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An In-Depth Qualitative Examination of the Ecstasy Experience: Results of a Focus Group with Ecstasy-Using College Students

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Abstract

This study examined ecstasy use in 30 college students who participated in one of four 60-minute focus groups with other participants who also had a history of ecstasy use. Ten topics emerged in the sessions: 1) pill ingredients, 2) mechanism of MDMA effects, 3) reasons for initiating ecstasy use, 4) risky behaviors and ecstasy use, 5) sexual activity and ecstasy, 6) positive effects from ecstasy use, 7) negative effects related to ecstasy use, 8) ecstasy and polysubstance use, 9) perceived risks of ecstasy use, and 10) motivational factors related to quitting ecstasy use. Most participants had a basic understanding of the contents of ecstasy pills, and the effects that ecstasy has on the brain and bodily functions. Participants reported positive effects on mood, social pressure, curiosity, availability, boredom, desire for an altered state of mind, desire to escape, self-medication, desire to have fun, and the ease of use of ecstasy in comparison to other drugs as reasons for initiating ecstasy use. They were divided regarding whether ecstasy increased the likelihood of engaging in risky behaviors, including risky sexual behavior. Participants described their experiences of both the positive and negative effects (physical and psychological) that they attributed to their use of ecstasy. All participants were polysubstance users, consuming a number of other substances simultaneously and concurrently with ecstasy. The majority was unaware of specific types of problems ecstasy could potentially cause and discounted its potential harm. Participants varied in their motivation for quitting ecstasy use, including negative personal experiences while using ecstasy, health concerns, and addiction/tolerance. Implications for prevention and intervention are discussed.

Keywords

ecstasy; X; club drugs; raves; college students

Substance abuse^a among young adults continues to be an area of concern for public health research, as well as among medical and mental health professionals. During the past 10 years, the use of club drugs—a class of synthetic compounds that have various stimulant and hallucinogenic properties—has become more prominent among the spectrum of drugs used by youth and young adults in the United States (Rivas-Vazquez and Delgado, 2002).

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^a"Substance abuse" is used as a diagnostic taxonomy in substance use and misuse. Substances can be and are used or misused. Living organisms are and can be abused. Editor's note.

Club drugs, such as ketamine hydrochloride (a derivative of phencyclidine hydrochloride or PCP), lysergic acid diethylamide (LSD), gamma-hydroxybutyrate (GHB), and 3,4-methylenedioxymethamphetamine (MDMA; “ecstasy”), are the major club drugs used by young adults to enhance social experiences. The aim of the present study was to conduct an in-depth examination of six important and inadequately understood topic areas relating to ecstasy use in college students, a group that appears to be at high risk for club drug use. In addition to providing useful information in regard to these six topic areas, it was anticipated that data gathered from the focus groups would provide guidance in generating specific hypotheses that could be tested in larger samples using quantitative methods.

The Ecstasy Experience

Beck and Rosenbaum (1994) interviewed 100 ecstasy users and detailed the common stages of the ecstasy high. When an average dose of ecstasy (100–125 mg) was ingested orally on an empty stomach, its effects were usually experienced after 20 to 60 minutes, and were often described as a sudden and intense high, a perfect euphoria. However, for some users, this “rush” was far from perfect, as trepidation, tension, stomach tightness, and/or nausea ensued. Following this initial period, users generally reported a relatively stable and enjoyable period that tended to last between 2 and 3 hours. Finally, the “coming down” phase was experienced approximately 3 to 4 hours after ingestion. Ecstasy users reported using other substances such as alcohol, tranquilizers, or marijuana to ease the comedown.

The ecstasy experience is often associated with varying undesirable effects. Physical effects can include loss of appetite, nausea, vomiting, blurred vision, increased heart rate and blood pressure, muscle tension, faintness, chills, sweating, tremor, insomnia, convulsions, and a loss of control of voluntary body movements (Beck and Rosenbaum, 1994; Kalant, 2001). Some psychological difficulties may include agitation, confusion, depression, insomnia, drug “craving,” and paranoia during and sometimes weeks after use (Kalant, 2001). Because ecstasy is typically produced in clandestine laboratories, pills can often contain various adulterants, such as methamphetamine, caffeine, cough suppressants with PCP-like effects, and cocaine (Hansen, Riddle, and Sandoval, 2002; Drug Enforcement Administration, 2001).

