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COLLEGE STUDENTS' PERCEIVED RISKS OF ECSTASY

College Students' Perceived Risks of Ecstasy Use and the State of Ecstasy Prevention

A thesis submitted in partial fulfillment for the Bachelor's Degree in Psychology

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Trinity College

Fall 2013 – Spring 2014

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Abstract

National statistics reveal a startling trend concerning ecstasy use among high school students, with over 5% of 10th graders and 8% of 12th graders reporting lifetime use (Dennis & Ballard, 2002). Ecstasy use among college students is even higher, with some studies reporting rates up to 10% (Boyd et al., 2003). Although previous research has documented the prevalence and predictors of ecstasy use, there is a limited understanding of how college students' perceptions of risk related to ecstasy use are formed. A focus group was conducted using a sample of Trinity College students. In addition, a brief online survey was administered to high school health educators across Connecticut to elucidate the type and depth of drug prevention programs being utilized. Findings revealed that participants' perceptions of the risks of ecstasy were limited, nonspecific and largely shaped by their peers and media, as opposed to previous health education. In addition, only a subset of drug prevention programs taught in high schools across Connecticut addressed ecstasy and most health educators did not endorse using nationally recognized evidence based programs.

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Introduction

With the recent rebranding of ecstasy as MDMA and steadily increasing rates of use, there is a clear need for continued and more in-depth research on predictors and consequences of ecstasy use. For example, over 5% of tenth graders and 8% of twelfth graders reported lifetime ecstasy use (Dennis & Ballard, 2002). Results from the National Survey on Drug Use and Health estimated the average age of first use of ecstasy to be 20.3, with approximately one million new users each year (Substance Abuse and Mental Health Services Administration). In addition, data from the National Institute on Drug Abuse found that emergency room visits related to ecstasy increased by 123% from 2004 – 2009. (Substance Abuse and Mental Health Services Administration).

With the reemergence of ecstasy as a new “pure” form referred to as MDMA or “Molly,” the drug has been cast in a new, more appealing and less risky light. However, reports of ecstasy-related deaths have become more commonplace in recent popular literature, challenging the belief held by many young adults that ecstasy was much safer than other illicit drugs, with limited negative consequences (Bahora et al, 2009). Regardless of the countless studies published addressing the actual risks associated with ecstasy use, there seems to be a disconnect between the facts and people’s perceptions of the risks associated with using. In order to understand and appreciate how these perceptions and expectancies are cultivated, it is crucial to examine the ways in which individuals are first introduced to information about the drug. Accordingly, the current thesis will explore emerging adults’ perceptions of the negative consequences of ecstasy and the varied sources of information that have informed their understanding of the drug and its effects. Relatedly, this thesis also will explore the extent to which secondary school health educators are addressing ecstasy in their prevention curricula and whether evidence-based strategies are being utilized to deliver this information.

History of Ecstasy

Ecstasy was first patented in 1912 by German pharmaceutical company Merck with the intention of being sold as a diet pill. For the most part, ecstasy remained dormant until the mid 1970's when it was rediscovered by Alexander Shulgin, a University of California at Berkeley graduate who became interested in ecstasy's potential use in psychotherapy. After discovering ecstasy's ability to break down defenses, produce states of empathy and allow more open dialogue, Shulgin began to promote the drug as a new therapeutic agent (Grob et al, 2000). Then in the 1980's, as the subculture of raves and techno music took over, ecstasy became an integral part of the clubbing scene. Its stimulant qualities allowed users to sustain hours, even days, of partying and dancing. Ecstasy was proving to be a drug that transcended all boundaries, from a dietary supplement, to a therapeutic agent, to a party drug. However, ecstasy's popularity and availability was only short lived. In 1985 the US Drug Enforcement Agency banned the substance, citing it as a Schedule 1 controlled substance with high potential for abuse, and no real medical use (Grob et al, 2000). The label of a Schedule 1 controlled substance placed ecstasy in the same category as drugs such as LSD, heroin and cocaine. The ban was prompted by the belief that abuse of the drug had become a nationwide problem.

