

## College Alcohol Education and Prevention: a Case for Distance Education

By: [David L. Wyrick](#), Melodie D. Fearnow-Kenney, Cheryl Haworth Wyrick, [Daniel L. Bibeau](#)

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### **Abstract:**

College educators and program developers have responded to this need using a variety of different multimedia technologies. Alcohol-related web sites are among the most popular. Many of these sites are designed to improve -knowledge, attitudes, and behavior by teaching scientific facts about alcohol and its effects on the body. Other programs are delivered via CD-ROM (e.g., Alc 101) and have demonstrated some effectiveness. The purpose of this paper is to describe some of the benefits of delivering alcohol education and prevention curricula over the Internet in the form of a distance education course.

Despite obvious limitations in sample size, low occurrence of high-risk alcohol use, and the short-term nature of data collection, findings demonstrated two essential points: (1) that College Alc has significant potential for effectively reducing alcohol-related harm among college students and (2) that the Internet is a desirable and effective medium for disseminating a college alcohol education course.

**Keywords:** Alcohol Abuse | Prevention | College Students | Distance Education | Program Evaluation | Internet

### **Article:**

Dear Editor:

Alcohol abuse among the more than six million college students in this country is one of the major contributors to preventable health consequences among that group. College students who engage in high-risk drinking are more likely to experience hangovers, memory loss, and alcohol overdose (Wechsler, Dowdall, Davenport, & DeJong, 2001); use other drugs such as tobacco and marijuana (Emmons, Wechsler, Dowdall, & Abraham, 1998); have been a victim and/or perpetrator of sexual assault (Ullman, Karabatsos, & Koss, 1999); have unprotected sex (Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994); engage in other high risk sexual

behaviors (e.g., multiple partners and high frequency of sex) (Prince & Bernard, 1998); and drive under the influence (Wechsler, Dowdall, Maenner, GledhillHoyt, & Lee, 1998).

College students who abuse alcohol are also more likely to undermine the health and safety of other students (Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994). Non-heavy drinking students are more likely to be hit, have their personal property damaged, or experience an unwanted sexual advance when attending a school with a high level of alcohol consumption (Wechsler, Moeykens, Davenport, Castillo, & Hansen, 1995). Innovative efforts to reduce college alcohol abuse and related consequences are much needed.

College educators and program developers have responded to this need using a variety of different multimedia technologies. Alcohol-related web sites are among the most popular. Many of these sites are designed to improve -knowledge, attitudes, and behavior by teaching scientific facts about alcohol and its effects on the body. Other programs are delivered via CD-ROM (e.g., Alc 101) and have demonstrated some effectiveness. The purpose of this paper is to describe some of the benefits of delivering alcohol education and prevention curricula over the Internet in the form of a distance education course.

Though there are inherent challenges (i.e., perceived distance, lack of face-to-face communication, and challenge of creating classroom community) associated with Internet-based courses, there are some distinct advantages. First, Internet-based courses have the potential to reach a broad spectrum of college students, including working students, students living in rural areas, and students with disabilities that limit their access to traditional classrooms. More traditional, on-campus students also stand to benefit from the ease and flexibility of an online course. Second, presenting the curriculum as a 1-credit, stand-alone course or as part of an existing 2- or 3-credit course may facilitate adoption and increase student motivation and participation. Third, compared to other technologies (i.e., CD-ROM programs), Internet-based courses can be developed more quickly and are easier to update and incorporate new innovations in video and audio capabilities. Fourth, the use of active server pages (ASP) and dynamic data bases allows for data collection and feedback about individual, class, and even campus-wide behaviors and opinions. Finally, Internet-based courses can easily be developed to support tailored program evaluation. Data collection and program evaluation are recognized as major barriers to the implementation of alcohol prevention efforts of college campuses. Offering administrators the ability to assess their programs should help colleges undertake and maintain prevention efforts.

The research to date on distance education has been promising. Students participating in distance education, as compared to students in conventional classrooms, have performed as well or better on take-home essays, term papers, and other homework assignments (Soude, 1993). Attitudes toward course materials also tend to be positive (Martin & Rainey, 1993). Furthermore, a vast majority of colleges and universities offer online instruction. During the 2000-2001 academic year, 90 percent of 2-year public and 89 percent of 4-year public institutions of higher education offered distance education courses (Waits & Lewis, National Center for Educational Statistics, 2003). Between the 1994-1995 and 1997-1998 academic years, the number of course offerings and enrollments in distance education doubled. The need and the infrastructure required to support an online alcohol course clearly exists at practically all institutes of higher education.

