, only a few describe research-based efforts to prevent binge drinking.²¹⁻²⁶ Most rely on samples obtained from single institutions. Except for recent efforts to test the efficacy of the social norms approach,²⁷⁻³³ we found no multisite studies that systematically assessed comprehensive and diverse prevention approaches and related those

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approaches to longitudinal changes in the incidence of student binge drinking.

Interest in our study of binge-drinking prevention efforts and their outcomes was particularly heightened by the 1999 CAS conclusion that traditional educational approaches have not effectively addressed the binge-drinking problem.³ This conclusion was based on an assessment of changes in binge drinking through 1999; in our study, however, such assessments ended in 1995. Also of interest was the CAS finding that between 1993 and 1999, 53% of the institutions from the CAS sample witnessed longitudinal increases in binge drinking, 47% experienced decreases, and only a small percentage of institutions from these two groups changed significantly.³ Moreover, the exact number of CAS institutions with alcohol- and drug-prevention programs is unknown because the CAS did not obtain those data (personal communication, Henry Wechsler, September 20, 2000). Therefore, if some CAS schools did not have prevention programs in place, the CAS may have underestimated program efficacy. Unfortunately, there are no data with which to compare prevention programs in CAS schools with those in the colleges we studied.

Our study permitted an assessment of the effectiveness of prevention programs by analyzing data collected exclusively from institutions known with certainty to have such programs. Our analyses assessed significant changes in relevant outcomes over time and tested the relative effectiveness of different types of prevention efforts by (a) demonstrating covariation of efforts and outcomes, (b) specifying directionality, and (c) controlling for "third variable" explanations for findings.

Purpose and Question

In our study, we sought to identify the variables underlying decreases in binge drinking by college students. The multisite longitudinal drug-prevention program analyses uncovered statistically significant ($p < .001$) variation in binge-drinking changes in 2 cohorts of institutions ($N = 94$) with Fund for the Improvement of Post-Secondary Education (FIPSE)-sponsored drug-prevention programs. This finding prompted a causal-comparative study designed to answer the following question: "To what extent do prevention programming variables, student variables, substance use, use-related variables, and/or institutional variables explain changes in student binge drinking at IHEs with FIPSE-sponsored drug-prevention programs?"

Study Background and Hypotheses

Two FIPSE grant program initiatives provided access to the data we needed to answer our research question. The first initiative, the institution-wide program, began nationwide in 1987. Over an 8-year period, FIPSE awarded hundreds of grants to colleges and universities nationwide to support various drug-prevention activities directed toward comprehensive institution-wide involvement and change, with particular emphasis on changing the campus social environment. The second FIPSE grant initiative, the analysis projects pro-

gram, began in 1990 and explored data gathered during institution-wide program development and operation. Both FIPSE-sponsored programs hypothesized that when prevention efforts focus on changes in the social environment and associated activities, (a) prevention works and (b) some approaches to prevention work better than do others.³⁴

METHOD

Our current study represents a synthesis of 2 separate, but concomitant, secondary analyses: (a) our content analysis of prevention activities reported by 146 institutions from 2 cohorts of FIPSE-sponsored institution-wide prevention programs in higher education, and (b) the Core Institute's collection of pre- and posttest binge-drinking data from 130 institutions from the same population. We merged these 2 independently generated data sets to develop the sample described subsequently.

Sample

Our sample of 94 colleges and universities came from a population of 191 IHEs that received FIPSE institution-wide grants for 1992–1994 and 1993–1995. It included a cross-section of colleges and universities from 38 states with the following characteristics: (a) 67% of the institutions were public, and 33% were private; (b) 31% were 2-year institutions, and 69% were 4-year; and (c) 74% were residential, and 26% were commuter. Student enrollments at the institutions ranged from 400 to 44,000 ($M = 9,054$). All sample institutions had also submitted their Institution-Wide program final reports to FIPSE within 18 months of completing their grant programs.

Of the 191-institution population, we reached 186 institutions (97.38%) as part of our program follow-up. Ten (5.24%) institutions discontinued their prevention programs during the grant period, leaving 176 (92.15%) potentially available for our analysis. However, only 146 (76.44%) of the 191 institutions submitted final reports to the US Department of Education. As part of our analysis grant project, we content-analyzed prevention activity data from 146 schools.

Next, 141 (73.82%) institutions from the population granted us permission to obtain their Core Survey data. However, complete Core Survey data on binge-drinking change (both pre- and posttest binge-drinking rates) were available for only 130 (68.06%) of the 191 institutions.

When we merged these 2 data sets, we found that we had 104 institutions (listwise) for which both content analysis study data and pre-post binge-drinking data from the Core Institute were available. Of these 104 institutions, 34 showed increases in binge drinking, 60 showed decreases, and 10 showed no literal changes in binge drinking (any change greater than 0 meant an increase in binge drinking, and any change less than 0 meant a decrease in binge drinking).

Because only 9.62% of the 104 institutions in our listwise sample (5.23% of the population) experienced no changes in binge drinking, we reasoned that this group's influence on study outcomes would be relatively small and less reliable than the influence of the much larger binge increase and

decrease groups that together accounted for 90.38% of the 104 institutions with complete data. Therefore, we excluded the no-change institutions from our main analysis. We did not disregard the no-change institutions, however; they simply were not a primary focus of our study.

It is important to note that had we used pairwise rather than listwise analyses, we could have reported larger (but varied) sample sizes for individual data sets in our study, but interpretational problems would have resulted when we combined such data sets for analysis. Despite these sampling issues, which were largely beyond our control, we acquired usable binge change data from 130 institutions (68% of the population)—a percentage that nets relatively high external validity when compared with many other types of studies (eg, descriptive surveys, correlational analyses, randomized experiments, and quasi-experiments) found in the literature.

Explanatory and Outcome Variables

Our explanatory variables included (a) 86 inductively derived prevention elements developed as part of our analysis project, (b) student variables from the Core Survey (Core), (c) student substance use and use-related variables from the Core, and (d) institutional data from our follow-up interviews and from final reports submitted to FIPSE. We generated and refined the prevention elements, which are listed in the Appendix, through ongoing inductive content analyses of alcohol and drug-prevention activities from 5 cohorts of institution-wide programs.³⁵ These elements encompassed all prevention activities discussed by program personnel in the final reports.

