Environmental Strategies for Prevention of Drug Use and Risks in Clubs

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Abstract

Environmental prevention strategies in club settings where music and dance events are featured could provide an important new arena for the prevention of drug use and other risky behaviors (e.g., sexual risk taking, intoxication and drug use, aggression, and driving under the influence). Electronic music dance events (EMDEs) occur in clubs that attract young, emerging adults (18–25 years of age) and attract individuals who engage in various types of drug use. Borrowing from the environmental prevention studies that focus on reducing alcohol use and related problems, a model for drug prevention in the club setting is proposed. Initially, an overview of the relationships between EMDEs and drug use and other risky behaviors are presented. Next, rationales for environmental strategies are provided. Finally, an environmental approach to prevention of drug use and risky behaviors in clubs is described. This comprehensive set of environmental strategies, is designed to be mutually supportive and interactive. Environmental strategies are believed to provide potential for developing an efficacious prevention strategy. The environmental prevention approach presented here is composed of three intervention domains: (1) Mobilization, (2) Strategies for the Exterior Environment, and (3) Strategies for the Interior Environment.

Keywords

drugs; prevention; clubs

INTRODUCTION

Environmental prevention strategies in club settings where music and dance events are featured could provide an important new arena for the prevention of drug use and other risky behaviors. Electronic music dance events (EMDEs) occur in clubs that attract young, emerging adults (18–25 years of age). These events feature electronically produced music (not live music) and promote dancing. Club patrons who use drugs either before or after entering the club can present risks to themselves and others, as well as to the business. Other risky behaviors, including drugged driving, alcohol intoxication (including intoxication combined with drug use),

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aggression/unruly behaviors, and sexual risk-taking, are also of concern and warrant prevention strategies. However, there is no published research concerning effective environmental prevention strategies to reduce drug use, drug sales, or other risky behaviors in EMDEs.

In this article, environmental prevention strategies to reduce drug use and related harms for the club and music scene are presented. Prior studies, focused on alcohol prevention, demonstrate the efficacy of environmental interventions for the past 20 years, and are adapted for addressing drug use in the club settings. Initially, an overview of the relationships between EMDEs and drug use and other risky behaviors are presented. Next, rationales for environmental strategies are presented. Finally, a design for an environmental approach to preventing drug use and associated risks in music events is provided.

ASSOCIATIONS BETWEEN MUSIC EVENTS, DRUG USE, AND OTHER RELATED RISKS

The emergence of EMDEs occurs in the historical context of rave parties which were initially large-scale and temporary parties that included electronic music with "trance-like" dancing, light shows and special effects. Prior studies suggest a connection between drug use and attending raves. For example, an international study of six raves in Switzerland found that in the preceding 30 days, a fifth of the attendees had used ecstasy and a fifth had used cocaine (Chinet et al., 2007). Another study reported an association between the number of rave events attended and the number of drugs used at the most recent event (Barrett et al., 2005).

Beginning in the mid-1990's, legitimate business venues (such as bars and clubs licensed to sell alcohol) began to host events that competed with traditional rave events by attracting rave attendees to these clubs (Measham et al., 1998). Ensuing public discussions occurred expressing concerns about drug use and/or sales on premises or risks associated with drug/alcohol use (including overdoses), driving under the influence, risky sex, and aggressive behaviors. A few studies explored the connections between drug use and young adults attending clubs that featured EMDEs. For example, a club study of self-reported drug use among young adults revealed that the vast majority (89%) reported lifetime ecstasy use and a fifth reported ecstasy use in the two days prior to the event (Arria et al., 2002).

More recently, biological assay evidence links drug use to patrons attending EMDEs. In our prior work, two separate studies using portal methodology (Voas et al., 2006) were conducted to collect anonymous biological assays of drug use upon entry and exit from patrons (Miller et al., 2005; Miller et al., manuscript-b). In the first study six events were chosen on the East and West Coasts that were considered to be at high risk for drug use at events based upon key informant reports. For these six events, 54% of the attendees that participated in the survey were positive for drugs at either entrance or exit. For the second study, selection of clubs was based upon an observational study of randomly selected clubs (Miller et al., manuscript-a). Based upon observed risk indicators, 12 clubs were selected to represent either high or low risk events located on the East and West Coasts. Based solely on oral assay data, 24.6% of patrons on entry and 26.4% on exit tested positive for drug use (Miller et al., 2008b). Cocaine and Marijuana were the most commonly reported drugs at either entrance or exit (17% and 14% respectively). Rates of amphetamine were 11% and specifically, ecstasy use was 9%.

In addition to drug use in clubs, there are concerns about other risky behaviors such as aggression, risky sexual behavior, intoxication (including intoxication combined with drug use), and drug-related problems. Clubs that feature EMDEs share similarities with bar settings that have been studied for indicators of aggression. A study of 18- to 30-year-olds found that about 12 percent of both college and community women had experienced aggression inside or outside a bar in the preceding year (Leonard et al., 2002). Miller et al. (2005) found that 13%

of attendees at clubs that feature EMDEs, reported experiencing being pushed, grabbed or shoved during the course of the evening. Klitzman et al. (2000) in a study of EMDE attendees report an association between sexual risk taking, homosexual patrons, and the club settings. Frequent MDMA use (defined as at least monthly) revealed increased levels of high risk sexual behavior. Such findings are corroborated by other studies which show chronic club drug users having high rates of unprotected intercourse with their most frequent partners (Clatts et al., 2005).

