Party Subculture or Dens of Doom?
An Epidemiological Study of Rave Attendance and Drug Use Patterns Among Adolescent Students

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Abstract-Based on 1,853 questionnaires derived from adolescent students participating in the 1995 Ontario Student Drug Use Survey, this article describes the prevalence of rave attendance and the drug-use profile of rave attendees and those participating in similar activities (i.e., bush parties). The results showed that 13% of the sample attended a rave during the 12 months before the survey. Although rates of drug use were higher among rave attendees than nonattendees, differences were more related to participation in other recreational activities. The drug-use pattern for one-third of rave attendees (those who did not attend similar activities, i.e., bush parties) was not dramatically different from those who attended bush parties only. However, for two-thirds of rave attendees, drug use was significantly elevated. Although rave attendance is not prevalent, experienced drug users are attracted to raves, as earlier generations of drug users were attracted to rock concerts. Consequently, although the size of this population is relatively small, the implementation of harm reduction strategies is appropriate.

Keywords-adolescent students, drug use, Canada, population survey, raves

One of the recent phenomena of contemporary youth culture is “raves,” large underground all-night dance parties characterized by loud “techno” music. Although the venue and character of raves may vary, they are typically held in large, abandoned or rented warehouses and advertised by word-of-mouth or in a limited fashion. Although it is a seemingly new phenomenon, Beck and Rosenbaum (1994) note that the rave as a generic dance scene can be traced back to events occurring as early as 1965. Raves have come under scrutiny in North America (Beck & Rosenbaum 1994), Europe (Ayer & Gmel 1996; Forsyth 1996; Henry 1992) and Australia (Solowij, Hall & Lee 1992; Solowij & Lee 1991). The primary reason for this scrutiny is the documented drug use that is associated with rave attendance and reports of drug-related deaths (Henry 1992; Dowling, McDonough & Bost 1987).

Much of the attention regarding raves has focused on the use of MDMA or “ecstasy,” a synthetic amphetamine derivative (3,4 methylenedioxytnethamphetamine), known colloquially as XTC. Originally developed as an appetite suppressant in 1914, MDMA is unique in that it produces both stimulant and hallucinogenic effects (Dowling, McDonough & Bost 1987). MDMA users typically experience euphoria, insightfulness and sociability (Beck & Rosenbaum 1994). There are also unpleasant effects such as loss

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of appetite, grinding of the teeth, and more rarely, nausea, muscle aches and ataxia. Sweating, tachycardia and hypertension are common. Because rave dancing is physically vigorous, drug effects are compounded by exertion. MDMA can also cause convulsions, collapse, cardiac and pulmonary problems, hyperthermia, and renal failure, which may result in death. For this reason, rave attendees are often advised to drink large amounts of water (Henry 1992).

Existing rave studies have been typically based on purposive samples of attendees. Several descriptive inferences can be made from such studies. First, rave attendees report elevated rates of drug use compared to nonattending populations (Ayer & Gruel 1996; Forsyth 1996). Second, rave attendees report taking a wide array of drugs. For example, Forsyth (1996) found that among 135 Glasgow rave attendees the average number of drugs used in their lifetime was 10.7 (range three to 18 drugs). Third, despite elevated rates of drug use, the drug-use pattern of rave attendees is not homogeneous. Ayer and Gruel (1996), for example, found that among a sample of 211 Swiss ravers rates of drug use differed significantly between MDMA and non-MDMA users. Similarly, “setting” influences also differentiate rave attendees. Forsyth (1996) found significant differences in drug use according to setting of use among a sample of ravers.