We examined numerous pretest variables from the Core as potentially competing determinants (third variables) of outcome. They included percentages of freshman, sophomore, junior, senior, graduate, other, female, male, and off-campus students; full-time students; students working full- or part-time; and students spending at least 5 hours per month in volunteer work. Substance use and use-related pretest variables from the Core included percentages of students reporting each of the following: alcohol use (30-day prevalence), binge drinking (within past 2 weeks), marijuana use (30-day prevalence), other illegal drug use (30-day prevalence), public misconduct, personal problems, alcohol or other drug (AOD) policy awareness, AOD program awareness, perception of campus concern for prevention, perception of others' use of alcohol ($\geq 1/\text{wk}$), perception of others' illegal drug use ($\geq 1/\text{wk}$), student preference for no alcohol at parties, and student preference for no illegal drug use at parties.

The other third variables we examined came from institutional data reported in the institution-wide program final reports. In addition to student enrollment, they included percentages of institutions that were (a) public, (b) private, (c) 2-year, (d) 4-year, (e) residential, and (f) commuter. The program outcome variable was pre- to posttest change in percentage of students from each institution reporting binge drinking as defined by the Core Institute.

Procedure

Securing Program Activity and Institutional Data

We obtained copies of institution-wide program final reports for the sample from FIPSE in autumn 1995 and autumn 1996. Typically, the final reports included (a) institutional information such as student enrollment and institution type (2-year or 4-year; residential or commuter; public or private), (b) narratives describing all activities implemented by programs during the grant period, and (c) summary tables of activities. Our project interviewer also generated corroborating data on program activities and emphases from structured telephone follow-up interviews with project directors (PDs) or project coordinators (PCs) that were conducted between 12 and 18 months after expiration of grant sponsorship. Follow-up interviews produced information about pre- and postgrant program emphases; postgrant program continuation, scope, and institutionalization; and program effectiveness in reducing students' AOD use and abuse. Program personnel were further asked to provide specific evidence to support their program-effectiveness ratings. We also analyzed responses to these questions in relation to the program activity data discussed below.

Content Analysis of Program Activities

The principal investigator trained 3 content analysts in developing and implementing an inductively derived taxonomy of prevention themes and elements. We used the taxonomy to categorize all program activities described in the institution-wide program final reports. First, analysts practiced using the taxonomy with sample program activity data until they achieved 90% agreement in their independent descriptions of programs. Next, they used a standard format to review the project narratives and activity summary tables for all institutions and record each prevention activity. The standard format included activity descriptions, participants, purposes, and outcomes. Last, the analysts independently categorized all program activities using the taxonomy.

Because most prevention activities were multifaceted, analysts often used several themes and elements to describe individual activities. This procedure generated 206,314 pooled content-analyst categorizations for the collection of prevention activities reported by the sample. These categorizations, in turn, yielded prevention theme and element frequencies that we used to profile each institution's relative (intra-institutional) emphasis on various prevention approaches and activities. To date, our content-analyst interrater reliability in profiling institutions using prevention themes has ranged from $r = .95$ to $r = .97$, or more than 90% agreement.

Securing Core Data

We asked program personnel (PD or PC) from each 1992–1994 and 1993–1995 cohort institution to provide executive summaries of the Core pre- and posttest data they gathered during the grant program operation. Each participating institution returned signed permission forms that we

forwarded to the Core Institute, which then supplied the data requested.

Because we wished to evaluate aggregate changes in binge drinking at institutions as a function of different types of explanatory variables, we used only aggregate data from each institution. (Our pre- and posttest binge-drinking data from the 94 institutions were based on 91,233 Core surveys completed by students.) In addition to securing informed consent from each participating institution, our project was reviewed by our university institutional review board, was approved under expedited procedures, and was declared exempt from further review because it posed no risk to participants.

Data Analysis

We created an SPSS for the PC (Version 8.0) database to accommodate our explanatory and outcome variable data. Each record represented one institution and included fields for the following information: (a) Core pre- and posttest percentages for student, student substance use, and use-related variables; (b) student enrollment and other institutional characteristics coded as dummy variables; and (c) prevention activity content analysis data.

Binge-Drinking Analyses

We subtracted binge-drinking pretest percentages for institutions from their posttest percentages to generate binge-drinking difference scores. Institutions with positive difference scores (binge increase) were dummy coded 1, and institutions with negative difference scores (binge decrease) were coded 0. Collapsing the dependent variable into 2 categories was justified primarily by the purposes of our analysis—namely, (a) to classify individual institutions in terms of binge increase or binge decrease and (b) to examine systematically and compare the quantitative and qualitative prevention programming characteristics of these 2 groups of institutions. As a procedural check on the adequacy of our binary dependent variable, we used a *t* test for independent means to compare binge-drinking change scores of the 2 groups. Also, we used chi-square analyses to compare the frequencies of institutional binge increase and decrease during the grant period and to compare binge increase and decrease frequencies in our sample with similar data from the 1999 CAS. We applied a 1-sample *t* test that compared the average posttest binge-drinking percentage for the 130 institutions with available binge change data with the binge-drinking average reported in the 1999 CAS.

Analysis of Explanatory Variables in Relation to Binge-Drinking Change

Analysis of prevention elements against binge-drinking change involved identifying elements that discriminated between institutions with increased binge-drinking and those with decreased binge drinking and particularly described prevention activities at those sites where binge drinking decreased.

Because our study was exploratory, we set minimizing

Type II error as a paramount goal of our element-identification process. Therefore, we compared prevention-element means for the two groups with multiple 1-tailed *t* tests for independent means at an alpha level of $p < .10$. We chose such univariate analyses because they diminished our probability of committing Type II error and also provided a replicable method for identifying discriminating elements. Although the above procedure increased the likelihood of Type I error, it was justified because we planned to replicate our study using another cohort of Institution-Wide programs.

To test significance of differences between our 2 groups as a function of student, substance use, use-related, and institutional variables, we used either 2-tailed *t* tests for independent means or chi-square analyses dependent on measurement levels of the explanatory variables. We preferred 2-tailed tests in these analyses because of our interest in identifying any significant nonprogramming variables (third variables) that could explain variance in binge-drinking change.

Analyses Supporting a Model for Binge-Drinking Prevention

We factor-analyzed prevention elements most associated with decreases in binge drinking. Our initial analysis identified 1 element with low communality, so we excluded it from our final factor analysis. In both factor analyses, we used the principal components method with varimax rotation. After factor extraction and rotation, we generated factor scores for each institution. Next, we used multiple logistic regression to test utility of the factor scores as predictors of binge-drinking decrease. (Because the reference group in our multiple logistic regression was the binge-drinking decrease group, these institutions were recoded as 1, and binge-drinking increase institutions were recoded as 0, before the analysis.)