Impaired driving also persists as a major concern among attendees of clubs and bars (Wells-Parker et al., 1986; Wells-Parker & Williams, 2002). In Victoria, Australia, 273 attendees of clubs were asked to self-report on their driving behaviors in relation to substance use (Degenhardt et al., 2006). The majority (85%) reported "ever" driving after drug use and about a third reported driving after drug use on a weekly basis. Approximately one-third of the respondents reported an intention to drive home from the event, and a small percent reported that they would be willing to drive or to be driven by someone under the influence of alcohol (10%), cannabis (11%), and/or methamphetamine (8%). Among patrons who attended EMDEs at six clubs on the East and West Coasts, nearly a third (30.3%) of the individuals who reported that they were driving were impaired by drugs based upon either self-report or oral assay data (Furr-Holden et al., 2006).

Characteristics of EMDEs patrons suggest that prevention strategies in such settings will reach, potentially, both males and females, who are from diversified ethnic backgrounds, who are in a "single" relationship status, and who are in the labor force as well as colleges and universities. Based upon data collected from portal studies at 12 EMDEs conducted on the East and West Coasts of 371 participants, two-thirds were male (Miller et al., manuscript-c). Ethnic breakdowns for this sample were as follows: Whites (49%), Black/African American (20%), Hispanic (12.7%), Asian (7%), Hawaiian/Pacific Islander (2%), Native American (0.5%), Other (6%). Half (50%) of the participants were not currently in a relationship. Only a third of the participants identified themselves as students (34%), leaving two-thirds of the participants as non-students (66%).

RATIONALE FOR ENVIRONMENTAL PREVENTION APPROACHES TO EMDEs

EMDEs represent a specific challenge to preventing drug use and risky behaviors. One possible theoretical perspective to explain the association of EMDEs and drug use and harm is routine activity theory. Routine activity theory states that the social context of a harmful event (e.g., violence or sexual risk-taking) must "allow" the event to occur (Felson, 1987; Felson et al., 1997; Sampson & Raudenbush, 1997i.e., the undesired or disruptive event must be either accepted by the context or the lack of guardianship). An international survey data from 15 countries reveals that communities with low cohesion are at higher risk for violent predatory victimization (Lee, 2000). This theoretical perspective applied to problems associated with EMDE settings suggests that at-risk behavior will occur most often in places that encourage social contact among at-risk populations and in which there is an absence of guardianship by enforcement agents, e.g., local police or supervision by the EMDE event itself. In this context, EMDE events serve as locations where at-risk populations may interact while consuming intoxicating and illegal substances (Giancola et al., 2003; Gruenewald et al., 2006; Haines et al., 2005).

There are a number of bar studies that suggest how this specific social context may set the stage for drug use in club settings. For example, bars and other alcohol-licensed outlets have been highly associated with criminal activity in general (Homel & Clark, 1994; MacIntyre & Homel, 1997; Roncek & Maier, 1991; Sherman et al., 1989). In this connection, it is important to note

that many EMDE venues are located at regular commercial bars which are licensed to sell alcohol. A possible explanation for this connection between drinking context and risky behavior occurring within the bar settings may be that the types of social controls that occur in most community settings, because of cohesion within the community, including cohesion around rules, is not present in clubs. Bars, clubs, and other alcohol outlets may represent mini-communities exhibiting low levels of cohesion (MacIntyre & Homel, 1997). Club and other bar settings may be difficult environments for managers to control and to maintain control over, given their attraction to a wide variety of clientele.

Much of prior research on environmental approaches has focused on preventing alcohol-related problems in licensed establishments. Although it is recognized at the outset that alcohol and drugs have quite different use patterns, related policies, and associated risks, an environmental prevention approach is appropriate for addressing drug use and related concerns for a number of reasons. First, there is evidence that environmental context (both physical space of the event and social characteristics) can increase or decrease drug use and behavioral risks. In Switzerland, Chinet et al. (2007) found that patron substance use was strongly impacted by the characterization of an event as "open air" or "pure techno" in nature (Roncek & Maier, 1991).

Many prior studies have focused on environmental context and aggressive or violent incidents. For example, physical characteristics of bars such as unclean conditions, poor ventilation, high levels of noise and music, low comfort, and high density of patrons are associated with violence (Graham et al., 1980; Homel & Clark, 1994; Homel et al., 1992). Physical contexts of bars are also determined by social characteristics that, in turn, influence risky behaviors in bars and clubs. For example, predominant patronage by males, high numbers of intoxicated patrons, and high boredom are related to violence/aggression (Graham et al., 1996). Characteristics of management (e.g., aggressive and unreasonable bar staff) also may affect the level of violence and crime that occurs on premises (Graham et al., 1996; Stockwell et al., 1988).

Environmental approaches to prevention are not based upon identifying and targeting specific individuals even though individuals can be quite disruptive in for-profit environments like clubs. Rather, environmental approaches focus on changing the social, economic and physical environment, and offer club owners and managers an approach that is less disruptive. They may be more motivated to use environmental approaches to reduce drug use and other risky behaviors on premise because such occurrences are not profitable for business, increase the risk of city and police interference, and create problems within their own neighborhood context.

Patrons using drugs may be less likely to drink alcohol and profits from serving alcoholic beverages may suffer. Also, clubs that become identified as tolerating or promoting drug use, may discourage more desirable patrons (who may spend more money within the club on legal products). Concerns about licensures and revocations are relevant should drug use become prevalent within the club. Difficulties with law enforcement can occur if a club becomes known as a "hot-spot" for drug activity. Legal liabilities are also present: club owners and managers become responsible for handling attendees that overdose while on premises. However, clubs need to maintain an overall image that is attractive to the emerging adults with disposable income. Overly restrictive and controlling policies can result in losing the customer base. Thus, the club owners/managers are forced to maintain a balance between overly restrictive activities that discourage patrons from attending and policies that are too permissive.