Ecstasy and Polysubstance Use

Research evidence indicates that ecstasy use frequently includes the use of other illicit substances. According to a report by the Drug Enforcement Administration (2001), ecstasy is often used in combination with alcohol, other club drugs (GHB and ketamine), marijuana, methamphetamine, psilocybin mushrooms, and LSD. Arria et al. (2000) reported that ecstasy users recruited from rave settings were more likely to report past experiences with marijuana, cocaine, and other drugs than their nonecstasy using counterparts. Yacoubian et al. (2002) and Wish et al. (under review) report similar findings in a sample of juvenile offenders and college students, respectively. Although it is apparent that ecstasy users are likely to engage in polysubstance use, little is known about whether these other illicit substances are used before, during, and/or after ecstasy use.

Correlates of Ecstasy Use Among Youth and Young Adults

One factor that has been consistently cited in the literature as a predictor of future substance use among adolescents and young adults is prior substance use. Individuals who experiment with illicit drugs at an early age are at greater risk for later “drug abuse” (Hawkins, Catalano, and Miller, 1992). Boys and Marsden (2003) examined the use of alcohol, cannabis, ecstasy, amphetamine, and cocaine hydrochloride in a nontreatment sample of 16–22-year-old polysubstance users. Initiating use at a younger age was significantly associated with more

intensive use of ecstasy, cannabis, and cocaine. With regard to ecstasy, age of first use accounted for 22% of the variance in the prediction of intensity of current use.

Dating back to 1978, Kandel found that associating with drug-using peers was a significant risk factor for initiating illicit drug use. Consistent with this prior research, according to Hussong (2002) and supported by numerous studies (e.g., Hawkins, Catalano, and Miller, 1992; Oetting and Beauvais, 1986; Petraitis et al., 1998; Copeland and Martin, 2004), the peer context is possibly the most salient, robust predictor of an adolescent's substance use. Involvement in a substance-using group tends to be associated with various forms of licit and illicit substance use (Chassin et al., 1986; Hawkins, Catalano, and Miller, 1992). Adolescents who are at "risk" for future illicit substance use are likely to have friends who support illicit substance use, have friends who talk about illicit substance use, or have peers who offer them illicit substances (Kandel, 1978). Boys and Marsden (2003) found that participants' perception of substance use by their peers was a significant predictor of their own intensity of use for five substances (alcohol, cannabis, ecstasy, amphetamine, and cocaine hydrochloride). With regard to ecstasy, the extent of ecstasy use by participants' peers accounted for 18% of the variance in ratings of current intensity of use.

The use of several different psychoactive substances has become very common among young adult drug users (Boys, Lenton, and Norcross, 1997; Boys, Marsden, and Strang, 2001). Prior research has found that the concurrent use of drugs is commonplace among young adults, mainly to improve the effects of other drugs or to help manage negative effects (Boys and Marsden, 2003; Boys, Marsden, and Strang, 2001).

Strote, Lee, and Wechsler (2002) recently analyzed data on ecstasy use of college students from the 1997 and 1999 Harvard School of Public Health College Alcohol Study. Results indicated that ecstasy use in the past year was significantly more likely among students who were male, white, under 21 years of age, members of a fraternity/sorority, and lived in the northeast. Furthermore, students who used ecstasy in the past year were more likely to use marijuana, engage in binge drinking, smoke cigarettes, have more sexual partners, rate parties as important, rate religion as less important, spend more time socializing with friends, and spend less time studying than nonusers. The variable with the strongest correlation with ecstasy use was marijuana use in the past year (91.2% of students who used ecstasy in the past year had also used marijuana).

In trying to understand adolescents and young adults' motivations for using drugs, it is important to examine how motivations may differ depending on the type of substance (Newcomb, Chou, and Bentler, 1988). For example, if the desired effect is increased nervous system arousal, stimulants such as amphetamines, ecstasy, or cocaine may be used. In a recent study of substance use by 16–22-year-old polydrug users in the United Kingdom, Boys, Marsden, and Strang (2001) found that the most popular functions for substance use among six substances (cannabis, amphetamine, ecstasy, LSD, cocaine hydrochloride, and alcohol) were: to relax (96.7%), to become intoxicated (96.4%), to keep awake at night while socializing (95.9%), to enhance an activity (88.5%), and to alleviate depressed mood (86.8%). Seven of the 17 reasons were endorsed by over half of those who had used ecstasy in the past year. The most common reasons for using ecstasy were: to keep going (91.1%), to enhance activity (79.6%), to feel elated/euphoric (77.7%), to stay awake (72%), to get intoxicated (68.2%), to enjoy the company of friends (63.1%), and to enhance feeling when having sex (63.1%).