Further study of our factors and their loadings prompted us to create 3 composite variables (constructs) from various factor combinations. To examine construct validity of the 3 composite variables, we calculated Pearson product-moment correlations between all prevention elements in the taxonomy and each of the three composite variables. We then used these variables in a second multiple logistic regression analysis to predict binge-drinking decrease in our original sample. As a further test of our model's utility, we also calculated Nagelkerke R^2 , which showed the percentage of variance in binge-drinking change accounted for by our 3 prevention constructs.

Analysis of No-Change Institutions

Although the primary focus of our study was on identification of variables underlying decreases in binge drinking, we also examined binge pretest levels for the small number of no-change institutions for which data were available. We compared this group's binge-drinking pretest averages with those for the binge-drinking increase and decrease institutions and compared its prevention activities with those implemented by the other 2 groups.

RESULTS

Binge-Drinking Analyses

Significance of Changes in Binge Drinking

Of the 94 institutions in our sample that experienced Core Survey changes in binge drinking during 2 years of program operation, 34 increased and 60 decreased. Our procedural check comparing the average binge-drinking change percentages of these 2 groups produced a difference ($M = 10.03\%$) that was statistically significant, $t(92) = 9.194$, $p < .001$. The average increase was 5.44% ($SD = 4.41$), and the average decrease was -4.59% ($SD = 5.42$).

Chi-square analyses comparing binge increase and decrease frequencies in our sample institutions also revealed that significantly more institutions reported decreases than reported increases in binge drinking during the grant period, $\chi^2(1, N = 94) = 7.191$, $p = .007$, $C = .28$. Furthermore, when we compared rates of binge-drinking increase and decrease for FIPSE-sponsored institutions with similar data generated from the most recent CAS, the results again were statistically significant, $\chi^2(1, N = 213) = 5.30$, $p = .02$, $C = .16$. Proportionately more FIPSE-sponsored institutions showed decreases in binge drinking than institutions from the CAS sample. Also, a 1-sample t test comparing the average posttest binge-drinking percentage for all 130 binge-drinking-change institutions ($M = 37.26$, $SD = 12.61$), with the binge-drinking average reported in the 1999 CAS ($M = 44.1\%$), found that FIPSE-sponsored institutions had significantly lower binge-drinking rates, $t(129) = -6.186$, $p < .001$, than had institutions from the 1999 CAS. Results reported below clarify which explanatory variables best account for these significant findings.

Analysis of Explanatory Variables Against Binge-Drinking Change

Prevention Elements

Table 1 shows results of 25 1-tailed t tests for independent means that used prevention elements to compare binge-drinking increase and decrease institutions. Of the 86 elements tested, these 25 elements discriminated between groups ($p < .10$), with higher prevention element means found for institutions that decreased in binge drinking. As supported by effect sizes (d) reported in this table, aggregate binge drinking decreased most where prevention efforts particularly emphasized activities reflecting these 25 prevention elements. Also, uncovering 25 of 86 elements (29%) that were significantly tied to binge-drinking decrease exceeds the number that one could expect by chance. Higher prevention element means were associated with binge-drinking increase ($p < .10$) for only 4 of the 86 elements (4.7%).

Student, Substance Use, and Use-Related Variables

Table 2 compares the binge-drinking increase and decrease institutions using student, substance use, and use-

related variables from the Core pretest. Of particular importance is the finding that the 2 groups had similar binge-drinking averages on the Core pretest. Also, because these comparisons uncovered only 1 significant between-groups difference (percentage of juniors at the institutions, $p < .10$), student pretest variables almost entirely failed to explain the significant institutional variation in binge-drinking change over time.

Institutional Variables

When we used institutional variables to compare binge-drinking increase and decrease institutions, we found no statistically significant differences. Changes in binge drinking as a function of public or private institutional status yielded a $\chi^2(1, N = 94) = .009$, $p = .923$, $C = .01$; binge-drinking change as a function of 2-year or 4-year institutions obtained a $\chi^2(1, N = 93) = .422$, $p = .516$, $C = .07$; and binge change as a function of residential or commuter institution status produced a $\chi^2(1, N = 94) = 1.303$, $p = .254$, $C = .10$. Last, student enrollments at the binge-drinking-increase ($M = 8,679$) and binge-drinking-decrease ($M = 9,266$) institutions were similarly comparable, $t(92) = .283$, $p = .778$. Available institutional data also failed to account for the significant between-groups difference in binge-drinking change over time.

Analyses Supporting a Model for Binge-Drinking Prevention

Factor Analysis of Prevention Elements Associated With Decreased Binge Drinking

Table 3 shows results of our final factor analysis using 24 prevention elements most significantly associated with binge-drinking decrease. In this analysis, the 8 factors extracted and orthogonally rotated accounted for 78.77% of the variance in prevention approaches associated with decreased binge drinking. We labeled the factors, ordered by amount of variance explained, as follows:

1. Student Participation and Involvement in Prevention Activities;
2. Changing Campus Social/Cultural Environment Using Informational and Educational Processes;
3. Student Participation and Involvement in Program Development and Operation;
4. Curriculum Infusion;
5. Student Participation and Involvement in Volunteerism;
6. Policy Enforcement;
7. Changing Campus Physical/Regulatory Environment; and
8. Summative Evaluation.

On average, institutions that emphasized prevention approaches associated with those 8 factors decreased most in binge drinking during the grant period—an observation that is supported by the findings reported below.

TABLE 1
Prevention Element Differences Between Institutions With
Increases and Those With Decreases in Binge Drinking