In a real sense, as clubs do not obtain any revenue from drug sales (in fact, under the existing laws they are at risk if their patrons are involved with drugs), the higher the patron drug use, the greater the motivation for club owners and managers to seek voluntary, non-enforcement-based prevention interventions. Together, these reasons provide a powerful motivator for club

owners and managers to pursue environmental strategies that will keep behaviors in check without appearing overly strict.

DESIGN OF A PREVENTION APPROACH FOR MUSIC VENUES

Based upon the success in reducing alcohol-related harms at licensed premises, a comprehensive set of environmental interventions, designed to be mutually supportive and interactive, is proposed. These strategies are believed to provide the greatest potential for developing an efficacious approach. The environmental prevention approach presented here is composed of three intervention domains: (1) Mobilization, (2) Strategies for the Exterior Environment, and (3) Strategies for the Interior Environment. An overview of the environmental intervention strategies to reduce drug use and related risky behaviors is presented in Table 1. Each domain contains components for which there are environmental strategies, and further description of the implementation features are described in the goals. Mechanisms for delivering the intervention are identified, and can occur through host meetings, staff training, and technical assistance to ensure support for the change. Hosts are defined as managers and owners of clubs, as well as promoters and organizers of events held in the clubs. Staff includes security staff, bartenders, and waiters. Assessment of the effectiveness of an intervention is possible through systematic collection of data to determine the efficacy of the intervention. Table 1 also proposes sources of data that could be used. The major sources of data described here are host and staff surveys, public meeting minutes, observational checklists, and portal surveys. Observational checklists that provide indicators of club environment that are clearly visible are potentially valuable both as a research tool and as a management tool. Portal surveys involve conducting brief interviews/surveys of patrons as they enter and exit the club, and the collection of biological assays for drug use (Voas et al., 2006). Because of their expense and intensity, portal surveys are probably only feasible as a research tool for determining efficacy of the intervention.

(1) Mobilization

Rationale and potential efficacy for mobilization as a component—Numerous studies have identified the importance of including major stakeholders in the community for environmental prevention strategies to succeed (Graham & Chandler-Coutts, 2000; Holder & Moore, 2000). Acceptance and support of major stakeholders for successful interventions is exemplified by environmental strategies such as Responsible Beverage Service (RBS) interventions that involve the managers and/or owners of the licensed establishments (Saltz, 1987). In a successful community mobilization study (Graham et al., 1997), three major strategies were developed for a participatory plan: (1) the creation of a Community Forum involving all managers and owners of clubs and bars, (2) the implementation of risk assessments, Model House Policies, and a Code of Practice, and (3) regulation of licensed premises by police and liquor licensing inspectors.

The goal of this intervention was to reduce violence and disorder associated with the high concentration of licensed establishments in the resort town of Surfers Paradise in Queensland, Australia. This project and its replications in three North Queensland cities (Cairns, Townsville and Mackay) achieved reductions in violent incidents per 100 hours of observation from 9.8 at pretest to 4.7 in Surfers Paradise and from 12.2 at pretest to 3.0 in the replication sites (Hauritz & Homel, 1998). Thus, we conclude that community mobilization of key stakeholder is a necessary first step with licensed premise policies to stimulate changes in the club environment, staff practices, and patron behaviors.

Depending upon the local situation, specific organizations can generally play an important role in mobilization to deal with the drug problem at EMDEs. Examples include the local hospitality organization of owners and managers of clubs, the local police and/or alcohol investigators

responsible for enforcing alcohol service and drug use laws and public health or drug coalitions and activists. Public health activists or anti-drug coalitions can provide mobilization, staff training and local safety and health policy as well as co-ordinate enforcement to support prevention programs adopted by club managers. Local leaders, including elected officials who have concern with drug abuse, can play a catalyst role by stimulating action. Enforcement of street crime, violence, and drug sales, may be given local priority and thus impact local clubs, encouraging pro-active prevention to reduce drug risks. Although enforcement (e.g., code, regulatory, law) should not be the central feature of any environmental strategy, it can be an important factor in motivating club managers to take preventative action at their venues.

Mobilizing hosts to participate in the interventions requires an establishment of trust. There are several reasons why hosts can be interested in participating in a prevention project. Customers who use drugs are less likely to buy alcohol and thus the hosts stand to lose money on such patrons. Also, drug users may cause problems for the club owners and managers (e.g., drug sales, police presence, medical emergencies). These problems may create an uncomfortable environment for non-drug users and may increase exposure of non-drug users to the dangers associated with drug-using patrons. Ensuring that their business and alcohol licenses are in good standing and that their club maintains an appropriate profile in the local area is another motivator for doing all that they can to ensure that lawful behavior is taking place in the club. Participation in the program should be seen as an opportunity to ensure that they will be in full compliance with regulatory authorities.

Key elements and procedures for mobilization—A typical community program might, for example, proceed along the following steps:

1. Local public health activists create an EMDE Action Group which conducts an observational survey of EMDE clubs to document the levels of risks and problems.

2. The survey information is used to create increased support for monitoring drug use and other risky behaviors at clubs.

3. The survey information is also used to mobilize club owners and managers to motivate them to become involved in a prevention program and thus adopt the policies and procedures described in this article.

4. The EMDE Action Group continues to work with the owners and managers group to provide training and technical assistance as necessary. The Action Group continues to conduct environmental surveys to ensure that programs continue and that they continue to be effective.