Ecstasy and College Students

One of the significant trends in illicit club drug use in the United States has been the increased use of ecstasy among college students. A nationally representative survey of more than 14,000 college students from 119 4-year colleges in the United States found that the prevalence of past

year ecstasy use had risen from 2.8% in 1997 to 4.7% in 1999, an increase of 69%. Results of a follow-up study of the same sample showed that the trend of increased ecstasy use continued through 2000 (Strote, Lee, and Wechsler, 2002). The *Monitoring the Future Study* found that the lifetime and annual prevalence of ecstasy use among college students in 2001 was 14.7% and 9.2%, respectively (Johnston, O'Malley, and Bachman, 2003). According to the 2001 National Household Survey on Drug Abuse, young adults between the ages of 18 and 25 represented the majority of the past year ecstasy users (2–3 million). The most recent results from the *Monitoring the Future Study* show a leveling off or slight decline in ecstasy use (Johnston, O'Malley, and Bachman, 2003).

Objectives of the Current Study

The current study sought to provide a clearer understanding about several critical aspects of ecstasy use among young adults, particularly college students. Six main topic areas were introduced in the focus groups sessions: 1) history and course of all drug use, 2) general knowledge about ecstasy, 3) motivations for using ecstasy, 4) positive and negative effects—both psychological and physical—of using ecstasy, 5) the role of ecstasy in engaging in risky behaviors, and 6) reasons for quitting ecstasy. Results from this line of research have important implications both for understanding the antecedents and correlates of ecstasy use, as well as for designing universal and targeted prevention and intervention programs. We targeted college students with a history of ecstasy use as our population of interest, given that ecstasy has become increasingly popular on many college campuses.

Method

Recruitment of Subjects

In 2003, fliers were posted on a large 35,000-student campus, inviting individuals who had used ecstasy on at least one occasion to anonymously contact the researcher via telephone or e-mail using a fictitious first name if they were interested in participating in a focus group about ecstasy. All potential participants engaged in a brief telephone screening in which they were asked their age, gender, student status, and whether or not they had used ecstasy. Only individuals between the ages of 18 and 25 who had used ecstasy at least once in their life were accepted. This restriction was implemented because the goal of the study was to increase understanding of ecstasy use among college students by gathering data directly from users. A total of 43 callers responded to the fliers, 40 of whom met the study criteria, and 30 of whom participated in the study. Seven callers had a schedule conflict with the group meeting times and three callers failed to attend their scheduled groups. Four focus groups of six to 10 individuals were held in a private room on campus (one male-only, one female-only, and two mixed-gender).

Procedure

Upon entering the room for the focus group, each participant was instructed to write the fictitious first name they had used during the telephone screening on a nametag. Participants were instructed to only use their fictitious first name during the session to protect their identity. Prior to beginning the study, the facilitator reviewed the informed consent form with the participants who then signed and returned this form to the facilitator. Participants were free to ask any questions and were provided a copy of the consent form for their records. Approval to conduct this study was obtained from the University Institutional Review Board.

After completion of a brief survey, the guidelines for the hour-long group discussion were reviewed, including a reminder on confidentiality. Participants were told that they could speak about their personal experiences or what they knew about other substance users, without

disclosing anyone's identity. Participants then engaged in a group discussion led by a facilitator. The facilitator, a graduate student in clinical psychology, moderated the discussion by asking specific questions and permitting group members to respond to the experimenter and to each other. The amount of time allotted to each topic varied based on group feedback and the judgment of the facilitator. The facilitator introduced each of the six main topic areas outlined in Objectives of the Current Study (above), but discussion was not limited to these topics. Participants were instructed that they were free to either respond or not respond to each topic. Responses were written down by the facilitator and a trained research assistant.

At the conclusion of the group discussion, the moderator provided participants with a list of mental health resources and an informational handout about ecstasy containing a list of websites pertaining to substance use. Finally, participants received \$20 cash for their participation.

Rationale for the Use of Focus Groups

Although researchers often conduct private interviews or surveys when gathering data that are sensitive in nature (i.e., use of illicit substances) to address potential privacy or legal concerns on the part of the respondent, we elected to use focus groups. Although there are trade-offs in the selection of any methodology, we felt that this approach, in the current circumstances, allowed the opportunity for participants to respond to others' contributions through either commentary or questions, and such benefit outweighed any potential problems with candor. We felt that having participants in the groups who had both similar and diverse experiences would create a dynamic environment in which the participants would develop both a level of interest and a degree of trust that would simply not occur in one-on-one sessions. Finally, we believed that feedback among participants within the groups would foster the sharing of information that they may not have recalled or felt comfortable sharing individually with a researcher.

Results

Sample

Based on the information gathered in the brief written survey, some basic background information about the participants is available. Table 1 presents the demographic characteristics of the 30 participants. A little less than one half (43%) were males. Their average age was 19.5 years (range = 18–23), and most (90%) were White. More than one-half (60%) of the sample had used ecstasy five or more times, and all participants had used multiple illicit substances in their lifetimes.