Prevention element	Increase in binge drinking (<i>n</i> = 34)		Decrease in binge drinking (<i>n</i> = 60)		<i>t</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
10. Steering/advisory board meetings	11.91	15.33	19.80	23.84	1.95***	.37
13. Conducting summative program evaluation	0.97	1.96	2.90	7.64	1.85**	.31
18. Dissemination of AOD policy	6.85	8.47	15.93	30.58	2.16**	.36
19. Enforcement of AOD policy	5.38	13.64	9.58	15.03	1.35*	.29
20. Advocacy of AOD policy or need for change	0.41	0.82	2.45	11.20	1.40*	.23
25. Promotional items (eg, t-shirts, hats, key rings)	7.38	8.34	11.02	14.28	1.56*	.29
26. AOD bulletin boards, literature racks, or displays	4.88	5.77	9.08	9.65	2.64***	.24
27. Live presentation, lecture, or speech	166.38	130.38	208.15	143.63	1.40*	.30
30. Plays, skits, dramatizations, or role plays	5.50	14.40	11.38	20.42	1.48*	.32
31. Demonstrations or graphic displays	8.53	8.32	14.51	13.23	2.53***	.48
35. Parties, dances, socials, and coffee houses	26.03	26.98	45.30	76.86	1.76**	.30
40. Volunteerism as alternative activity	2.06	2.39	7.90	17.65	2.52***	.41
41. AOD instruction in faculty-taught academic courses	8.71	16.88	16.83	29.64	1.69**	.31
43. Mandatory AOD class as part of intervention effort	4.38	8.87	10.62	19.60	2.18**	.39
46. AOD resource centers, collections, libraries	1.68	1.68	2.28	1.95	1.52*	.32
47. Collaboration within a group of students/staff	57.59	50.37	79.73	74.60	1.54*	.33
53. Curriculum infusion training for staff/faculty	1.26	3.79	4.17	9.08	2.16**	.38
57. Student participation in AOD dramas or skits	1.35	3.11	3.90	7.88	2.22**	.39
59. Student participation on AOD committees or task forces	13.91	21.51	22.62	32.73	1.39*	.30
61. Volunteerism as service activity	1.47	2.15	4.52	8.75	2.56***	.43
68. Changing campus physical environment	5.32	6.58	10.88	28.95	1.42*	.24
69. Changing campus social/cultural environment	285.53	216.33	365.40	241.18	1.60*	.30
70. Changing campus regulatory environment	8.32	8.15	14.18	15.11	2.44***	.45
83. Educating/informing about health and wellness	206.79	135.15	272.82	177.0	1.88**	.40
86. Discouraging/deglamorizing AOD use/abuse	18.24	19.41	25.45	29.34	1.28*	.27

Note. Prevention element results are reported as frequencies. Unequal variances were assumed for *t* tests shown in boldface. *t* tests are 1-tailed. Effect sizes (*ds*) were calculated using the following formula: mean binge-drinking decrease minus mean binge-drinking increase divided by the square root of the pooled variance.

p* < .10; *p* < .05; ****p* < .01.

Multiple Logistic Regression 1: Using Prevention Factors to Predict Binge-Drinking Change

We used a multiple logistic regression analysis, with the above 8 factors as predictors of binge-drinking change, to test our first binge-drinking-prevention model. The overall model was significant, $\chi^2(8, N = 94) = 16.307, p = .038$, and correctly classified 81.7% of our sample institutions where binge drinking decreased. Results (logistic regression coefficients and odds ratios) for each factor were as follows (significance of odds ratios for both multiple logistic regressions conducted in this study was based on 1-tailed tests): (a) Student Participation and Involvement in Prevention Activities ($B = .398, OR [odds ratio] = 1.489$); (b) Changing Campus Social/Cultural Environment Using Informational and Educational Processes ($B = .267, OR = 1.305$); (c) Student Participation and Involvement in Program

Development and Operation ($B = .251, OR = 1.286$); (d) Curriculum Infusion ($B = .676, OR = 1.966, p < .05$); (e) Student Participation and Involvement in Volunteerism ($B = .722, OR = 2.059, p < .10$); (f) Policy Enforcement ($B = .428, OR = 1.534, p < .10$); (g) Changing Campus Physical/Regulatory Environment ($B = .307, OR = 1.359$); and (h) Summative Evaluation ($B = .047, OR = 1.049$).

Compared with the base rate of 63.8% correct classification possible without using a model, the 8 factors improved prediction accuracy by 17.9%, a 28.1% increase over the base rate. Although all factors in this model contributed to binge-drinking decrease, the decrease was greatest where (a) students participated in volunteer service activities, (b) curriculum infusion was emphasized, (c) the institution engaged in consistent enforcement of AOD policy, and (d) the institution encouraged student participation and involvement in prevention activities.

TABLE 2
Core Survey Variable Pretest Differences Between Institutions With
Increases and Those With Decreases in Binge Drinking

Core survey variable	Increase in binge drinking (n = 34)		Decrease in binge drinking (n = 60)		t
	M	SD	M	SD	
<i>Student variable</i>					
1. Freshman	34.32	15.37	32.88	16.63	0.41
2. Sophomore	26.03	10.51	23.48	8.21	1.30
3. Junior	14.65	8.57	18.48	10.59	-1.79*
4. Senior	15.95	10.82	17.77	11.56	-0.75
5. Graduate	5.00	8.25	3.51	6.65	0.95
6. Other	3.68	5.24	3.80	9.81	-0.07
7. Typical college age (18–22)	68.82	19.70	72.71	17.36	-0.99
8. Female	60.99	17.54	57.25	11.82	1.23
9. Male	39.01	17.54	42.75	11.82	-1.23
10. Off-campus residence	57.92	32.73	60.02	28.21	-0.33
11. Work full or part time	59.18	13.51	58.93	15.04	0.08
12. Full-time students	86.03	13.49	89.43	10.82	-1.34
13. Spending at least 5 h/mo in volunteer work	13.30	4.62	14.00	4.56	-0.69
<i>Student substance use or use-related variable</i>					
14. Alcohol consumption in the past 30 days	69.03	8.76	68.22	10.31	0.19
15. Binge-drinking in the previous 2 weeks	38.06	14.21	39.75	11.02	-0.60
16. Marijuana use in the past 30 days	16.46	9.26	16.31	9.33	0.07
17. Other illegal drug use in the past 30 days	6.46	4.42	6.17	3.17	0.36
18. Reporting some form of public misconduct	34.50	11.53	34.99	11.53	-0.22
19. Reporting some kind of serious problem	25.38	8.06	25.15	7.04	0.14
20. Reporting campus has an alcohol and drug prevention program	38.64	17.47	37.35	13.13	0.02
21. Reporting campus has alcohol and drug policies	77.00	16.91	77.07	16.04	-0.40
22. Reporting belief that the campus is concerned about the prevention of drug and alcohol use	65.06	8.34	65.37	10.73	-0.14
23. Reporting belief that average student on their campus uses alcohol ≥ 1/wk	90.06	6.11	89.53	7.26	0.35
24. Reporting belief that average student on their campus uses some form of illegal drug ≥ 1/wk	49.67	17.41	49.25	15.92	0.12
25. Preferring not to have alcohol available at parties they attend	34.18	10.39	32.58	11.17	0.68
26. Preferring not to have drugs available at parties they attend	83.97	9.08	82.52	13.74	0.55

Note. Core Survey results are reported as percentages. Unequal variances were assumed for t tests shown in boldface.