Host mobilization meetings can: (a) review issues and concerns of the managers with drug and alcohol problems at their venue, (b) review local data about the nature and extent of problems in such venues in general and their club in particular (if such data are available), (c) involve hosts in discussing the issues, (d) present any proposed intervention programs followed by a discussion of their reaction to implementing them, and (e) obtain management commitment to implementing the countermeasures.

These steps successfully negotiated can be referred to as the engagement process.Following the engagement process with hosts, the next step is to initiate a training and technical assistance plan. This step can only be achieved by collaboration and partnership with the club hosts and the staff. To ensure the engagement of the staff, there must be clear support by management without raising concerns that problems within the environment will be viewed as "caused" by the line staff and result in hassles that are not supported by management. Specific elements that need to be addressed include: (a) establish a schedule of follow-up technical meetings with managers to provide assistance in the development of specific, written in-house policies which

support the training objectives for staff, (b) review with management and gain the approval of management for the staff training program and the acceptance of a training schedule, which will ensure that all staff members receive instruction, (c) assistance with the club publication of its no-tolerance policy concerning drug use and drug sales, while preserving the fun atmosphere of the music venue, (d) presentation and approval of proposed observational checklists for managers or staff to use to gauge the implementation of the interventions, and the scheduling of training in the use of the forms, and (e) assistance in reviewing who is attracted to the club by advertising and marketing.

Another element of mobilization can involve working with local commissions or governmental bodies with jurisdiction over licensing, enforcement, and roles in local neighborhood dispute management. It is key that such governmental authorities are aware of the prevention initiative, provide support for initiative, and contribute to the overall effort. Prior research suggests that hosts are more likely to succeed when there is concern about potential enforcement of existing laws and regulations by governmental oversight departments or law enforcement (McKnight & Streff, 1994).

(2) Strategies for the Exterior Environment

Rationale and potential efficacy—Routine and obvious staff surveillance and rapid response to undesired events has been shown to be an effective crime deterrence strategy (Homel & Clark, 1994; Homel et al., 2001). The exterior physical environment of a club is a key contributor to increased (or decreased) risk of drug use and associated problems. Interventions external to the club venue refer to three aspects: (1) exterior physical environment of the club including lighting and parking, (2) security or door staff monitoring to enforce external space around the club, and (3) entrance security to check customers as they enter. Our prior work suggests that clubs located in industrial settings with little or no street activity were at increased risk for drug use in the clubs (Miller et al., 2008a).

One strategy for controlling drug use and drug-related problems on premises is to prevent drug users from entering the club. Previous studies have demonstrated the feasibility of training staff to recognize alcohol and drug impairment. Many prior studies have focused on training staff to recognize the patrons who are obviously alcohol intoxicated. Signs that appeared at BACs > .08% were: loss of dexterity, balance, or distance perception; slurring of speech; hostility; extreme profanity; and a total lack of inhibition.

To validate such indicators of alcohol impairment, a total of 962 subjects self-dosed on alcohol in a party environment, while 438 were served alcohol-free drinks. Some 24 observed signs of physical appearance and behavior were found to discriminate BAC ranges. When these signs were described to non-researcher observers, they became significantly more accurate in judging impairment than observers who had not been provided the information (McKnight & Streff, 1994; McKnight & Voas, 1991).

Another study that specifically trained door security staff to recognize signs of drug impairment and to limit access was reported by the STAD Project, Stockholm, Sweden (Wallin et al., 2005). Based upon an identification of key behavioral features for persons using drugs, the STAD Project developed a staff training program for recognizing sizes of drug impairment. Indicators of obvious drug impairment were developed by an expert panel of police, medical professionals, and club security. One of the features of the training was a video which showed professional actors simulating the obvious behaviors. Following the training, an evaluation of the effects of the training on door staff drug recognition and intervention was undertaken, using a variation of the "pseudo patron" methodology used to test RBS training for alcohol as described by Toomey et al. (1998) and Wallin and Andréasson (2004). Following training, there was an increase in the rate at which trained doormen intervened in cases of obviously

drug-impaired patrons. In addition to those that intervened, an even larger number of trainees reported in follow-up interviews that they recognized the signs of drug impairment, but did not intervene due to the lack of a written club policy or intervention, or uncertainty about how to handle drug-impaired patrons.

A number of programs in the UK have been developed specifically to train door staff on relevant laws, the effects of alcohol and drugs, fire safety, first aid, and communication skills (see MCM Research, not dated) in order to keep problem patrons out of the bar. The *Safer Bars* program in Canada includes a risk assessment (Graham, 2000) and a training component (Coutts et al., 2000) for owners, managers and all staff. The program is designed to increase early intervention by staff, improve teamwork and staff abilities in managing problem behavior, and reduce the risk of injury to patrons (Graham et al., 2004). The effective Surfers Paradise project in Australia and its replications (Hauritz & Homel, 1998; Graham et al., 1997) implemented training programs in crowd control and security for door staff, as well as security management training for licensees and police that included management skills, staff recruitment, conflict resolution, venue security, civil and criminal law related to the operations of public venues, major incidents and emergencies, and incident reporting (Graham et al., 1997). Based upon systematic observations, improvements in staff behavior and bar management included friendlier bouncers, more systematic checking of identification at the door, an increase in bouncers controlling areas outside and inside the establish (Hauritz & Homel, 1998; Graham et al., 1997).

Key elements and procedures for exterior environmental strategies—Club managers and owners can be provided a checklist of security and safety concerns in the external environment that can be a source of risks to the patrons and to the liability and operational concerns of the management. Some of these issues (e.g., increased lighting) may be a one-time "fix" while others (e.g., increased security in around the entrance to the clubs) require ongoing policies. Clubs participating in the prevention program are encouraged to establish written policies for their staff and ensure that these policies are communicated to the staff. In addition, there is a need to supervise and reinforce these policies on an ongoing basis.