Focus Group Topics

Although the original goal of the study was to examine the six main topic areas outlined in Objectives of the Current Study (above), based on a review of the written record of the four focus group sessions, a more appropriate breakdown of the session topics emerged: 1) pill ingredients, 2) mechanism of MDMA effects, 3) reasons for initiating ecstasy use, 4) risky behaviors and ecstasy use, 5) sexual activity and ecstasy, 6) positive effects from ecstasy use, 7) negative effects related to ecstasy use, 8) ecstasy and polysubstance use, 9) perceived risks of ecstasy use, and 10) motivational factors related to quitting ecstasy use. The presentation below summarizes the discussions in each of these topic areas.

Pill Ingredients—When participants were asked about the composition of ecstasy pills, most knew that the pills were supposed to contain MDMA and that sometimes other substances (some undesirable) were also in the pills (MDA, caffeine, speed, cocaine, heroin). For this reason, most stated that they only took pills from friends. They described several different types

of pills such as “speedy” for dancing and “dopey” for chilling and explained that they would take a particular type of pill depending on the effect they desired. Interestingly, many commented that the highs were not the same every time. The high depended on the type of pill they took and the environment in which they used it. Participants also clarified that not all pills were “good” in that they either failed to produce the desired effect or caused unwanted effects due to adulterants.

Many participants stated that they read articles and searched the Internet for information regarding ecstasy. Most had heard of ways to test pills for specific substances but few actually tested their pills. Instead, they relied on their friends or others who had already taken pills from the same batch of pills. They reasoned that pills from a particular batch should be the same. They explained that the test only tells you if the drug you are specifically testing for is in the pills rather than all of the substances that are in the pill. A few individuals reported that they had researched ways to reduce the risk of brain damage and mentioned that they often take selective serotonin reuptake inhibitors (SSRIs) for this purpose. Notably, they commented that it was easy to obtain antidepressant medication from friends.

Mechanism of MDMA Effects—In general, most participants had a basic understanding of the effects of MDMA on the brain. They explained that MDMA results in a release of excess serotonin that causes feelings of euphoria. Some participants also mentioned dopamine and norepinephrine, but did not know how these neurotransmitters were affected or how they affected functioning. When questioned about the role of serotonin in bodily functions, some participants demonstrated an understanding of the link between taking ecstasy and effects on bodily functions such as sleep, appetite, sex drive, and mood.

Reasons for Initiating Ecstasy Use—When participants were questioned about the reason(s) they took ecstasy the first time, a variety of responses were given: 1) positive effects on mood, 2) “social pressure” rather than peer pressure (“You see friends having a great time and you want to join in”), 3) curiosity (“You hear friends talking about it and see them on it so you're curious what it's like”), 4) availability (“Was there so I tried it”), 5) boredom (“Something to do”), 6) desire for an altered state of mind (“Desire to get screwed up”), 7) desire to escape (“It's like a vacation. Nothing bothers you. Take it and chill”), 8) self medication—some participants reported that ecstasy enabled socially anxious individuals and/or those with low self-esteem and confidence to fit in with others and to have a good time, while others reported it provided temporary relief from depressive symptoms, 9) desire to have fun, and 10) ease of use of ecstasy in comparison to other drugs (“Those afraid or turned off by shooting a needle or snorting a line won't have as much of a problem eating a pill. People don't take E as seriously as other drugs even though it's just as strong”).

Risky Behaviors and Ecstasy Use—Participants were asked if they thought people were more likely to engage in risky behaviors while using ecstasy. Responses indicated a lack of consensus. Participants who responded “no” felt that people are still “rational” while using ecstasy. Participants commented that it depends on “the type of person you are and that ecstasy doesn't change that.” They gave the example that if people normally use protection during sex then they would still use protection while using ecstasy.

Participants who responded “yes” explained that people who are using ecstasy are still in control but may be more likely to do something they normally wouldn't do—such as engaging in unprotected sexual activity—because they get caught up in the moment. One participant who was a heavy user reported doing things he wouldn't normally do.

Sexual Activity and Ecstasy—Participants were asked, “Why do people take ecstasy and then have sexual experiences?” Two main reasons were given. First, although ecstasy

reportedly resulted in difficulty achieving orgasm for the men in the focus group, the increased sexual pleasure that is experienced outweighed this sexual side effect (“Everything lasts a lot longer and feels better.” “Doesn't matter if you can't get off, you don't care.” “Feels like you are getting off the whole time.” “X makes you want to have sex more.”) Second, both men and women spoke of an increased physical sensitivity as well as feeling more emotionally connected to their partners.