*p < .10.

TABLE 3
Summary of Prevention Elements and Factor Loadings for
Varimax Orthogonal 8-Factor Solution for Decrease in Binge Drinking

Prevention element	Factor loading								Communality
	1	2	3	4	5	6	7	8	
30. Plays, skits, dramatizations, or role plays	.874								.797
57. Student participation in AOD dramas or skits	.851								.776
24. Promotional items (t-shirts, hats, key rings, etc)	.742								.653
86. Discouraging/deglamorizing AOD use/abuse	.652	.380	.430						.814
31. Demonstrations or graphic displays	.573	.325		.446					.754
27. Live presentation, lecture, or speech		.868							.894
83. Educating/informing about health and wellness		.812							.879
69. Changing campus social/cultural environment		.737	.351						.899
18. Dissemination of AOD policy		.683						-.474	.832
59. Student participation on AOD committees or task forces			.932						.922
10. Steering/advisory board meetings			.887						.882
47. Collaboration within a group of students/staff	.496		.564						.693
41. AOD instruction in faculty-taught academic courses				.812					.667
53. Curriculum infusion training for staff/faculty				.782					.656
26. AOD bulletin boards, literature racks, or displays	.374			.602				.315	.683
40. Volunteerism as alternative activity					.938				.895
61. Volunteerism as service activity					.936				.935
43. Mandatory AOD class as part of intervention effort						.879			.851
19. Enforcement of AOD policy						.863			.856
46. AOD resource centers, collections, or libraries				.371		.395			.520
68. Changing campus physical environment							.836		.767
35. Parties, dances, socials, and coffee houses			.526				.688		.843
70. Changing campus regulatory environment		.386					.674	-.310	.849
13. Conducting summative evaluation								.701	.587
Eigenvalue	3.51	3.20	2.82	2.10	2.08	2.06	1.85	1.27	
% of variance	14.63	13.37	11.77	8.74	8.67	8.61	7.72	5.28	

Note. $N = 94$ institutions. Factor 1 = Student Participation and Involvement in Prevention Activities; Factor 2 = Changing Campus Social/Cultural Environment Using Informational and Educational Processes; Factor 3 = Student Participation and Involvement in Prevention Program Development and Operation; Factor 4 = Curriculum Infusion; Factor 5 = Student Participation and Involvement in Volunteerism; Factor 6 = Policy Enforcement; Factor 7 = Changing Campus Physical and Regulatory Environments; Factor 8 = Conducting Summative Program Evaluation. Prevention Element 20, Advocacy of AOD policy or need for change, was excluded from this factor analysis because of its low communality in our first factor analysis of prevention elements. Only factor loadings $> .30$ are shown.

Development and Validation of 3 Prevention Constructs

Further study of the above factors and their loadings (Table 3) prompted us to create 3 composite variables (constructs) from 7 of the 8 factors. We combined factors 1, 3, and 5 (Student Participation and Involvement in Prevention

Activities, Student Participation and Involvement in Program Development and Operation, and Student Participation and Involvement in Volunteerism) to form a Student Participation and Involvement construct. Factors 2 and 4 (Changing Social/Cultural Environment and Curriculum Infusion) were combined to form an Educational and Informational Processes construct. Finally, we combined factors 6 and 7 (Policy

TABLE 4
Prevention Element Correlates of 3 Prevention Constructs

Prevention element	Prevention construct		
	1	2	3
61. Student participation in volunteer service activities	.733***	.010	.089
10. Steering/advisory board meetings	.684***	.211	.115
40. Student participation in volunteerism as alternative	.667***	-.015	.100
59. Student participation on AOD committees, task forces	.644***	.094	.173
47. Collaboration within group of students	.629***	.265*	.058
86. Discouraging or deglamorizing AOD use/abuse	.600***	.402***	.086
82. Empowering critical mass committed to prevention	.597***	.368***	.152
57. Student participation in AOD dramas, skits, etc	.503***	.164	-.030
60. Student collaboration in AOD projects or events	.501***	.172	.400***
48. Collaboration between groups of students/staff	.494***	.128	.307**
75. Collaboration with local agencies/professional groups	.492***	.123	.136
50. Collaboration with off-campus agencies	.483***	.185	-.077
30. Plays, skits, dramatizations, or role plays	.481***	.239	-.057
6. Planning, coordinating, and supervising staff	.458***	.011	.126
17. Review, change, or clarification of policy	.455***	.010	.157
12. Conducting AOD needs assessment	.438***	-.010	.245
25. Promotional items (t-shirts, hats, key rings, etc)	.423***	.289**	.024
73. AOD presentations for civic groups or clubs	.414***	-.057	-.041
56. Peer educator/counselor/assistant programs	.250	.278*	.018
41. AOD instruction in faculty-taught academic courses	-.025	.749***	-.005
25. AOD bulletin boards, literature racks, or displays	.224	.704***	-.026
31. Demonstrations or graphic displays	.302**	.696***	.023
53. Curriculum infusion training for staff/faculty	.023	.635***	.075
24. Handbooks, pamphlets, or brochures	.184	.525***	.339***
83. Educating/informing about health and wellness	.157	.521***	.345***
49. Collaboration between offices on campus	.098	.448***	.314**
27. Live presentation, lecture, or speech	.111	.423***	.391***
32. Written communications	.333***	.416***	.155
23. Posters, flyers, signs, and banners	.262*	.320**	-.128
52. Awareness and procedural training for staff/faculty	.037	.315**	.154
39. Participatory nonathletic competitions	.132	.314**	-.025
46. AOD resource centers, collections, and libraries	.034	.279*	.005
74. Participation on local AOD task force/committee	.152	.274*	-.029
70. Changing campus regulatory environment	.268*	.121	.877***
68. Changing campus physical environment	-.061	.029	.641***
35. Parties, dances, socials, and coffee houses	.371***	-.031	.552***
84. Establishing healthy alternative programs/facilities	.412***	.028	.525***
18. Dissemination of AOD policy	.077	.269*	.525***
55. AOD training for RAs, servers, hosts	.082	-.004	.517***
19. AOD policy enforcement	.147	.168	.446***
69. Changing campus social/cultural environment	.314**	.412***	.417***
43. Mandatory AOD classes as part of intervention effort	.130	.166	.404***
44. AOD speaker/program in class or orientation	-.013	.307**	.375***
80. Mandatory AOD classes for policy violators	.082	.161	.334***
33. Seminars, workshops, and retreats	-.026	.273*	.322**
77. Student assistance programs	-.120	.008	.280*

Note. N = 94 institutions. Construct 1 = Student Participation and Involvement; Construct 2 = Educational and Informational Processes; Construct 3 = Campus Regulatory and Physical Change Efforts. Only elements shown in boldface type were included in the factor analysis reported in Table 3. *p < .01; **p < .005; ***p < .001.