The physical space surrounding the club reflects general safety conditions of the club and provides an indicator of the type of protection provided patrons entering and exiting the club environment. Elements of exterior security that are considered include sufficient lighting in and around the club entrance(s), availability of adjacent/close parking (especially off-street), and oversight by club security of parking and outdoor entrance to the club. By observing and assessing the standard practices through an observational checklist, clubs can be provided with guidance as to the strengths and weaknesses of the current physical environment. Guidelines can be developed to assist the club in undertaking these physical risk audits and making necessary changes. Host meetings concerning the external environment can provide specific information derived from the observational checklists for each specific club to go over the strengths and weaknesses of their external environment related to risks. An environmental risk assessment provides the means for supporting the clubs in making changes that will reduce their risk of drug use, drug sales, and associated problems in and around their venue.

Door staff conduct routine surveillance of the physical space around the club. The purpose of routine staff surveillance is to provide security in and around the parking area to reduce the opportunity for drug sales as well as reduce risk of physical violence and sexual activity. A surveillance routine should be established for security staff such that once each 60 minutes *on an irregular* schedule during the evening, at least one of the security staff checks the parking lot and surrounding area to detect, report, and intervene as appropriate to policies established by the club manager, when such events as (drug sales, sexual activity in parked cars (including consensual activity), and violence, occur. Appropriate intervention includes encouraging or

demanding that undesired activities (e.g., drug sales or sexual activity) cease, or actually intervene (call police) to stop a violent interaction.

All staff should be capable of detecting potential customers who exhibit apparent signs of drug impairment and should be provided with policies regarding how to handle patrons who exhibit such signs. Clearly policies need to differentiate between possible drug use and serious impairment. Furthermore, policies are needed to address apparent drug "exchanges" and conversations that are overheard concerning drug use. To assist staff in developing drug recognition skills and appropriate intervention strategies, staff training should be provided to all staff coming in contact with patrons. This training would assist staff in developing awareness of signs of drug use, signs of drug impairment, and signs of serious drug emergencies. In addition, training can provide staff with awareness about the types of drugs that are currently popular among patrons in their community and popularized slang terms for the drugs. Although some staff may be expected to be familiar with these signs, establishing a set training procedure provides more systematic training and ensures that popular, but inaccurate perceptions are countered about drugs, including how best to handle emergencies. Because staff turnovers may create a difficult environment for training in a "classroom mode," efforts must be made to provide flexible ways to impart this knowledge. For example, basic program concepts could be distributed to managers on DVDs which could be made a part of the hiring process for new employees. This could be augmented with specific information for that particular club. Furthermore, by recording the initial training, employees hired after the initial training can receive the training via the recording, ensuring that all employees receive a baseline of training information. In addition, ongoing technical assistance would ideally be made available to the clubs so that as changes in the drugs occur and/or new questions arise, these issues could be addressed. Although rare, drug emergencies that occur in a club setting will provide an opportunity for all staff to learn from the incident and to reassess how well the staff responded to the incident. The costs for on-going training and technical assistance can be a natural part of local prevention initiatives such as this. In some communities fees from local business licenses to operate such clubs are used for training. Local foundation, or state or federal drug prevention funds are also potential sources.

In addition to drug recognition skills and appropriate intervention strategies for drug-impaired individuals, a protocol for space surveillance to reduce other risky behaviors that may or may not be associated with drug and/or alcohol use is needed, particularly, management approaches for problem behavior, including sexual risk taking and aggression, and enforcement of club policies about drug use on premises. Thus staff training for licensed establishments should emphasize indicators that potential customers are under the influence of drugs, and potential alternative approaches to limiting access that are consistent with written club policy. Hosts should be encouraged to attend staff training in order to understand and support staff, as well as explain club written policies. Host participation in staff training is essential as they are responsible for supervising staff and therefore need to be familiar with staff responsibilities in a drug-free environment as well as the skills required.

(3) Strategies for the Interior Environment

Rationale for strategies focusing on interior environment—Much of what is known about interior environments and the influence on human behaviors can be derived from studies on alcohol use. Research has shown that certain aspects of the physical environment of a licensed establishment increase the likelihood that drinking will be associated with problems (Graham et al., 1997), the general characteristics of the barroom environment (Homel & Clark, 1994), and the general type of bar (Gruenewald et al., 1999; Stockwell et al., 1992). The focus on high-risk physical environments, such as licensed premises, has several advantages. It can have a broader impact than individual approaches on persons who are at high risk. For example,

environmental approaches not only provide additional safeguards for individuals who would potentially engage in the risky behavior, but also to bystanders or potential victims of those engaging in risky behaviors. As one example, tempered glass has been recommended as an alternative to regular glass in licensed premises in order to prevent cuts and other injuries when glass vessels are used as weapons in bar fights (Shepherd, 1994). A randomized control trial found that injuries to customers and bar staff actually increased when toughened glassware was used (Warburton & Shepherd, 2000), suggesting a safer alternative to include paper or plastic drink containers.