College Alc was developed to address the need for an effective and innovative curriculum aimed at preventing alcohol abuse and associated consequences on college campuses. Unlike other

college alcohol programs, it is intended to be taken for credit and to be led by an instructor. The development of the course was funded by a grant from the National Institute on Alcohol Abuse and Alcoholism (NIAAA). Highly interactive and student-centered Internet-based educational tools are used throughout the curriculum. These tools include a class bulletin board that is used to facilitate discussions and personal web pages that allow students to get to know others in their class.

The course consists of five units: (1) Alcohol: How it Works; (2) Alcohol's Effects on the Brain and Body; (3) Risky Business: Drunk Driving, Sex, and Violence; (4) Getting Help; and (5) Harm Reduction. Each unit contains outside readings, interactive games, a quiz, and engaging assignments. All content and activities are designed to produce positive changes in risk factors (mediating variables) that have been empirically linked to high-risk alcohol use among college students. The curriculum is relevant to both drinking and non-drinking students alike.

### Program Evaluation

A small pilot test was conducted at the University of North Carolina at Greensboro. The course was implemented in two Personal Health classes that were offered through the Public Health Education Department. Personal Health is offered as a three-credit, classroom-based course. Agreement was reached with the department to allow one of those credits to be offered in the form of College Alc. All procedures and measures were approved by Internal Review Boards (IRB's) at both the university and the research institute. College Alc was implemented over a three week period during which students could access the course at any time and from any computer with Internet access. Students met with the instructor once per week for an hour to discuss the course and address any technical problems. The course was facilitated by an experienced health educator.

Sixty-nine students in two classes were asked to participate in the evaluation of College Alc. Each student was required to complete the College Alc curriculum, but was given the option to decline participation in the evaluation surveys. Ninety-four percent of the students agreed to participate in the data collection activities. The mean age of the participating students was 20.38 years. There were 50 females and 15 males. Ethnicity was roughly split between White (36; 55.4%) and African American (27; 41.5%,) students, with one Hispanic student (1.5%) and one student who classified him/herself as Other (1.5%).

The pilot test was evaluated using a pre and posttest paper-and-pencil survey as well as a course feedback form. Students voluntarily completed the survey prior to their involvement in the course and again after their completion of the course. Informed written consent was gathered prior to data collection and numeric identifiers were used to protect confidentiality. The survey included 92 items that assessed both mediating variables (i.e., alcohol expectancies, alcohol use intentions/commitments, normative beliefs, and alcohol-related attitudes) and behavioral outcomes (i.e., frequency and quantity of use and socio-emotional and community problems related to drinking behavior).

Each student who took the posttest survey also completed a course feedback form. The form consisted of 12 questions. Eight of the questions were in multiple choice format and the remaining four were open ended. The multiple choice items used Likert scales to allow students to rate: (1) overall quality of the course; (2) Internet-based format vs. a traditional classroom setting; (3) the amount of learning achieved; (4) the amount of technical difficulties experienced;

(5) the level of technical assistance received; (6) whether they would take the course again, (7) whether they would recommend the course to a friend; and (8) course effectiveness at reducing alcohol-related harm among college students. The four open ended questions allowed the students to report the following in regards to the course: (1) what they liked; (2) what they disliked; (3) what they would add or change; and (4) any other comments or suggestions they had.

## Results

A series of dependent-sample t-tests (significance level  $p < .10$ ) were conducted to assess pretest to posttest changes in mediating variables and alcohol-related outcomes. Qualitative data was summarized using frequency of response to each item. For the purpose of these analyses, high-risk drinkers are defined as those who report consuming five or more drinks on two or more occasions in the past two weeks.

Normative beliefs. There was an increase in students' estimated percentage of non-drinkers from pretest ( $m = 23.9\%$ ) to posttest ( $m = 34.2\%$ ;  $t = -4.99, p < .10$ ). In addition, estimates of the percentage of students who drink 5 or more alcoholic drinks per occasion ( $t = 1.67, p < .10$ ), the frequency of college student drinking ( $t = 3.20, p < .10$ ), and the frequency of fraternity member drinking ( $t = 3.36, p < .10$ ) decreased from pretest to posttest.

Alcohol expectancies. When analyses were conducted on the total sample, expectancies related to alcohol's role in sexual pleasure ( $t = -1.83, p < .10$ ) and relaxation/tension reduction ( $t = -3.36, p < .10$ ) were reduced from pretest to posttest. When analyzed separately, low-risk drinkers demonstrated a significant reduction in expectancies related to relaxation/tension reduction ( $t = -4.05, p < .10$ ). High-risk drinkers demonstrated a significant reduction in expectations related to sexual pleasure ( $t = -2.01, p < .10$ ) and a surprising increase in expectations related to social assertiveness ( $t = 2.29, p < .10$ ). The inconsistency of results may be due to a small number of students in the high-risk group ( $n = 9$ ).

Alcohol-related personal commitments. No pretest-posttest change was observed for personal commitments ( $t = -.576, p > .10$ ). Revisions to the curriculum will focus on better targeting and changing this mediator.

