



These studies (Clapp and Shillington, 2001; Clapp, Shillington and Wechsler, Kuo, Lee and Dowdall, 2000) have examined environmental and protective factors related heavy episodic drinking. For instance, et al. (2000b) reported that students were more likely to drink in private and spend less on alcohol than their of age counter-parts. This study also after controlling for other predictors, living in a fraternity or sorority, inexpensive alcohol, and drinking beer were predictive of heavy episodic

ough little has been written concerning the efficacy of environmental approaches to alcohol problem prevention on college campuses, evidence from community prevention trials demonstrate the effectiveness of such approaches (Saltz, Grube, Voas, Gruenwald and Treno, 1997). Recently, two case studies of environmental approaches on college campuses also have been published. Gebhardt, Kaphingst and DeJong (2000), illustrated how a number of environmental management approaches were temporally associated with a decrease in noise complaints around one college campus. In another case study, Sen, Collins, Mills-Nova and Glider (1999) present an overview of how environmental management and social norms approaches were combined at the University of Arizona. Johananessen et al. demonstrated that such environmental approaches are associated with reductions in self-reported heavy episodic drinking. In neither of these studies were controlled prevention trials, they begin to address the much need support and guidance related to environmental prevention approaches on college campus.

Inconsistent with these studies, alcohol researchers have recently stressed the importance of using environmental data in the planning and evaluation of college alcohol prevention efforts (Clapp, Voas, and Segars, 2001; DeJong, Vince-Whitman, Cretella, Gilbreath, Rosati, Zweig, 1998; Langford, 2001). This paper presents four interrelated case studies of how environmental prevention strategies were implemented by a college alcohol prevention project to 1) change the marketing practices of a student-oriented bar, 2) alter the sales practices of a bookstore concerning alcohol paraphernalia, 3) to develop a campaign goal of reducing risk factors related to heavy drinking at private student bars and 4) stop an unsafe bus from transporting students to bars in Mexico. Environmental researchers and prevention specialists pursue and advocate for environmental approaches, such cases are important to the field until controlled prevention trials are conducted.

#### REPORT FROM THE FIELD

The Collegiate-Community Alcohol Prevention Partnership (C-CAPP) is a "town" coalition with the goal of reducing AOD problems experienced by college students attending colleges and universities in San Diego County.

Beginning in 1999, C-CAPP is funded by the U.S. Department of Education, Safe and Drug-Free Schools Program, The National Institute of Alcoholism and Alcohol Abuse, and the Center for Substance Abuse Prevention. Given that AOD problems occur both on and off campus—including in Mexico—C-CAPP focuses its environmental prevention efforts on an off campus throughout the entire San Diego region including Tijuana, Mexico.

C-CAPP coalition members represent every major university in San Diego, local and state law enforcement and regulatory agencies, student groups, community groups, prevention specialists, businesses (including bars), international representatives, student affairs personnel among others.

C-CAPP guides its efforts using a conceptual model developed by Clapp et al. (2001), based on earlier work related to community alcohol consumption (Holder and Bloese, 1986) and current college alcohol prevention literature. Environmental sectors in the model include social norms, formal regulation and control, retail sales and availability, and high-risk contexts of alcohol use. Each of these interrelated sectors of the college alcohol environment is viewed as contributing to the aggregate level of alcohol consumption in a college population, which, in turn, leads to aggregate alcohol-related problems.

Epidemiological data are collected within each of the above sectors and used to guide and evaluate prevention strategies. Coalition members and project staff select prevention strategies within sectors based on these data and the research literature. The project collects data from a variety of primary and secondary sources including: campus AOD police reports, resident hall AOD incident reports, school papers and public access bulletin boards, self-report surveys of student alcohol use, and field surveys of alcohol use that include breathalyzer tests to measure students' blood alcohol concentrations. Data collection procedures have been standardized to maximize reliability and validity.

The four case studies presented below illustrate how such data collection, or environmental scanning, can inform primary prevention strategies aimed at reducing risk factors for alcohol-related problems in college environments.

#### Changing Alcohol Promotion on Campus

The price of alcoholic beverages and the way they are marketed to college students can be important considerations in developing environmental alcohol prevention strategies. Coate and Grossman (1988), for instance, found that price controls tend to have the biggest effects on young heavy drinkers. Similarly, Chaloupka and Wechsler (1996) found that increases in beer prices resulted in lower rates of heavy episodic drinking and underage drinking among college women.