Delewski and Saltz (1990) concluded that server training for licensed establishments alone was unlikely to have a significant impact upon patron intoxication, and that management must be prepared to alter policies that lead to over drinking or increase the risk of drug sales or use within the venue, and to present these policies in written form for staff and customers. Shults and colleagues (2001) concluded that responsible beverage service could be effective in reducing patron intoxication "… when accompanied by strong and active management support." Stockwell (2001) concluded that house rules and management provide essential support for RBS and, therefore, many RBS programs have included training for managers in the implementation of standard house policies or have used a "risk assessment" approach to policy development (Mosher, 1990; Saltz, 1987). For example, the Australian "FREO Respects You" project (Lang et al., 1998) included a House Policy Checklist for assessing risks covering the following topics: providing positive incentives for avoiding intoxication (e.g., food, cheaper prices for low or no alcohol drinks), avoiding incentives for intoxication (e.g., drink specials), policies to minimize harm (e.g., increasing safe transportation options) and policies to minimize intoxication (e.g., slowing then refusing service to intoxicated patrons). Wallin et al. (2003) found that training and house policies reduced violence injuries in a downtown area by 29%. Toomey et al. (2001) found a dramatic impact of house policies on serving intoxicated individuals. In this study, nine control bars were compared with five intervention bars in which management had adopted between 14 and 18 model house rules for responsible beverage service. This study found that sales to pseudo patrons (i.e., actors pretending to be intoxicated) dropped by 46% in the intervention bars, compared to a slight increase in the control bars.

Rationale and potential efficacy—There are a number of published evaluations of successful experiences in the use of RBS in reducing alcohol intoxication and associated problems including drinking and driving and violence (Toomey et al., 1999, 2001). Staff training for licensed established has been most comprehensively described by Mosher (1990). Responsible Beverage Service (RBS) programs (also referred to as Server Training or Server Intervention programs) focus on attitudes, knowledge, skills and practices related to serving patrons (see Carvolth, 1995; Toomey et al., 1998), potential roles of local police (Marsh & Kibby, 1992; Tomsen, 1997), and seek to increase the ability of bar staff to manage problem behavior (Homel et al., 1992; Wells et al., 1998). Evaluation of RBS programs have shown effects on alcohol serving practices, e.g., servers are usually willing to intervene with customers who are visibly intoxicated (Gliksman et al., 1993). Training tends to decrease bad serving practices such as "pushing" drinks and increase "soft" interventions such as suggesting food or slowing service. The findings suggest that RBS training, if supported by actual changes in serving policies of licensed establishments reduce heavy consumption and high risk drinking. Staff who were less permissive of deviant behavior and friendlier in their interactions with patrons are more effective (Hauritz & Homel, 1998). Such interventions have been shown to reduce violence (Wallin et al., 2003). Moreover, time series analyses of mandatory server training suggest that training is associated with fewer visibly intoxicated patrons (Dresser & Gliksman, 1998) and fewer single-vehicle, nighttime, injury-producing crashes (Holder & Wagenaar, 1994).

Training will also include actions to reduce violence and sexual risk. A substantial factor in the prevention of aggression, sexual or other, is that victims are themselves frequently intoxicated or drug-impaired when such incidents occur. For example, a study on a university campus found that approximately one-third of the victims of sexual assault were incapacitated because of alcohol or drugs (Meilman & Haygood-Jackson, 1996). Staff as well as third parties often play a role in controlling aggressive and other problem behaviors in licensed premises (Wells & Graham, 1999), at fiestas and other occasions (Perez, 2000) and among adults generally (Graham & Wells, 2001). Club staff, without appropriate club policy and/or training, can actually encourage sexual behavior among customers or reduce such behavior. For example, in our prior studies, some bar tenders encouraged young women to remove their underwear (with a promise of free drinks or simple encouragement) in order to hang their underwear behind the bar, thus promoting a sexually-charged atmosphere in the club.

Key elements and procedures for interior environmental strategies—Prevention strategies within the club include (a) written club policies regarding expectations of staff action, duties and responsibilities, (b) interior physical space monitoring, and (c) staff action and management support for detected problems.

a. Written club policies. Hosts should be supported in promoting each club as a fun and safe environment while establishing a no-tolerance policy concerning drug use and drug sales. This approach should be expressed via written in-house policies, which support the actions of staff to detect problems and intervene. A host working meeting can be used to establish the type of policies that are needed to create a safe club environment. Written policies should commit the establishment to practices which establish a no tolerance of drug sales and use within the venue, and specifically identify a concern of the licensed establishment to reduce drugged driving, violence, and risky sex. Policies can be publicly displayed, adding to the impact on the club environment. Strategies for implementing these club policies can be written and supported by staff involvement and training.

b. Interior physical space monitoring. An observational checklist provides an assessment of interior space risks and a baseline measurement that can be used by management and staff to locate existing problems, and to inventory changes which have been made over time. Risk elements of the physical space in clubs include eliminating or close surveillance of private rooms to reduce opportunity for drug sales to occur, or reduce risks of sexual activity or violence. This requires regular monitoring of restrooms and unlighted or low light spaces by all club staff, but especially security staff.

c. Management and staff action. Both staff and management should be capable of undertaking action in support of the club policies. Staff and host training on drug recognition and appropriate intervention strategies were described above under the external environmental approaches, and both door staff and inside staff should receive this training. This model of staff training has been previously successfully used to control service to alcohol-intoxicated persons, but we are extending this model to drug-impaired interventions. Six basic elements of staff training include (1) club written policies and standards concerning drug use and sales and related behaviors, (2) signs of obvious drug impairment, (3) strategies which are consistent with club policy concerning preventing obviously drug-impaired persons from entering the venue and for removing them, if necessary, (4) alternative approaches to intervene with obviously drug-impaired patrons including handling customers who have fainted, passed out, or present serious medical problems, (5) actions to take to reduce the risk of violence both in customers as well as staff, and (6) actions to reduce sexual risk taking including defining unacceptable explicit sexual behavior by customers and unacceptable behavior of staff.