Alcohol-related attitudes. Although not a targeted mediator, there was interest in assessing the effect of the course on alcohol-related attitudes. No change was observed in overall attitudes ( $t = -.65, p > .10$ ). However, there was a slight improvement in alcohol-related attitudes among high-risk drinkers ( $t = -2.04, p < .10$ ).

Heavy alcohol use. High-risk alcohol use (i.e., 5 or more drinks in one setting during the past 2 weeks) did not change significantly from pretest to posttest ( $t < 1.00, p > .10$ ). This is not surprising considering the low occurrence of high-risk alcohol use in this sample (at pretest less than 25% of the sample report drinking this much; less than 23% at posttest) and the short amount of time between testing occasions (i.e., five weeks). Similarly, there was no reduction in the frequency of alcohol use (i.e., number of days alcohol was used in the past 30 days;  $t < 1.00, p > .10$ ).

Problems associated with alcohol use. A reduction in problems included in the Socio-Emotional scale ( $t = 2.51, p < .10$ ) and the Community Problems scale ( $t = 3.77, p < .10$ ) was observed. These effects were significant for both high-risk drinkers and low-risk drinkers. The Socio-

emotional scale assesses behaviors such as feeling nervous or irritable, family problems related to drinking, and hurting another person emotionally or physically. The Community Problems scale includes driving under the influence, having problems with the law or school administration, and spending too much money on alcohol or drugs.

Qualitative student feedback. Students' ratings of the course are presented in Table 1 and open-ended feedback is summarized here. Overall, students gave positive evaluations of College Alc. They liked being able to work on the course at times and at places that were most convenient for them. Setting their own learning pace was also very appealing. Many students also found the tools used in this Internet-based course (i.e., class bulletin board, daily drinking logs, and personal web pages) to be very effective at promoting student interaction and sharing of information. Also, students expressed that they liked the course, would recommend it to friends, and believed that it has the potential to reduce alcohol abuse and alcohol-related harm among college students.

## Discussion

Despite obvious limitations in sample size, low occurrence of high-risk alcohol use, and the short-term nature of data collection, findings demonstrated two essential points: (1) that College Alc has significant potential for effectively reducing alcohol-related harm among college students and (2) that the Internet is a desirable and effective medium for disseminating a college alcohol education course.

Although alcohol use was not reduced in this pilot evaluation, reductions in self-reported socio-emotional and community problems associated with alcohol use were observed among both low- and high-risk drinkers. In addition, findings demonstrated the potential of College Alc to effect research-based mediators of college alcohol abuse and related problems, improvements in normative beliefs and alcohol expectancies were observed from pretest to posttest. Specifically, the intervention helped students realize that fewer of their peers engage in and approve of high-risk alcohol use and that alcohol plays less of a role in sexual pleasure and relaxation/tension reduction than they may have once expected.

Distance education via the Internet offers college administrators and program developers an effective means by which to implement and evaluate alcohol education and prevention curricula. Internet-based courses offer many attractive features. They are easily updated and accessed like many web site programs, yet have the integrity, and required accountability of an academic course. As demonstrated in this pilot study, the course was well received by students.

Further development and evaluation of the course described here is currently underway (i.e., a large-scale independently evaluated randomized field trial). More research is needed to determine how the technologies of distance education can be used to help colleges and universities tackle the challenges of data collection, program development, implementation, and evaluation of alcohol programs. Logistics such as determining the credit value of the course, how to train instructors to lead the course, and how and to whom the course should be offered are issues that need to be addressed. However, alcohol education via Internet-based courses offers administrators another method that is showing promise.

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Table 1  
Course Perceptions  
Students who took the College Alc course: 45.2% rated College Alc as a "very good" or "outstanding" course. 53.2% rated College Alc as being better than other online courses they had taken. 56.5% rated the learning they achieved from College Alc as "very good" or "outstanding." Only 8% reported having "many" or "a lot" of technical difficulties. 58.1% rated the technical assistance they received during College Alc as "very good" or "outstanding." 66.1% reported that they would take College Alc again if given the opportunity. 75.8% reported that they would recommend College Alc to a friend as a good course to take. 21.0% reported that they thought College Alc would be "very effective" at reducing alcohol-related harm among college students and 71% reported that they thought it would be "somewhat effective."

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- David L. Wyrick, M.P.H., Ph.D.,

Melodie D. Fearnow-Kenney, Ph.D., and Cheryl Haworth Wyrick, Ph.D.

Tanglewood Research, Inc., Greensboro, NC

Daniel L. Bibeau, Ph.D.

University of North Carolina at Greensboro

Wyrick, David L.^Fearnow-Kenney, Melodie D.^Wyrick, Cheryl Haworth^Bibeau, Daniel L.