Participants were also asked, “Why don't people take ecstasy and then have sexual experiences?” Four main reasons were given. First, women described a fear of promiscuity as indicated by one comment, “It's too likely for something to happen that you'll later regret.” Second, both men and women spoke of a fear that if they had a sexual experience while using ecstasy (which they presumed would be intensely pleasurable), they would be very dissatisfied with future sexual activity without ecstasy. Third, men expressed a fear of sexual dysfunction including difficulty or inability to obtain an erection or to orgasm. Fourth, both men and women explained that taking ecstasy did not produce “sexual feelings.” Many stated that taking ecstasy does not make people more willing or eager to engage in sexual activity but rather simply intensifies the sense of touch. They gave the example that ecstasy makes people want to have a massage more than sex.

Positive Effects from Ecstasy Use—Participants were asked about what positive effects they had experienced while using ecstasy and their responses were grouped into five main effects:

- 1) Euphoria. Participants stated that ecstasy makes you “feel happy” and “love everyone and everything.” It amplifies positive feelings, emotionally and physically, and makes everything “feel good.” One participant summarized his sense of euphoria while using ecstasy when he commented, “Ecstasy makes everything seem like it's perfect.”
- 2) Enhances senses. Participants explained that ecstasy enhances every sense, particularly smell and touch. Therefore, sexual experiences and massages feel “great.” In addition, they commented that ecstasy enhances the dance experience in that the “music feels better” and “it's more fun to dance.”
- 3) Perception of intimacy with others. Participants stated they felt connected with others and able to emotionally bond while using ecstasy.
- 4) Reduced social inhibitions. Many participants stated that while using ecstasy they were better able to express themselves and felt more confident. They liked that they were more talkative and expressive as indicated by one male participant's comment, “You can say what is on your mind without worrying what others will think.”
- 5) Release of stress and energy. Participants spoke of their ecstasy experience as a time to “chill out” and relax.

Negative Effects Related to Ecstasy Use—Participants mentioned the following negative physical effects that they attributed to their use of ecstasy: nausea, stomachache, vomiting (beginning of use), pain in jaw, headache, fatigue/exhaustion, dehydration (during and after), shakiness, and sensory overload.

Participants mentioned the following negative psychological effects that they attributed to their use of ecstasy: depressed mood (next day and mid-week), loss of appetite, difficulty concentrating, loss of interest in previously pleasurable activities, social withdrawal, insomnia, paranoia (during use), anxiety (during use), confusion, and memory loss. A male participant

commented, “Ecstasy is a vacation in itself, but really messes up your brain. It makes you forget everything and lose your sense of time.”

Ecstasy and Concomitant Substance Use—All participants reported using other drugs in conjunction with ecstasy. First, the most commonly mentioned substances taken simultaneously with ecstasy included the following: alcohol, cigarettes, acid, mushrooms, LSD, and “Special K.” Second, the most commonly mentioned substances taken to “help come down from ecstasy” included the following: alcohol, marijuana, “Special K,” benzodiazepines, and oxycodone-containing analgesics. A male participant explained, “Marijuana helps keep high going, gives you another little spike, and then eases your comedown.” Another male participant remarked, “Also any benzo [benzodiazepine] is really good, helps you sleep a lot, like Xanax®, clonazepam, Ativan®.” Finally, participants also mentioned that they used “Special K” and marijuana to maintain the high while coming down from ecstasy. A male participant commented, “My friends all smoke marijuana to get it back on again.”

Perceived Risks of Ecstasy Use—All participants agreed that using ecstasy was harmful but many did not know exactly what kinds of problems it could cause. The majority of users discounted the potential harm from using ecstasy because they have seen their friends using it who they perceive to be “fine.” Participants explained that if they saw peers with permanent brain damage then that would be a “big deal.” However, they feel as though the stories they hear of death and serious brain damage are not representative of the experiences of most users. They also believe that using ecstasy is not a “big deal” and as long as they limit their use to a few years “the damage won’t be too much.” A male participant remarked, “We haven’t seen enough negative effects. It’s still first generation.” Participants’ rationale for using ecstasy can be exemplified by one male’s comment, “If it’s going on all around you, it can’t be that bad.”