Although these purposive studies provide rich and important information regarding the context and character of drug use among rave attendees, they are not typically based on representative samples. Indeed, no study could be found providing epidemiological data on the prevalence of rave attendance among a general population of adolescents. This paper addresses two issues on which the existing literature is relatively silent. First, among a general population of adolescent students, what is the prevalence of rave attendance? Indeed, the policy implications would differ if elevated rates of drug use occurred among a small population versus moderate rates among a large population. Thus, knowledge of the prevalence of rave attendance is fundamental to understanding the potential drug-related harm associated with raves. Secondly, is the drug-use profile of rave attendees unique in contrast to other forms of adolescent recreation? To recast this question, are raves just another venue for recreational drug use to which those who wish to use drugs are attracted? Hagan (1991), for example, contends that, in addition to a subculture of delinquency (measured by traditional indicators such as theft, vandalism, etc.), youth culture exhibits a “party subculture”—activities focused on the pursuit of fun, including attendance at rock concerts and dances. Thus, is rave attendance a reflection of a party subculture or a subculture of deviant drug-use patterns? To examine this question, drug-use profiles were compared between those who restricted their recreational activities to raves and those who, in addition to raves, attended a “bush party,” a large outdoor gathering of youth in which drinking alcohol is a dominant activity.

METHOD

Data

This study is based on data derived from the 1995 cycle of the Ontario Student Drug Use Survey (OSDUS) (Adlaf et al. 1995). The OSDUS is a cross-sectional probability survey of Ontario students enrolled in grades seven, nine, 11 and 13. Excluded from the sample is the 7% of the population who are not enrolled in the regular school system (e.g., private school students). By definition, also excluded are adolescents who were not enrolled in school. A stratified, single-stage cluster sample of classes selected students from four grades (seven, nine, 11 and 13) and from four geographic regions (Metropolitan Toronto and Western, Eastern and Northern Ontario). A probability sample of students was selected independently from each of the resulting 16 strata. The final sample of the 1995 cycle of the OSDUS comprised 3,870 students from 20 school boards, 137 schools and 233 classes, representing a participation rate of 76% (15% loss due to absentees and 9% due to nonreturn of consent forms). Although the data can apply only to those who participated in the survey, the response rate is similar to that of other large surveys such as the Monitoring the Future Study (Johnston, O’Malley & Bachman 1995). The data are based on surveys administered during February through April, 1995, by the Institute for Social Research at York University. Questionnaires were self-administered and anonymous, and were completed during classroom time. Because only a random-half sample were questioned on issues related to rave attendance, the total sample for analysis is based on 1,853 questionnaires.
Measures

The central variables in this study are those related to rave attendance. Students were asked the following questions: “Raves are large, all-night parties that are quickly organized and promoted by word-of-mouth. They are often held in old warehouses and other large buildings. Have you or any of your friends even been to a rave? (yes, no). How often in the last 12 months have you been to a rave? (never, once, twice, three +). About how much alcohol do you usually drink at a rave? (none, 1-2 drinks; 3-5; 6-9; 10-14; 15+). Were the following drugs being used at the rave? (marijuana, ecstasy, LSD, ‘smart’ drugs, other hallucinogens).”

In addition to raves, students were asked about attending other recreational events in which alcohol or drugs could be prominent activities. Students were asked: “Field parties, also known as bush parties or pit parties, are large, outdoor parties usually held in the spring and summer. How often in the last 12 months have you been to a field or bush party?” Although both raves and bush parties are youthful recreational activities, one distinguishing characteristic is music and dancing. While these activities are dominant at raves, they are less so at bush parties. Indeed, other activities such as sports (e.g., softball) are also commonly pursued. As well, raves are typically held indoors while bush parties occur outdoors. In order to evaluate the unique character of rave attendance as a recreational activity, students were classified into four groups based on rave and bush party attendance: those who attended a rave and a bush party during the 12 months before the survey (n = 176); those who attended a rave only (n = 75); those who attended a bush party only (n = 483); and those who attended neither (n = 1,066).