Enforcement and Changing Campus Physical/Regulatory Environment) to form a third construct reflecting Campus Regulatory and Physical Change Efforts. We excluded factor 8, Summative Evaluation, from the 3-construct model because it contributed negligibly to prediction of binge change in our first multiple logistic regression analysis.

The validity of the 3-construct model was supported by numerous statistically significant Pearson product-moment correlations between the 3 constructs and individual prevention elements (see Table 4). In addition to the 24 prevention elements from our factor analysis (see Table 3), we included 23 more prevention elements from our taxonomy in these analyses.

Collectively, the element-construct correlations in Table 4 provide both convergent and discriminant validity evidence for the 3 constructs. For example, the Student Participation and Involvement construct correlated most with prevention elements such as (a) student participation in volunteer service, (b) collaboration within a group of students, (c) student participation on AOD committees and task forces, and (d) student participation in AOD dramas and skits. However, correlations between the above elements and the other 2 constructs (Educational and Informational Processes; Campus Regulatory and Physical Change Efforts) were predominantly nonsignificant. The Educational and Informational Processes construct correlated most with (a) AOD instruction in faculty-taught academic courses; (b) frequency of providing AOD bulletin boards, literature racks, or displays; and (c) educating/informing students about health and wellness. These same elements were essentially unrelated to the Student Participation and Involvement and to the Campus Regulatory and Physical Change Efforts constructs. Elements such as changing campus regulatory environment, enforcing policy, using a mandatory AOD class as part of intervention efforts, and disseminating AOD policy correlated significantly with Campus Regulatory and Physical Change efforts, but were less significantly related to Education and Student Involvement. In short, results in Table 4 operationally define our three prevention constructs.

Multiple Logistic Regression 2: Using Three Prevention Constructs to Predict Binge-Drinking Change

We used a second multiple logistic regression analysis to test our 3-construct binge-drinking prevention model. The overall model was significant, $\chi^2(3, N = 94) = 14.57$, $p = .002$, and correctly classified 85% of institutions where binge drinking decreased. Logistic regression coefficients and odds ratios for each construct were as follows: Student Participation and Involvement ($B = .417$, $OR = 1.517$, $p < .05$); Educational and Informational Processes ($B = .462$, $OR = 1.587$, $p < .05$); and Campus Regulatory and Physical Change Efforts ($B = .334$, $OR = 1.397$, $p < .10$). Compared with the correct classification base rate of 63.8% possible without use of a model, our 3 constructs improved prediction accuracy by 21.2%, or a 33.2% increase beyond the base

rate. Finally, we calculated Nagelkerke R^2 as another test of the model's utility. The results showed that 20% the variance in binge-drinking change was explained by our three prevention constructs.

In summary, the preceding analyses revealed that the 3 constructs together explained significant variance in binge-drinking changes and that the Student Participation and Involvement and the Educational and Informational Processes constructs were the most statistically significant ($p < .05$) independent predictors of this outcome.

Contributions of the No-Change Institutions to Study Outcomes

As mentioned earlier, 10 institutions in the group of 104 for which we had complete data reported no changes in binge drinking. Because our study's focus was on identifying prevention efforts underlying binge-drinking decrease and because the no-change group's size was so small, we excluded this group from our main analysis. However, we subsequently compared this group's binge pretest results with results obtained for the 2 groups in our main analysis, and we examined prevention activities reported by institutions from this group. First, the 10 no-change institutions had the lowest pretest binge-drinking rate ($M = 32.00\%$, $SD = 6.98$) among the three groups (for comparisons, see Variable 15, Table 2). Second, their prevention activities were most like those reported by the binge decrease group.

COMMENT

Prevention Program Efficacy: A Different Conclusion

The 1999 CAS prompted its authors to conclude that traditional educational approaches have not effectively addressed the binge-drinking problem in higher education.³ Apparently, binge-drinking rates at many colleges had remained unacceptably high despite practitioner efforts. However, the CAS was based on a nationally representative sample of institutions, rather than on a group of institutions known to be conducting prevention programs. Because the CAS did not collect data about prevention programming, we do not know whether any of the CAS schools had prevention efforts in place. If some CAS schools did not have prevention efforts in place, the CAS analyses could have underestimated program efficacy. Our study of prevention program efficacy relied only on institutions with formal programs.

Notable outcome differences between the CAS and our analyses led to a different conclusion about program efficacy. First, we found significant variation in binge-drinking change among institutions ($p < .001$), whereas CAS authors reported that only 13% of institutions from their sample changed significantly. Second, although 47% of the CAS sample decreased in binge drinking over time, 64% of our sample witnessed binge-drinking decreases. And third, the posttest binge-drinking average of 37.26% for the students at our 130 FIPSE institutions was significantly lower ($p < .001$) than the 44.1% average reported in the 1999 CAS. In

short, FIPSE-sponsored institutions varied more in binge-drinking change, experienced more frequent decreases in binge drinking, and had a lower binge-drinking average than had the institutions from the 1999 CAS. Those findings offer a more encouraging assessment of prevention-program efficacy than does the CAS.

Which Variables Best Account for Changes in Binge Drinking?

FIPSE hypothesized that when prevention efforts emphasize changes in the social environment and related activities, (a) prevention works and (b) some approaches to prevention work better than do others. Our study supports this 2-part hypothesis.

- First, 29% of the prevention elements from our taxonomy were significantly associated with binge decrease; yet only 4.7% of the elements were associated with increased binge drinking. This result suggests that many FIPSE-sponsored institutions relied more on prevention approaches that tend to be more effective rather than on less effective activities and that certain combinations of approaches and activities were particularly promising as determinants of binge decrease.

- Second, because prevention activities at institutions from our sample preceded changes in binge drinking at those institutions, the potential problem of directionality was controlled.

- Third, our prevention element findings become even more compelling when considered in light of absent meaningful relationships between institutional changes in binge drinking and student pretest binge levels, other student substance use and use-related pretest variables, and institutional characteristics (see Table 2). Of all explanatory variables we evaluated, only prevention elements revealed significant associations with institutional changes in binge drinking.