Motivational Factors Related to Quitting Ecstasy—Participants were asked to provide reasons of why people quit using ecstasy (described from either their own personal experience or experiences of their friends). Their answers were grouped into seven main categories:

- 1) Negative personal experiences. These experiences included having a bad experience while using ecstasy, losing too much weight, and psychological effects (emotionally unstable).
- 2) Health concerns.
- 3) Addiction/tolerance. The majority of participants stated that they felt that ecstasy was psychologically addictive but not chemically addictive. Yet many participants reported experiencing tolerance and that they took more ecstasy each time they used in an attempt to achieve their previous high. One participant explained, “The more you do it the less good you feel while on it and the worse you feel coming down.”
- 4) Money. Some participants quit because they didn’t have enough money to keep buying ecstasy. Others quit because they felt ecstasy wasn’t worth the money. They felt they could have better drug experiences for a cheaper price.
- 5) Loss of interest. Some participants didn’t like ecstasy as much as other drugs. Others described quitting as a form of maturation. “I’ve grown up. It’s just a stage of my life where it’s not me.” Others explained that the “magic” was gone and that they had already experienced what ecstasy felt like. One male participant commented, “I personally stopped using it [ecstasy] because the magic of the experience wore off. I already knew how it felt, and the potential risks were too great for me to keep using.” Finally, others described their use as a phase and a trendy thing to do at the time, but that ecstasy use no longer fit their lifestyle.

- 6) Observation of others using ecstasy. Many participants reported that when they were sober and saw others on ecstasy they realized how “fake” the experience was. Others commented that it was scary to see the personality changes in their friends, which they attributed to taking ecstasy. Some described a group of ecstasy users as “E-tards” who had “fried their brains” and could not hold conversations any more.
- 7) Fear of legal consequences.

Discussion

The following sections highlight the interesting and potentially important findings of this study, and are organized according to topic areas in a manner similar to the Results.

Pill Ingredients

Most participants were knowledgeable about the contents of ecstasy pills and had a basic understanding of ecstasy's systemic effects. They reported reading articles and searching the Internet for information regarding ecstasy. They knew that the pills were supposed to contain MDMA and that sometimes they contained other substances, some of which were undesirable. However, this knowledge did not deter these individuals from using ecstasy. This finding is consistent with prior research, which suggests that providing only information about drugs is not necessarily an effective tool for fostering behavioral change in substance users (Wish et al., under review). Therefore, an open question our study raises is: Did such information regarding ecstasy deter some college-age individuals from using ecstasy and/or play a role in quitting ecstasy use on the part of other individuals? Future research on the role of Internet-based information in both initiating and discontinuing illicit drug use is clearly needed. Moreover, future research directed towards examining the effectiveness of using the Internet as a prevention/intervention tool for illicit substance abuse, rather than as a “passive” educational and informational medium, might make a significant contribution to the literature. A combination of both psycho-education and brief interventions via the Internet may prove particularly effective, given the ability of the Internet to combine “attributes of mass communication (e.g., broad reach) with attributes of interpersonal communication (interactivity, rapid individual feedback)” (Wish et al., under review).

Reasons for Initiating Ecstasy Use

Participants reported a variety of motivations for experimenting with ecstasy, including the following motives: positive effects on mood, social pressure, curiosity, availability, boredom, desire for an altered state of mind, desire to escape, self-medication, desire to have fun, and the ease of use of ecstasy in comparison to other drugs. Some of these initial desired effects are consistent with the results of a study by Boys, Lenton, and Norcross (1997) in which the most common reasons for using ecstasy among polydrug users (ages 16–22) were to keep going, to enhance activity, to feel elated/euphoric, to stay awake, to get intoxicated, to enjoy the company of friends, and to enhance feeling when having sex. However, participants in the current study also emphasized the role of social pressure in their experimentation with and use of ecstasy. When sober and surrounded by ecstasy-using peers whom they perceived to be “having a blast,” participants described feeling the urge to experience what they thought of as “rolling” in their friends. When ecstasy “kicks in,” that is, takes effect, users “roll” and experience a wave of feeling normal, feeling the effects, feeling normal, and so on. “Rolling” was described by one participant as “It's great, I mean, you can feel it hit you, suddenly air tingles. You can feel everything. It opens the serotonin gates.”

Risky Behaviors and Ecstasy Use

Participants were divided regarding whether ecstasy increased the likelihood of engaging in risky behaviors, including risky sexual behavior. Some thought that individuals were still "rational" and in control while using ecstasy, while others thought users were more likely to engage in behaviors they wouldn't normally do if sober. Moreover, regarding sexual behavior, it is interesting to note that participants were divided in their views about whether ecstasy use increased the likelihood of promiscuity and risky sexual activities. Exploration of the role that ecstasy might play in increasing risky behavior, particularly in a college-age population that tends to discount the risks associated with many behaviors known to be risky (e.g., unprotected intercourse), is also clearly needed.