The Composition of Ecstasy

3, 4-methylenedioxymethamphetamine (MDMA) is classified as a phenethylamine due to its structural similarities with both amphetamines and the hallucinogen mescaline (Parrot, 1997). Ecstasy is an indirect serotonergic agonist that also displays a binding affinity for dopaminergic receptors (Parrot, 1997). This means that the actions of the serotonergic agonist provide effects similar to those of amphetamines, while the dopaminergic agonists produce effects similar to LSD (Parrot, 1997). This chemical makeup results in a unique mood profile of increased elation, feelings of empathy, agreeableness, confidence and increased levels of energy (Parrot, 1997).

The actual neurological effects associated with ecstasy use range from mild to severe. However, the extent to which these risks are recognized by users is relatively unknown and under researched. At one end of the spectrum, the mildest risk associated with ecstasy use is acute dehydration. This is because the stimulant effects of ecstasy heighten energy levels, allowing users to dance for extended periods of time, often masking their thirst (Cole & Sumnall, 2003). A moderate risk associated with ecstasy use is acute depression in the days following consumption (Curran & Travill, 1997). This trend has been well documented and is thought to relate to the process of restoration of the serotonin system after its disruption by the induced flooding of serotonin during the ecstasy experience. At the opposite end of the spectrum, the severe risks associated with ecstasy use are long-term neurotoxic effects such as impaired memory, impulsivity, alteration of mood and a range of mood disorders such as depression and anxiety (Morgan 1998).

Theories of Ecstasy Use

In order to understand what compels an individual to use a drug and how the drug later affects the individual, there are three determinants that must be considered: the drug, the set and the setting (Zinberg, 1984). To conceptualize patterns of drug use, the pharmacological actions of the drug itself, the mental state the individual brings to the experience (such as personality, attitudes and expectancies) and the physical setting in which the drug is taken must all be taken into account. In the case of ecstasy, the most influential factor is arguably the set. Accordingly, identifying an individual's expectancies of the drug is instrumental to understanding their use. This means recognizing how an individual believes a certain action, in this case taking ecstasy, will lead to a certain outcome, in this case the high of ecstasy. This is also referred to as a drug outcome expectancy. Studies have shown that drug outcome expectancies are an influential factor in determining current drug use among young people (Businelle et al., 2007). Expectancies

are instrumental to understanding why people use drugs and are acquired both through modeling and/or a person's direct experience with the substance (Businelle et al., 2007). A study by Fabricius et al (1993) found that individuals who were regular users of a certain drug were much less concerned about the harmful effects of it; however when questioned about the harmful effects of drugs they had not used before, were much more likely to speculate in general about the harmful effects (Businelle et al., 2007). This supports the notion that when an individual has a positive direct experience with a drug, they are more likely to downplay the negative consequences. Similar results were found in the MDMA Belief Questionnaire, where individuals who reported using MDMA were more likely than nonusers to report positive expectancies and downplay negative consequences (Businelle et al., 2007). Similarly, it was found that users expressed some awareness of health risks associated with ecstasy use; however, their positive experiences ultimately outweighed their concerns (Bahora et al, 2009). In terms of the settings, ecstasy is typically associated with the music scene of clubs and festivals. With the emergence of house music and festivals spanning over entire weekends, ecstasy has provided its users the means to stay active and energized for hours in highly stimulating environments.

When debating whether or not to use a drug, there are many factors that influence the decision. Prior knowledge of the drug, whether from drug prevention programs in school, personal research or simply from friends experiences greatly influence one's decision. The process of personal risk evaluation is subject to many influences such as perceived benefits, moral values and emotional coping strategies (Gamma et al, 2005). In a study on perceptions of ecstasy, a group of psychological "modifiers" of risk perception were identified that were believed to greatly influence and individual's decision to use. Specifically, Gamma and colleagues found that immediacy of consequence, optimistic bias, voluntariness of action, perceived control and familiarity of an event to be most impactful (Gamma et al, 2005). The

nature of the consequence greatly impacts whether an individual uses; that is, immediate consequences had a much greater influence on whether an individual would partake in a risky behavior as opposed to the long-term consequences (Gamma et al., 2005). Optimistic bias refers to the belief that the risk to the individual associated with taking ecstasy is much less than the risk to others taking ecstasy, even though they are in the same situation (Gamma et al, 2005). Voluntariness of action refers to the belief that when a risk is taken voluntarily, it is viewed as much less severe than when a risk is taken through any other means (Gamma et al, 2005). Perceived control refers to the belief that when an individual perceives the risks to be under their control they view them as much less severe (Gamma et al, 2005). Lastly, familiarity of an event simply means that if an individual has used ecstasy before, they may be more inclined to do so again because they view the risks as familiar and therefore less severe (Gamma et al, 2005).