Environmentally, students potentially learn of inexpensive alcohol promotions at local bars and taverns through on campus advertising (Ryan and Mosher, 1991; Breed, Wallack, and Grube, 1990). Although the causal relationship between

## Clapp and Stanger

ing and drinking behavior is not firmly established, relational studies Neuendorf, McDermott, 1983; Grube and Wallack, 1994) have found that re to advertising is related to some high-risk drinking behaviors and inten-

drink.  
 The potential importance of alcohol promotion, C-CAPP monitors on- advertising by bars and nightclubs. Using assessment tools created by Colthurst and Segars (1994), C-CAPP research assistants document bars- ing price promotions under \$2.00 a drink during weekly content analy- the school bulletin boards and the student newspaper. Once identified, this ation is forwarded to C-CAPP's project coordinator and a member of the- p coalition who works in the hospitality industry. Together, the coordina- l the coalition member contact the high-risk bar and ask them to modify advertising practices. The establishment is offered free responsible beverage 2 (RBS) training and invited to participate in C-CAPP.

Within the first year of the project this process resulted in changes at six high- ers (three were trained in RBS and three changed their advertising and security res) that advertised heavily on campus. Such data, when coupled with a e coalition, can also facilitate changes in more recalcitrant establishments. articular bar identified regularly by C-CAPP researchers refused to change its a drink (no time limit) special. Each week, this bar regularly posted hundreds ers advertising this promotion all over local campuses. Given that the bar is d several miles away from all of San Diego's major universities, C-CAPP's ion members felt this price promotion would lead to students driving drunk. 2 survey data from adjudicated clients attending San Diego's DUI offender am, we were able to confirm that this bar was the last establishment visited by uents arrested for drunk driving in a six-month period. Further, this survey indicated that 3 of these students were under the legal drinking age.

These data and the content analysis data related to the bar's advertising prac- were shared with law enforcement officials working with C-CAPP. This in resulted in the bar being investigated by the California Alcohol Beverage trol agency for violating the terms of their liquor license. During the course ie investigation, the bar continued to advertise heavily on campus. To increase pressure on this establishment to alter its practices, the a member of the San go Police Department who regularly participated in C-CAPP wrote the bar and ned them that by distributing flyers on campus they were in violation of a local r ordinance and could be fined. The combination of these efforts, resulted in r bar owner agreeing to stop marketing on local campuses and to alter his alcohol izing and promotion practices.

Other uses of such content analysis data included pressuring the school news- er to change its alcohol advertising policy (they no longer accept ads with drinks ler \$2.00) and identifying student-oriented bars for RBS training. In the first if of the C-CAPP project, over 200 servers in local college oriented bars and

nightclubs were trained in RBS. As illustrated in the next case example, bar and nightclubs advertisements can also be used as to identify other alcohol-related risk factors and public safety problems.

### Changing Transportation Systems in High-Risk Alcohol Environments

One unique challenge C-CAPP faces is college students drinking in Tijuana, Mexico. With a myriad of bars selling inexpensive alcohol and a minimum legal drinking age of 18 years, Tijuana has long been a favorite destination of San Diego area college students. Research by Voas, Lange and Laurer (1998) and Lange and Voas (2000) has illustrated that student drinking in Mexico often results in heavy drinking, intoxication and drunk driving. Others have reported that students drink significantly more in Mexico than they do when drinking in the U.S. (Clapp, Voas and Lange, 2001).

Using the scanning process described above, C-CAPP research assistants identified a Tijuana nightclub that was sending a bus to campus to transport stu- dents from San Diego to Tijuana. The advertisements for this club were forwarded to C-CAPP's Law Enforcement Task Force, a subcommittee comprised of numer- ous law enforcement agencies concerned with enforcing alcohol laws related to students. Using the information on the flyer, officers from the Task Force met the bus at its advertised pick up point. The driver was warned about possible safety vi- olations, including allowing underage students to drink on the bus and overloading the bus. Subsequent undercover surveillance of the bus by Task Force members identified numerous traffic safety violations, including inoperable emergency ex- its, capacity violations (80 students on a 44 person vehicle), expired tags, and open alcohol containers. The driver was arrested for these violations and the vehicle was impounded.

This intervention may have reduced the access many students living in cam- pus residence halls might have had to drinking in Mexico. Although it is possible that students might seek alternative transportation to Mexico, and even drive in- toxicated, the unsafe conditions in which they were being transported required intervention.

### Influencing High-Risk/Low Visibility Contexts of Alcohol Use

The examples provided above concern problematic public drinking contexts. A large proportion of student drinking, however, occurs in even less controlled private settings. In addition to advertising, student surveys examining drinking contexts can be important environmental alcohol prevention efforts. Using items presented in the Campus Risk Assessment Guide (Ryan et al., 1994) as starting point, C-CAPP developed a series of questions to assess students' last drinking

each semester. C-CAPP conducts random telephone interviews with a minimum of 400 students (See Clapp and Shillington, 2001). Students are asked a series of questions concerning their most recent drinking event. Items query respondents about the duration of the event, the purpose of the event, the location of the event, the number of drinks consumed, who they were with, and a series of about 15 numerous environmental risk and protective factors associated with the event.