Perceived Risks of Ecstasy Use

Regarding participants' perceived risks of ecstasy use, all agreed that using ecstasy was harmful; however, many did not know the specific types of problems ecstasy could potentially cause and discounted the potential harm. Peers appeared to have had a significant impact on the initiation and continued use of ecstasy because as long as their friends who were using ecstasy were "Ok," then they felt that too would be "Ok." Participants also rationalized their use by thinking that if they only used for "a few years" then they would be "OK." Given participants' reports that factual information may have influenced their use of ecstasy, prevention programs might be more effective if they were to focus on addressing the types of risky beliefs that the college students held.

Motivational Factors Related to Quitting Ecstasy Use

The current study provided new information about why people quit using ecstasy (described from either participants' own personal experience or the experiences of their friends). Participants' responses varied, including negative personal experiences while using ecstasy, health concerns, addiction/tolerance, money, loss of interest, negative observations of others using ecstasy, and fear of legal consequences. These results suggest that the reasons to quit using ecstasy are quite varied, and that perhaps one single factor is neither necessary nor sufficient to motivate quitting ecstasy use. Intervention programs that target ecstasy users should be diverse and contain multiple foci, if they are to be successful.

Moreover, participants also provided information that might prove potentially valuable in the development and format of both prevention and intervention programs. Consistent with prior research in the area of social psychology (McAlister et al., 1980), participants commented that such programs would be more effective if two-sided arguments were used rather than one-sided. They would prefer to hear both the pros and cons of using ecstasy rather than simply being "bombarded" with how ecstasy destroys the brain. In this context, it would be helpful to further explore what type of educational materials would be most effective in preventing or intervening in the use of ecstasy among young adults. Results from this sample suggest that education about the risks associated with ecstasy use may be important, but certainly is not sufficient to deter its use.

Limitations

A potential limitation of this study is that the data are based on self-reports provided in a group discussion format, a potential threat to the validity of our findings. However, the methodology of the study attempted to address this potential concern in several ways. First, participants wore fictitious name tags during the focus groups, allowing for anonymity. Second, participants were not questioned individually and were free to either respond or not respond to any question. Third, participants were free to challenge statements made by others. Finally, behavior of the

participants during the group sessions suggested they were uniformly forthright and forthcoming.

Our study shows that it was feasible to recruit college student ecstasy users from campus advertisements. The resulting convenience sample appeared to contain a diverse group of persons with a range of drug use and behavior problems. However, we know little about how our results might vary by type of school, its size, or its rural or urban location. Replication of the methodology in a diverse sample of schools is clearly needed.

The biggest limitations to this study were the small size of the sample and its self-selected nature. We know little of how representative the persons who respond to a public advertisement for ecstasy users are to the general population of college student users. Moreover, all participants came from a single large mid-Atlantic university. We also do not know to what extent our findings generalize beyond college students. College students are likely to have more academic achievement, financial resources, and an educated peer group that could greatly affect the consequences of their ecstasy use. A future study that compares young adult ecstasy users who attend college to a matched group of youths who do not attend a college might help us to better understand how the unique college environment affects ecstasy use and its associated consequences.

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Eric Wish, Ph.D., is Director of the Center for Substance Abuse Research (CESAR) at the University of Maryland, College Park where he advances CESAR's mission to inform policymakers, practitioners, and the general public about substance abuse—its nature and extent, its prevention and treatment, and its relation to other problems. He is also an Associate Professor in the University's Department of Criminology and Criminal Justice. Dr. Wish has conducted research and published reports on a variety of topics related to substance abuse, including drug use in Vietnam veterans, assessment of treatment services for marijuana users, the relationship of drug use at arrest to subsequent criminal behavior, and methods for identifying users.

Amelia M. Arria, Ph.D., is the Deputy Director of Research at the Center for Substance Abuse Research (CESAR) at the University of Maryland. She is the Principal Investigator of a NIDA-funded longitudinal study of substance use among college students and a Robert Wood Johnson Foundation study on predictors of treatment entry and recidivism among drunk drivers. She is an epidemiologist with special interests in the area of physical and mental health consequences of alcohol and drug use, effective methods of drug prevention, and the intersection between drug use and violence.

Glossary

<i>E-Tards</i>	Slang term used by ecstasy users to describe other ecstasy users who have used ecstasy excessively, and have a limited range of affect and little social interest.
<i>Rolling</i>	Slang term used to describe the onset of the ecstasy experience, in which an individual alternates between “feeling high” and “feeling normal.”
<i>Special K</i>	Slang for ketamine hydrochloride, a derivative of phencyclidine hydrochloride.