Users view ecstasy as a relatively safe drug with minimal negative consequences (Bahora et al, 2009). While the illegal nature of the drug was viewed as the main risk associated with use, most users expressed the view that ecstasy was a substance that did not interfere with leading a normal life and that it was impossible to get addicted to (Bahora et al, 2009). In numerous studies, ecstasy was viewed as a recreational drug and placed in the “soft drug” category along with drugs such as marijuana and LSD (Bahora et al, 2009). In terms of availability and accessibility, most studies found a consistent theme of readily available and easily accessible, with some participants describing obtaining ecstasy as “effortless, easier than an under aged person buying alcohol” (Bahora et al, 2009). When participants were asked about possible negative consequences of using ecstasy, while some mentioned having heard of long-term consequences, none of them knew a user who had actually ever experienced any negative side effects (Bahora et al, 2009). Therefore, when thinking about the process of personal risk

evaluation, it comes as no surprise that a drug so easily accessible and believed to carry essentially no risks is tried by a million new users each year.

Despite numerous studies identifying the short and long-term neurological effects of ecstasy use, most ecstasy users are under the impression that it produces little or no harmful consequences (Gamma et al, 2005). This skewed perception of safety simply means a lack of risk awareness and knowledge with users. Individuals who underestimate the risks associated with ecstasy use are more likely to engage in use. In a study on the perceived risks associated with ecstasy use, less than 30% of males and 40% of females identified any risk, whether physical, neurochemical or psychiatric (Martins, Carlson, Aleandre & Falck, 2011). In a similar study, participants expressed the belief that ecstasy was unlikely to cause any long-term effects, and that severe long-term consequences they had encountered were merely a public health scare tactic aimed to prevent people from taking the drug (Bahora et al, 2009). In the same study, when participants were asked to reflect upon information regarding the negative consequences and long-term effects, most participants disregarded any accounts they had heard, citing them as rumors or hearsay (Bahora et al, 2009).

Sources of Ecstasy Education

Most individuals are first exposed to drug prevention education in high school through drug awareness curriculum taught by their health teacher. While the material and depth of the curriculums may vary from school to school, a study by Crosse et al found that only 7.8% of high schools implement evidence-based drug prevention programs nationwide, despite the numerous programs available (Crosse et al, 2011). With such a grossly underwhelming statistic highlighting the widespread failure of high schools to implement evidence-based drug prevention programs, the study took a closer look at the why this would be the case. First they examined school characteristics, finding that urbanicity, enrollment and school percentage of students

eligible for free or reduced price lunches were influential factors (Crosse et al, 2011). Schools in urban districts were routinely found to have a statistically significant association with lower number of lessons dedicated to prevention programs. A school's enrollment also had an effect on the number of lessons dedicated to prevention programs, with larger schools dedicating the fewest. Additionally, the larger the school's enrollment, the less likely the prevention program was being implemented with fidelity (Cross et al, 2011). The number of students eligible for free or reduced lunch is often used as an indicator of the socioeconomic status of students within the school. They also examined the training programs themselves, looking at both the initial training that was provided to staff, as well as the amount of training that was provided (Crosse et al, 2011). Lastly, they found that the district characteristics of schools, as well as the federal and state support policies were also influential factors (Crosse et al, 2011). Not only did they discover only 7.8% of schools implemented evidence-based drug prevention curricula, but only 44% of those were implemented with an acceptable level of fidelity, meaning they were carried out the way they were intended to be (Crosse et al, 2011). This essentially meant that over 90% of the prevention programs currently being implemented in high schools nationwide lacked empirical support that proved their effectiveness (Cross et al, 2011).

The implications of this study not only highlight the widespread failure to implement evidence-based and empirically supported programs, but also the significant amount of resources being allotted to programs that may have questionable effectiveness in drug prevention.

Although this statistic doesn't speak to ecstasy specifically, it suggests that it isn't common practice to use evidence-based drug prevention programs, so one could surmise that if students are learning about ecstasy, the teaching methods employed may not be as effective as they could be. Moreover, if students are exposed to only limited and potentially non-evidential based information on the risks associated with ecstasy use from their health education, they may be ill

prepared for environments like a college setting, where they could be easily influenced by their peers.