- Fourth, our analysis of data from the 10 no-change institutions also generated findings that were consistent with our conclusions regarding prevention efforts underlying binge decrease. Binge-drinking percentages for these institutions were among the lowest in the group of 130 institutions with available binge change data, and their prevention activities were most like those of the binge-drinking decrease group. One possible interpretation of these findings is that the no-change institutions may have already been engaged in some of the more promising prevention efforts before the FIPSE program began. Such efforts could have contributed to their relatively low binge-drinking percentages as demonstrated by Core pretest results.

- Last, tests of our prevention models further supported the notion that in the aggregate, particular types of prevention approaches and related activities may underlie decreases in binge drinking. Factor analysis of prevention elements produced 8 interpretable factors that improved base-rate prediction of binge-drinking decrease in our sample by 28.1%. Similarly, our 3-construct model improved the base-rate prediction by 33.2%, explained 20% of the variance in

binge change, and was shown to possess both convergent and discriminant validity.

Some Applications of the 3-Construct Model

In our study, the 3 prevention constructs worked synergistically to produce the most favorable outcomes. This finding supports binge-drinking prevention efforts based on all 3 constructs. Some examples are provided below.

Student Participation and Involvement. Student participation and involvement in activities such as volunteer service; AOD committees; task forces and advisory boards; AOD dramas, skits, or role plays; and collaborative efforts to discourage or deglamorize AOD use/abuse provide developmentally appropriate, interactive, and relational opportunities that empower students. Such activities reinforce students' beliefs that (a) they are in control of the outcomes in their lives rather than being controlled by events, circumstances, and forces outside of themselves^{36,37} and (b) their efforts and contributions are valued and can make a difference. Such activities are also congruent with a prevention orientation that encourages development of program resources and ownership by students themselves.³⁸

Educational and Informational Processes. Educating and informing with vehicles such as curriculum infusion (AOD instruction in faculty-taught classes)³⁹; AOD bulletin boards, literature racks, or displays; demonstrations or graphic displays; AOD resource centers, collections, or libraries; and curriculum infusion training for faculty and staff can also yield positive outcomes. In our study, the most effective educational and informational processes were those that avoided coercive approaches to persuasion and encouraged egalitarian and interactive rather than top-down or unilateral communication among professionals and students. Also, many of the activities that define this construct were directed toward changing the campus social/cultural environment and involved efforts to influence campus norms regarding substance use.

Campus Regulatory and Physical Change Efforts. Some of the more promising activities encompassed by this third construct include sponsoring parties, dances, socials, and coffee houses; providing alcohol-free residence halls and recreational facilities for students; disseminating and enforcing AOD policy; and providing mandatory AOD classes as part of interventions. The most successful efforts of this kind often involve students in their development and implementation. For example, efforts to change the campus regulatory environment, or to develop AOD-free alternative programming, should include student input and the least possible unilateral implementation by professionals.

These interpretations are also consistent with our earlier finding that prevention strategies that focus on discouraging or deglamorizing substance use were associated with better program outcomes than those merely banning or restricting such use. In our earlier study,⁴⁰ students were most amenable

to regulatory prevention efforts when program personnel solicited their input, when such efforts were part of a comprehensive program that also included educational and informational components, and when the institution encouraged active student participation and involvement in prevention.

Study Limitations

We content-analyzed prevention activity data from 146 IHEs and Core Survey binge-drinking change data from 130 IHEs. These institutions represented 76% and 68% of the population, respectively. However, when we merged the above data sets, we found that complete data were available for only 104 institutions (54.45% of the population). Our sample size was further diminished because we excluded the 10 no-change institutions from the main analyses. Consequently, the part of our results specifically based on listwise analyses of prevention efforts in relation to changes in binge drinking cannot be generalized to the entire population of FIPSE schools.

The schools in our sample were not selected randomly or on a probability basis, but were selected for our study because they received FIPSE grants. Such grants were intended to support a wide array of prevention approaches, and all grantee institutions were expected to establish comprehensive institution-wide drug- and alcohol-prevention programs. In effect, schools that received funding may have been those most closely aligned with FIPSE's priorities and preferences.

Although we systematically ruled out many third variables as possible determinants of binge-drinking decreases, our causal-comparative study precluded experimental manipulation of research variables. Therefore, some third variables were not controlled or may have been overlooked. For example, we did not collect institutional data on fraternity/sorority membership, so possible influences of the latter on institutional changes in binge drinking remain unknown.

We deemed our study longitudinal because the institution was our unit of analysis (ie, we compared aggregate binge-drinking rates for each school at two points in time). Our institutional binge change assessments, however, were based on cross-sectional data from Core Surveys completed by individual students at two points in time.

The binge-drinking-change analyses in our study, which were compared with like data from the 1999 CAS, were based on data from AOD prevention programs that were funded by FIPSE for 2-year intervals ending in 1994 or 1995, whereas the CAS analyses were based on 4 more years of data collection that ended in 1999. Also, the Core and CAS definitions of binge drinking were not identical.

Last, because we used our original sample to test our binge-drinking prevention models, model cross-validation is likely to produce lower prediction accuracy.

Conclusions

Multisite analyses of FIPSE-sponsored drug-prevention programs in higher education yielded a more encouraging assessment of the effectiveness of prevention programs than did the 1999 CAS.³ Significant changes in binge drinking

occurred in our sample of 94 institutions, and significantly more of these institutions reported decreases than increases in students' binge drinking. Significantly more of these institutions showed decreases in binge drinking than did institutions from the CAS, and the average posttest binge-drinking percentage for the 130 institutions for which we had binge-drinking change data was also significantly lower than that found in the CAS.

Two exploratory models significantly improved base-rate predictions of decreases in binge drinking in our listwise sample of 94 institutions, with particular combinations of social-environmental change-oriented approaches and associated activities emerging as the best predictors. Our analyses also identified and operationally defined 3 prevention constructs that should be further evaluated by researchers and considered for implementation by practitioners. Specifically, we recommend the following:

1. Deductive studies to test utility of our 3 constructs as determinants of program success in different settings;
2. Studies to unravel the myriad interactions between program approaches, settings, and outcomes;
3. Translation of our empirically derived findings into practical applications;
4. Integration of our prevention constructs with existing programming where feasible;
5. More focused qualitative analysis of prevention activities from the 10 no-change institutions, given their lowest pretest binge-drinking rates; and
6. Prevention approaches based on the 3-construct model should be combined with other approaches (eg, alternative activity, curriculum infusion, social norms, and substance banning/restricting) and their relative and joint contributions to desired outcomes should be evaluated.