Variations were compared in several measures according to recreational activity. First, the past 12-month prevalence of use for 20 drugs was examined; 15.8% of attendees reported not using any of nine illicit drugs (heroin, methamphetamine, LSD, PCP, other hallucinogens, cocaine, crack, ice, MDMA). Also, using five Drug Abuse Screening Test (Skinner 1982) items (desired to use drugs less; unable to stop using; sought help for drug problem; had blackouts or flashbacks; and had medical problems as a result of drug use), the percentage reporting two or more drug-related problems was determined to be 3.5% of the total sample. Finally, the percentage reporting involvement in at least two of five delinquent activities (theft greater than $50; beating up someone; breaking into property; carrying a weapon; and gang fighting) during the 12 months before the survey was also determined.

This study’s analyses are twofold: first, the prevalence of reported rave attendance is described; and second, the drug use profiles of rave attendees versus nonattendees and by recreational status are compared. Because the sample design employs unequal probabilities of selection, the data must be weighted to ensure proper representation. However, to ensure that weighted sample sizes do not exaggerate statistical tests, the sample was adjusted to the number of students interviewed. Also, because the sample size of the recreational activity groups is small, adjustments for design effects due to the complex sampling design have not been made.
but instead only those findings exceeding \( p < .01 \) have been interpreted. Comparisons between rave attendees and nonattendees are based on logistic regressions adjusting for age and gender. Odds ratios are presented to indicate the magnitude of group differences.

RESULTS

Prevalence of Rave Attendance

Almost one-third of students (29.7%) attended a rave at least once in their lifetime, or had a friend that did so. Table 1 presents the percentage of students who reported attending a rave at least once during the 12 months before the survey. Overall, 13.2% (3.2%, 95% CI) reported attending a rave during the past year, a percentage which varies significantly by both gender (15.6% of males versus 11% of females) and by grade level (varying from 7.2% of seventh graders to 16.6% of 11th graders). Rave attendance was generally infrequent: 7.9% attended only once, 2.6% attended twice and 2.7% attended three or more times. Although the use of drugs has been the focus of rave attendees, a majority report drinking alcohol while at the rave. Among the 256 attendees, 38% did not typically consume alcohol at the rave, 21% consumed one to two drinks, 16% consumed three to five drinks and 25% consumed six or more drinks. The drugs most commonly observed being used were marijuana, observed by 68% of attendees, LSD (54%), other psychedelics (49%), ecstasy (37%) and “smart” drugs (26%).

Drug Use Profile of Rave Attendees

Tables 2 and 3 compare the drug use profiles of the four recreational groups: those who attended both a
rave and a bush party during the past 12 months (n = 176); those who attended a rave only (n = 75); those who attended a bush party only (n = 483) and those who attended neither (n = 1,066). Before examining differences among these four groups, in columns three and four in Table 2 and column one in Table 3 reported rates of past year drug use are compared. For 18 of 20 drugs, rave attendees are significantly more likely (at p<.001) than nonattendees to report use. Differences are also of a large magnitude, with odds ratios (adjusted for age and gender) ranging from 2.4 for solvents (2.6% of nonattendees vs. 5.0% of attendees) to 23 for PCP (0.5% vs. 10.3%) and 21 for MDMA (0.6% vs. 12.6%). Overall, 1.7% of the OSDUS sample reported using PCP and 1.8% reported using MDMA during the 12 months before the survey (Adlaf et al. 1995). It is also evident that rave attendees are five times more likely (1/0.19) than nonattendees to use any of the nine illicit drugs or to report two or more drug problems, and eight times more likely to report involvement in two or more delinquent activities.