References

- Arria A, Yacoubian GJ, Fost E, Wish ED. The pediatric forum: Ecstasy use among club rave attendees. *Archives of Pediatric and Adolescent Medicine* 2002;156(3):295–296.
- Beck, J.; Rosenbaum, M. *Pursuit of Ecstasy: The MDMA Experience*. State University of New York Press; Albany, New York: 1994.
- Boys A, Marsden J. Perceived functions predict intensity of use and problems in young polysubstance users. *Addiction* 2003;98(7):951–963. [PubMed: 12814501]
- Boys A, Lenton S, Norcross K. Polydrug use at raves by a Western Australian sample. *Drug and Alcohol Review* 1997;16:227–234. [PubMed: 16203432]
- Boys A, Marsden J, Strang J. Understanding reasons for drug use amongst young people: A functional perspective. *Health Education Research* 2001;16(4):457–469. [PubMed: 11525392]
- Chassin L, Presson CC, Sherman SJ, Montello D, McGrew J. Changes in peer and parental influence during adolescence: Longitudinal versus cross-sectional perspectives on smoking initiation. *Dev. Psychopathol* 1986;22:327–334.
- Copeland J, Martin G. Web-based interventions for substance use disorders: A qualitative review. *Journal of Substance Abuse Treatment* 2004;26:109–116. [PubMed: 15050088]
- Drug Enforcement Administration. Drug Intelligence Brief. Club Drugs: An Update. [Accessed Sept. 2001]. <http://www.usdoj.gov/dea/pubs/intel/01026/index.html>.
- Hansen JP, Riddle EL, Sandoval V. Methylenedioxymethamphetamine decreases plasmalemmal and vesicular dopamine transport: Mechanisms and implications for neurotoxicity. *J. Pharmacol. Exp. Ther* 2002;300(3):1093–1100. [PubMed: 11861820]
- Hawkins DJ, Catalano RF, Miller TQ. Risk and protective factors for alcohol and other drug problems in adolescence and early adulthood: Implications for substance abuse prevention. *Psychol. Bull* 1992;112:64–105. [PubMed: 1529040]
- Hussong AM. Differentiating peer contexts and risk for adolescent substance use. *J. Youth Adolesc* 2002;31(3):207–220.
- Johnston, LD.; O'Malley, PM.; Bachman, JG. *Monitoring the Future National Survey Results on Drug Use, 1975–2002. Volume II: College Students and Adults Ages 19–40*. National Institute on Drug Abuse; Bethesda, MD: 2003. NIH Publication No. 03-5376
- Kalant H. The pharmacology and toxicology of “ecstasy” (MDMA) and related drugs. *Can. Med. Assoc. J* 2001;165(7):917–928. [PubMed: 11599334]
- Kandel DB. Homophily, selection and socialization in adolescent friendships. *American Journal of Sociology* 1978;84:427–436.
- McAlister A, Perry C, Killen LA, Slinkard LA, Macoby N. Pilot study of smoking, alcohol, and drug prevention. *American Journal of Public Health* 1980;70:719–721. [PubMed: 7386708]
- Newcomb MD, Chou C, Bentler PM. Cognitive motivations for drug use among adolescents: Longitudinal tests of gender differences and predictors of change in drug use. *Journal of Counseling Psychology* 1988;35(4):426–438.
- Oetting ER, Beauvais F. Peer cluster theory: Drugs and the adolescent. *Journal of Consultation and Development* 1986;65:17–22.
- Petratis J, Flay BR, Miller TQ, Torpy EJ, Greiner B. Illicit substance use among adolescents: A matrix of prospective predictors. *Subst. Use Misuse* 1998;33(13):2561–2604. [PubMed: 9818990]

- Rivas-Vazquez F, Delgado L. Clinical and toxic effects of MDMA (“Ecstasy”). *Prof. Psychol.: Research and Practice* 2002;33(4):422–425.
- Strote J, Lee JE, Wechsler H. Increasing MDMA use among college students: Results of a national survey. *J. Adolesc. Health* 2002;30:64–72. [PubMed: 11755802]
- Wish ED, O'Grady KE, Yacoubian GS Jr, Hsu MH, Arria AM. Evidence for significant polydrug use among ecstasy-using college students. under review. Under review.
- Yacoubian GS Jr, Arria AM, Fost E, Wish ED. Estimating the prevalence of ecstasy use among juvenile offenders. *J. Psychoactive Drugs* 2002;34(2):209–213. [PubMed: 12691211]

Table 1

Selected characteristics of subjects (N = 30)

Demographics	
Males	43%
Ethnicity	
White	90%
Asian/Pacific	7%
Black	3%
Age	
Range	18–23 years
Mean age	19.5 years