A final observation regarding the significance and utility of our findings parallels introductory comments regarding validity of binge-drinking definitions.⁴⁻⁷ In the aggregate, college students' binge drinking is significantly and consistently associated with a variety of problems, but such results do not generalize to all individuals who engage in this typically high-risk behavior. Similarly, aggregate findings from analyses of FIPSE-sponsored programs support the worth of our 3 prevention constructs. However, that does not mean reliance upon such constructs will always yield desired outcomes. Institutions should consider the potential usefulness of our findings carefully, given their unique situations and circumstances.

In summary, our study suggests that certain kinds of prevention programs may work and identifies important characteristics of programs that appear to be most effective. Specifically, when programs focus on changing the campus social environment by encouraging student participation and involvement, using educational and informational processes, and engaging in campus regulatory and physical change efforts, they improve their odds of decreasing college students' binge drinking.

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NOTE

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APPENDIX

Prevention Themes and Elements Used in Analysis of FIPSE-Sponsored Institution-Wide Drug Prevention Programs in Higher Education

Program Development: Activities implemented by project personnel (ie, Project Coordinator, Project Director) for establishing the program on campus.

1. Establishing facilities
2. Conducting comprehensive planning
3. Forming steering group/advisory board
4. Recruiting and hiring staff
5. Recruiting students, staff, or faculty volunteers

Program Management: Activities implemented by project personnel (ie, Project Coordinator, Project Director) for maintaining or expediting program operation or improving the program's viability.

6. Planning, coordinating, and supervising staff
7. Soliciting and maintaining financial support
8. Program advocacy (on and off campus)
9. Preparing/disseminating program or grant reports
10. Steering/advisory board meetings

Program Accountability: Activities designed to assess campus AOD-related needs or characteristics, or to provide formative or summative program evaluations.

11. Conducting AOD use assessment
12. Conducting AOD needs assessment
13. Conducting summative program evaluation
14. Conducting activity evaluation
15. Compiling AOD use/abuse statistics
16. Use of external evaluation

AOD Policy: Activities that focus on AOD policy creation, review, change, advocacy, and/or enforcement.

17. Review, clarification, or change of policy
18. Dissemination of AOD policy
19. AOD policy enforcement
20. Advocacy of AOD policy or need for policy change

Tangible Display: AOD informational or awareness materials that may be displayed or disseminated individually or in combination.

21. AOD project newsletter
22. Publication of AOD articles or public service announcements (including TV)
23. Posters, flyers, signs, or banners

24. Handbooks, pamphlets, or brochures
25. Promotional items (t-shirts, hats, key rings, etc)
26. AOD bulletin boards, literature racks, or displays

Unidirectional Vehicles: Information/awareness activities in which communication flow is primarily one-way.

27. Live presentation, lecture, or speech
28. Film/video presentations or programs
29. Radio or audio programs
30. Plays, skits, dramatizations, or role-plays
31. Demonstrations or graphic displays
32. Written communications

Multidirectional Vehicles: Information/awareness activities in which interaction or dialogue between presenters and participants and among participants is desired.

33. Seminars, workshops, or retreats
34. Conferences, discussions, or focus groups

Alternative Activities (AOD-free): Activities that exclude or discourage use of alcohol/other drugs while concomitantly providing opportunities for student participation and involvement.

35. Parties, dances, socials, or coffee houses
36. Commercial entertainment or movies
37. Recreational activities or outings
38. Participatory athletic competitions
39. Participatory nonathletic competitions
40. Participation in volunteer activities

Curriculum Infusion: Activities that help integrate AOD issues, information, or concepts with existing curriculum or other established educational processes.

41. AOD instruction in faculty-taught academic courses
42. AOD course, minor, or certificate programs
43. Mandatory AOD classes as part of intervention effort
44. AOD speaker/program in classes or orientation
45. AOD practicum or internship
46. AOD resource center, collection, or library

Cooperation/Teamwork: Drug prevention-related activities that stress and rely on cooperation, mutual support, and teamwork among participants.

47. Collaboration within group of students or staff
48. Collaboration between groups of students or staff
49. Collaboration between offices on campus
50. Collaboration with off-campus agencies

Training (AOD): Developing or implementing AOD training activities for students, faculty, staff, or administrators.

51. Professional AOD staff training
52. Awareness and procedural training for staff/faculty
53. Curriculum infusion training for staff/faculty
54. AOD training for student peers or volunteers
55. AOD training for resident assistants, servers, or hosts

Student Involvement/Empowerment: Activities that encourage student participation and involvement in activity development and/or implementation.

56. Peer educator/counselor/assistant programs
57. Student participation in AOD dramas or skits
58. Student AOD presentations in academic classes
59. Student participation on AOD committees or task forces

60. Student collaboration in AOD projects or events
61. Participation in volunteer service activities

Support: Activities that provide either planned or impromptu encouragement or support for students or other target groups.

62. Support or assistance for AOD support groups
63. Short-term or walk-in AOD counseling/referral
64. Events recognizing AOD program participants
65. Publicity recognizing program participants
66. Motivational activities/programs for staff/volunteers
67. Recognition through attendance at conferences/events

Environmental Change: Development or implementation of activities designed to create a campus environment (norms, atmosphere, or physical surroundings) that discourages substance use/abuse and advocates more healthy lifestyles.

68. Changing campus physical environment
69. Changing campus social/cultural environment
70. Changing campus regulatory environment

Off-Campus Outreach: Activities that emphasize establishing or maintaining working relationships with community agencies and organizations.

71. Local participation in campus AOD activities
72. AOD presentations to local school or youth groups
73. AOD presentations for civic groups or clubs
74. Participation on local AOD task forces/committees
75. Collaboration with local agencies or professional groups

Reactive Prevention: Activities designed to assist persons experiencing difficulties associated with substance use/abuse; such activities are generally conducted by trained professionals.

76. Employee assistance programs (EAP)
77. Student assistance programs (SAP)
78. Short-term individual, group, or walk-in counseling
79. Sponsoring AOD support groups
80. Mandatory AOD classes as part of intervention effort
81. Efforts to ban or restrict AOD substances

Proactive Prevention: Activities designed to activate, support, or empower the critical mass of those on campus who do not wish to use alcohol or other drugs.

82. Empowering "critical mass" committed to prevention
83. Educating/informing about health/wellness
84. Establishing healthy alternative programs/facilities
85. Recruiting positive role models
86. Discouraging or deglamorizing AOD use/abuse

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