The question now remains whether the drug use profile of rave attendees is unique relative to those engaged in other recreational activities such as bush parties. As a group, rave attendees are also involved in bush parties; 70% of rave attendees also attended a bush party in the past 12 months. In contrast, only 27% of bush party attendees attended a rave. Overall, 42% of the sample attended a bush party or a rave during the 12 months before the survey. Although drug use differs substantially between rave attendees and nonattendees, the comparisons in Tables 2 and 3 also indicate that drug use varies widely according to the four recreational groups. Several important findings are evident in these data. First, as seen in Table 2 (column 6) there is a clear pattern showing that those who attended both raves and bush parties report the highest rates of drug use.
although differences in drug use between rave attendees and nonattendees are large, rates of drug use do not differ appreciably between those who attended a rave only and those who attended a bush party only. Indeed, only two of 20 comparisons are statistically significant at p<.01, a number that may reflect chance findings. And third, there is a suggestive pattern that those who attended both bush parties and raves are more likely than those who attended raves only to use seven of the 20 drugs examined (at the lower p<.05 level). Still, these differences are all sizeable, with odds ratios varying from 2 (LSD) to 11 (PCP).

Substantial differences according to recreational status are also evident regarding the percentage who report no use of any illicit drug (other than cannabis) and no self-reported drug problems. Despite the stereotype of rave attendees being heavily involved in drugs, it is seen that 51% of bush party and rave attendees and 70% of raveonly attendees report using none of the nine illicit drugs surveyed in the study. It is also evident that although, as a group, rave attendees are more likely to report two or more drug problems, differences in problems between rave-only attendees and rave and bush party attendees are not significantly different (OR = 2.4 and OR = .90, respectively). Regarding differences in reported delinquency, it is found that those attending both raves and bush parties are more likely than rave-only attendees to report involvement in delinquent activity. However, in the case of delinquency, it is noted that those attending bush parties only are half as likely as those attending only raves to report delinquent activities (16.2% vs. 29.1%).

DISCUSSION

Before summarizing the results and conclusions of this study, some important limitations of the data and analysis should be noted. As in most epidemiological drug-use surveys, the data cited are based on self-reported measures. Still, the authors are confident in their findings; all data were collected anonymously and the findings display predictive validity. It is also important to note that this study’s drug-taking items measured general drug use and not that occurring at raves. As well, these data were collected in 1995, and it is not known if rave attendance has changed since then. Finally, because this survey was restricted to adolescent students, its estimates of rave attendance do not include attendance by older youth, college students or dropouts.

This study’s first research question involved the prevalence of rave attendance, and several findings are particularly noteworthy. First, a majority of students had not attended a rave; two-thirds never attended a rave in their lifetime, and past-year prevalence never exceeded one-fifth. Among those who did attend a rave, attendance was generally infrequent. Raves were not a dominant recreational activity; indeed, bush parties were more popular, with twice as many youth attending such events. Also noteworthy is that rates of drug use among rave attendees in this sample were substantially lower than those found in other studies (Forsyth 1996; Solowij, Hall & Lee 1992). Whether this reflects cross-national or sampling differences is unknown. However, the most likely reason for lower rates of drug use in this sample is that most purposive rave studies have included more dedicated and frequent rave attendees than were found in this sample.

The study’s second research issue questioned whether there was something unique about the drug use profile of those who attended raves. In this regard, it was found that the drug use profile of rave attendees was not homogeneous; for the one-third of attendees who attended only a rave (and did not attend a bush party) rates of drug use did not differ significantly from bush party-only attendees (only heroin and MDMA use differed). Moreover, 70% reported not using any illicit drug other than cannabis, also a rate no different from bush party-only attendees, and rates of drug problems also did not differ from those attending only bush parties. In contrast, two-thirds of rave attendees (9% of the total sample) displayed higher than average rates of drug use.

The cited data imply that raves are a venue in which both the “set” (an elevated drug-use profile of attendees) and the “setting” (sites with ready access to drugs) may increase the likelihood of negative drug-related outcomes. Although rave attendance was not prevalent among mainstream adolescents in this sample, experienced drug users are attracted to raves, as earlier generations of drug users were attracted to rock concerts (Newmeyer & Johnson 1979). Consequently, although the size of this population is relatively small, recent rave-based harm reduction strategies (e.g., Ayer & Gmel 1996; Beck & Rosenbaum 1994) are appropriate to reduce potential problematic consequences of drug use.
REFERENCES