Effective staff training can follow standards established by Mosher et al. (2002) to include role-playing or other skill-building techniques to manage customer interactions and to respond to customer behaviors. This training can be related to controlling drug use, reducing sexual risk taking and aggressive behaviors on premises. Not only is controlling patron behavior an important part of the training, but also providing staff with guidelines to their own behavior is an important part of controlling potentially risky problem behavior, such as aggressive behavior, that escalates as a result of patron-staff interactions, or patron-staff interactions that encourage sexually explicit behaviors by customers. A variety of approaches will be applied at one time (e.g., training, staff enforcement on club policy, and reducing environmental risks) to enhance effects. Finally, most approaches targeting high-risk environments are generally perceived as acceptable across cultures and are, therefore, readily adopted.

POTENTIAL MEASURES OF EFFICACY ACROSS DOMAINS

Table 1 shows for each of the three domains of environmental prevention interventions, (a) Mobilization, (b) Exterior Environment, and (c) Interior Environment, examples of potential measures to document the efficacy of the strategies described within each domain. Such measures provide a means to evaluate the level of success of interventions in meeting the specified goals. For Mobilization, evidence of level of support and involvement can be taken from the attendance at and minutes from regular meetings of the local regulatory commission. Special attention should be given in looking at attendance concerning the participation of management and event promoters. In addition, there should be regular meetings with owners and managers of establishments as well as EMDE promoters and organizers. These more targeted meetings and the extent of attendance are indicators of involvement and participation. In addition, host (owners, mangers, and promoters) surveys can be used document extent of support of the EMDE prevention effort.

Exterior environment is designed to target the physical environment immediately around the event, as well as level of monitoring and entrance security and screening. Observational check lists, as well as host and staff interviews can be used to document level of compliance with the design of prevention strategies that target the exterior environment. Observational check lists can be used to specifically document neighborhood condition, residential/commercial/ industrial, lighting, street activity, club noise, access to public transportation, street parking (ease), parking lot, parking cost, security at parking lot, and security in street. In addition, check lists can be used to record outside drug use and percentage of crowd drug-impaired to estimate the effectiveness of staff door monitoring, as well as sufficient outdoor lighting and routine staff surveillance of parking areas. Host surveys involving owners/managers can address a number of different concerns: the nature and extent of club policies concerning drug use; perceptions of implementation of policies; concerns about drug overdoses; drug use/sales on premises; attracting wrong crowd; surrounding community concerns; concerns with police. Prior training experiences can also be obtained from host surveys (e.g., training on drug recognition, handling drug-related problems). Memos of understanding for implementation (MOUs) between prevention staff and owners, managers, and promoters provide further evidence of commitment to the strategies designed for the exterior environment.

Interior environmental strategy efficacy is concerned with the physical space itself, written club policies to guide management, staff, and patrons, and actual action by staff inside the club to fulfill these policies. Observational checklists can be used inside the club to document the estimated percentage of the patrons who exhibit drug-using behaviors, severely drug-impaired patrons, as well as the rate was offered drugs, saw drug use/exchanged (types), overheard a conversation about drugs, staff confronting drug user, drugs in bathroom, and staff drug use. The efficacy of the interventions in achieving written policies can be documented by the actual content of the policies themselves. Observational checklists can also document the existence

and posting of drug policies as well as specific prevention statements such as drinking age limits, alcohol advertisements, maximum capacity, smoking restrictions if any, alcohol serving policies and club policy about drug use.

Such checklists can be used to document undesired events within the club setting including patrons making out in obvious/visible intercourse, visible condoms, evidence of sex in bathrooms, verbal aggression, physical violence, evidence of fights in the bathroom, and verbal aggression in the bathroom, as well as staff and patron negative interactions. Observational checklists can also be used to document cover charge and price, cost of drinks, interior lighting, ventilation, number of rooms required for monitoring, seating, crowd density, type of music, themed event, special event/DJ, noise level, private rooms, VIP rooms, visibility of VIP, VIP room cost, as well as the level of security including ID checks, presence at door, pat downs, bag checks, metal detector, staff/patron negative interactions, and if security is wearing uniform and using headsets for communication.

Staff interviews can be used to obtain key efficacy information concerning level of understanding, perceived skills, and knowledge of club policies concerning sexual behavior in clubs, perceptions of level of policy implementation, concerns about overt sexual activity, sexual harassment on premises, prior training on handling sexual behavior problems in club, as well as staff understanding of policies concerning aggressive behavior in club, perceptions of level of policy implementation, concerns about aggression/patron disruption, and level of perceived skill in handling aggressive behavior. These interviews can also collect information concerning staff number and type, as well as level of training.

If resources exist, a portal survey protocol can be used with patrons arriving and leaving the club. If conducted, such portal surveys (see Voas et al., 2006) can employ an oral assay test, which is analyzed for a number of different drugs and also identifies the quantity of drugs used at entrance and exit. Anonymous, self-report surveys conducted as part of the portal methodology provides additional information about patron characteristics, as well as self reports (exit only) about high risk events including aggression and sex within the EMDE. Information from such anonymous surveys can provide data about patron experiences including made to feel uncomfortable, unwanted rubbing/fondling, pushed/shoved/grabbed, hit with something that hurt, threatened into sex, forced into sex, make-out/heavy petting, or had sex during the event.

CONCLUSIONS

Although there are no existing precedents for prevention strategies designed to reduce drug use and associated problems in clubs that feature EMDEs, extending comprehensive strategies that have been implemented in bar settings to this environment is appropriate. Most clubs that feature EMDEs are licensed to sell alcohol, and thus our knowledge about these settings provide guidelines for addressing drug use and other risky behaviors. This article outlines a set of comprehensive strategies that have a foundation in successful interventions for reducing alcohol-involved harms (see Babor et al., 2003, for further discussion). Although such approaches are not yet tested in licensed establishments to reduce drug-related harm, the prior success of such environmental approaches increases the potential for efficacy. These strategies concern mobilization of clubs as well as interventions in the exterior and interior space to reduce drug problems.