Based on analyses of these data (see Clapp, Shillington and Segars, 2000; and Shillington, 2001), we identified risk and protective factors related to episodic drinking and alcohol-related problems. One key finding from our research was that students drank almost equally in bars/restaurants and private parties. This finding suggested that preventive efforts should target both settings. As shown above, C-CAPP works with college oriented bars by providing RBS training and policy consultation. Unlike bars, prevention professionals cannot readily address private drinking contexts.

To address this problem, a special subcommittee of C-CAPP developed a strategy to address heavy drinking in private parties. Analyses of the drinking event data indicated that the presence of illicit drugs, playing drinking games, drinking beer, and having several people intoxicated were all environmental risk factors for alcohol problems. In contrast, having food and non-alcoholic beverages were environmental factors that protected against alcohol problems and episodic drinking (Clapp, Shillington and Segars, 2000; Clapp and Shillington, 2001).

Using these data coupled with student and law enforcement input, the subcommittee developed a door hanger and other materials with tips on how to host a party that was distributed to over 25,000 students and community residents throughout the San Diego region. One side of the door hanger informs students and community residents about laws related to underage drinking and a San Diego Department program that allows police to restrict addresses that have been cited in two noise complaints (in a month) from having any parties. To help publicize and promote the program, C-CAPP student members developed a story that was published in three campus newspapers. In addition to the informational campaign, the San Diego Police Department began to actively pursue the aforementioned noise ordinance in student areas. Within a few months of beginning the enforcement, over 60 student houses have been restricted from having parties.

#### **Removing Heavy Drinking Paraphernalia From the Campus Bookstore**

Sometimes campuses inadvertently send students mixed messages concerning heavy drinking. One potential source of such mixed messages is often found in campus bookstores, which regularly sell alcohol-related merchandise. Although,

it is unclear whether such items have any direct relationship with heavy drinking, they do contribute to a normative environment that encourages heavy drinking.

As suggested by Ryan et al. (1994), C-CAPP conducts bimonthly scans of the campus bookstore. Research assistants walk through the campus bookstore to observe the types of alcohol-related paraphernalia being sold. In one such assessment, two types of alcohol-related glassware were identified as being potentially conducive to heavy drinking. One item was a shot glass that had graduated lines painted on one side reading Freshman (the one ounce line), Sophomore (the two ounce line) and so on. Topped off the shot glass held the equivalent of five standard drinks. The other item was a plastic half-yard of beer glass, featuring the school logo and a football helmet. This 24-ounce beer glass was being promoted for tailgate parties.

These items were shown at a C-CAPP coalition meeting and a variety of strategies from boycotting the bookstore to writing a letter of concern were discussed. That same day, a coalition member approached the local media, who were very interested in a story about the "binge" drinking materials being sold to students by a campus bookstore. A few hours later that day a local television station sent a crew to the campus to do such a story. Armed with this information about a potentially embarrassing news story, the coalition member called a campus official about the media's intent. Then the coalition member called the marketing department of the bookstore and gave the store the opportunity to remove the objectionable drinking items from their two campus stores and website before the media arrived. The bookstore permanently removed these items prior to the arrival of the news crew. Subsequently, the media produced a more favorable piece, which applauded the concerted efforts of C-CAPP and the bookstore to make an important environmental change.

#### **DISCUSSION**

The examples provided above illustrate a few environmental approaches to alcohol prevention planning in college communities. Clearly there are numerous other environmental strategies related to college students' drinking behavior. Given that environmental factors are important to the manifestation of heavy drinking (Clapp and Shillington, 2001; Wechsler et al., 2000), and that alcohol environments are conceptually complex and dynamic (Clapp, Segars and Voas, 2001), college prevention professionals are faced with the ongoing challenge to identify and modify environments related to alcohol problems. Such efforts require creative thinking and the willingness to deviate from more traditional individually based prevention approaches like educational campaigns.

As these examples suggest, the creative assessment of environmental data can assist in turning theoretical discussions of environmental issues such as price promotions and alcohol serving practices into specific interventions aimed at changing

high-risk environments. Although the present case studies cannot link environmental changes directly to changes in student drinking behavior, changes are theoretically important in reducing environmental risks associated with heavy drinking by college students. As environmental prevention becomes more popular in the college AOD prevention field, the need for valid and reliable measures of environmental indicators also become increasingly important. Studies that document specific environmental measurement techniques are necessary. Further, studies that document the issues associated with environmental prevention efforts aimed at reducing alcohol problems are greatly needed. Testing the efficacy of environmental college prevention programs will require such work. C-CAPP project and other environmentally based prevention projects are beginning this work. We encourage all prevention professionals using such data-driven environmental strategies to document and publish them in the professional literature. The dissemination of efforts will serve to move the college AOD prevention field forward.

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