Environmental approaches to reducing drug-related problems associated with EMDEs have real potential to be effective in reducing risks and improving safety of patrons, based upon the success of such strategies in reducing alcohol-related harm in similar settings. In addition, these strategies have two real advantages. First, clubs are designed to be profitable while attracting

young adult customers to a fun environment which is drug-free. Thus it is the direct interest of the owners and managers to reduce problems, which can increase their legal risks and liabilities as a problem site. Clubs make money from selling alcohol and food, and there is no profit from drug sales or other risky problem behaviors. In fact, drug use and related risky behaviors can cost clubs money, and increase their vulnerability to official sanctions and liabilities. Secondly, as has been demonstrated in environmental approaches to reducing alcohol-related harm, these strategies can be easily maintained at low cost by each licensed establishment if there is local support for prevention and regulatory efforts to reduce drug use and harms, especially in the emerging adult population. There are no new start-up costs to a participating establishment if a prevention effort has been successfully implemented as the strategies are supported by written policies and thus support action by staff to reduce problems. However, there are potential maintenance costs for the establishment, and the community to maintain a level of effectiveness over time and long-term fiscal support should be a part of local planning.

For the community, these strategies are consistent with other successful, and comprehensive environmental strategies for reducing alcohol and other drug problems for the community. Environmental approaches promote local efforts directed to affect social and physical contexts and settings that gives rise to problems. Collective risk is thus reduced through interventions affecting community processes that influence alcohol and drug use. This has potency because substance use occurs largely within community contexts. See discussions in Gruenewald et al. (2003), Holder (2001), and Johnson et al. (2007).

There are particular challenges that such a proposed prevention approach faces in reducing substance-related harms in EMDEs. Therefore, despite the desirability of maintaining a drug-free environment, there are barriers for host participation and control over the drug use of patrons. Hosts want to attract business, and any indication that the club is no longer a "fun place to be" will hurt revenues. Overly zealous actions to control drug use might decrease attendance by patrons and impact profit margins for the club. Another barrier to managing drug use on premises is that drugs are easy to conceal upon entry into the club. Barriers to clubs controlling the environment have emerged because there has been a lack of solid evidence that different strategies will work to control drug use associated with club attendees. This article has attempted to present an environmental approach to reducing such problems, which can provide the basis for a real efficacy test. The good news is that there is substantial evidence of potential efficacy in licensed establishments.

Acknowledgments

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Table 1

Overview of Environmental Intervention Strategies to Reduce Drug Use and Risky Behaviors in Clubs

Domains Influenced by Environmental Strategies	Goals	Mechanism for Implementing the Intervention	Data Sources for Research on Efficacy
Mobilization **A.** Club owners/ managers **B.** Regulatory and community agencies (city code enforcers, permit offices, police, community liaison groups)	• Conduct environmental observational surveys to measure relative risk • Build interest to sustain involvement of hosts • Provide rationale for involvement • Ensure tangible benefits for involvement	• Present survey data that demonstrates risk to community • Enlist support of regulatory agencies	• Meeting minutes • Number of attendees • Representation of management and key staff at training and meetings • Public or city regulatory groups that support and meeting minutes from such regulatory bodies
Exterior Environment			
A. Physical Environment	• Improve safety through physical changes (e.g., lighting) • Remove physical barriers that block views of patron movement in exterior • Develop awareness of neighborhood context for club that influences risks	• Host meetings • Technical assistance	• Observational checklists • Host & staff interviews • Memos of understanding for implementation (MOUs)
B. Staff Monitoring	• Staff training on security of external environments including drug-related behaviors (e.g., sales) • Routine surveillance is conducted	• Staff training • Host meetings • Technical assistance	• Observational checklists • Host & staff interviews • MOUs
C. Entrance Security	• Staff training on signs of drug use and drug-related concerns	• Staff training • Host meetings • Technical assistance	• Observational checklists • Portal surveys

Domains Influenced by Environmental Strategies	Goals		Mechanism for Implementing the Intervention		Data Sources for Research on Efficacy	
	•	Check for drug-impaired patrons				
	•	Policies for excluding "problem patrons" (drug sales, drug users, weapons)				
Interior Environment						
A. Interior Space	•	Monitoring of interior space for drug use and drug-related problems	•	Host meetings	•	Observational checks
	•	Monitoring of interior space for risky sexual behavior	•	Staff training	•	Host & staff interviews
	•	Monitoring of interior space for aggressive behaviors	•	Technical assistance	•	Portal surveys
	•	Training of staff to detect drug-impaired patrons				
	•	Training for medical emergencies related to drug-impaired patrons				
B. Written Club Policy	•	Policies on drug-impaired patrons, serving alcohol, handling drug-related problems and emergencies	•	Host meetings	•	Documentation of written policies
	•	Policies on drug sales or exchanges in venues	•	Technical assistance	•	Host & staff interviews
	•	Policies on sexual risk taking			•	Signage
	•	Policies on handling aggressive behavior			•	Portal surveys
C. Staff Action	•	Manager enforcement plan for ensuring staff	•	Staff training	•	Pre/post staff training evaluation
			•	Technical assistance	•	Observational checklist

Domains Influenced by Environmental Strategies	Goals	Mechanism for Implementing the Intervention	Data Sources for Research on Efficacy
	adherence to policies		• Portal surveys
	• Collaboration among staff to support and enforce club policies		