In a series of studies on the effectiveness of school based drug prevention programs, Tobler & Stratton examined numerous curriculums utilized by schools nationwide to determine the components necessary to make a program effective. They identified five major content domains that each program must contain in order to be successful: knowledge, affective, refusal skills, generic skills and safety (Tobler et al, 1997). Knowledge refers to knowledge of the drugs effects, knowledge of the actual drug use by peers and knowledge of social and media influences regarding the drug (Tobler et al, 1997). Affective refers to each student's self esteem, feelings, attitudes and personal beliefs surrounding drug use (Tobler et al, 1997). Generic skills refer to a student's ability to be assertive, make decisions on their own, efficiently problem solve and most importantly their ability to communicate their beliefs to others (Tobler et al, 1997). Safety refers to a student's skills and ability to protect themselves if and when they are faced with a drug related situation (Tobler et al, 1997).

In addition to identifying the five major content domains that make a drug prevention program effective, they also looked at the ways in which the information was communicated to the students. They found that interactive programs that engaged the students were much more beneficial than non-interactive programs (Tobler et al, 1997). Interactive programs were much more effective because they require participation by all students, especially with activities like role playing and small group discussions (Tobler et al, 1997). Since peer pressure is an immense influence on adolescents when it comes to experimenting with drugs and alcohol, the goal of the interactive programs was to build up interpersonal competence to prepare students with effective refusal skills. Only when drug prevention programs address the five major content domains, and

are delivered in an interactive method is the information effectively conveyed to students. This was evidenced by lower rates of use.

Multiple studies have indicated a universal low risk perception of ecstasy, and when interpreted in terms of education, this simply translates to a lack of knowledge regarding risk information (Gamma et al, 2005). In terms of the aforementioned five major content domains that make a drug prevention program effective, the deficit in risk information is directly related to the first domain of knowledge: understanding the effects, the actual drug use by peers and the social and media influences regarding the drug. This belief in the low risk nature of ecstasy was supported when many users reported that they would most likely stop using ecstasy if it was bad for their health (Gamma et al, 2005). This simply shows that a vast majority of individuals do not perceive ecstasy use as detrimental to their health, but rather that it has minimal if any negative consequences. This study concluded that it was the presence of an actual health problem that had the greatest influence on deterring use of ecstasy, as opposed to popular media, drug information campaigns and even research in communicating risks (Gamma et al, 2005). This relates back to the study on the recreational use of ecstasy, where none of the participants knew a user who had actually ever experienced any negative side effects (Bahora et al, 2009).

It seems as though individuals base their decision to use ecstasy off of information and experiences from their friends, and the lack of immediate negative health consequences only serves to confirm their belief of low risk. This only strengthens the argument that drug prevention programs in high school need to be communicated effectively to students in order to prepare them with evidence based facts on the effects and risks associated with using. If students are not presented with the facts first, their initial interaction with the drug is much more risky as they are uninformed and susceptible to peer pressure and inaccurate facts about the perceived low risk nature of the drug. It comes as no surprise that participants in a study on the perception

of safety of ecstasy indicated a mistrust in government sources on drug information, citing independent drug information websites as more accurate and truthful (Gamma et al, 2005). Government drug campaigns often use the scared straight tactic of communicating drug information, which may be why many people view it as much less credible. Simply presenting the negative consequences, or what are often referred to as “fear appeals” has shown to be ineffective, and in some cases even has the opposite effect desired (Peters et al, 2007).

Critique of Empirical Studies

While there has been a substantial amount of quantitative research measuring ecstasy use and its neurological effects, there is a sizeable gap when it comes to qualitative research measuring the underlying the sources of people’s perceptions on its use, risks and effects of the drug. While quantitative research is beneficial to understanding and conceptualizing the prevalence of the drug and extent of its use, it can be rather black and white; either a person is a user or they are not. Quantitative studies typically consist of surveys, questionnaires and self-reporting methodology. While these tools permit researchers to gather data from large numbers of individuals, they can be rather dichotomous and do not allow an individual to naturally digress into his/her personal perceptions and opinions of the drug. In this sense, quantitative literature is limiting because it may overemphasize the outcome of ecstasy use while underemphasizing the processes leading up to the decision to use or not.

Accordingly, the current study utilized a focus group methodology with the goal of illustrating the nuances of users’ and nonusers’ knowledge, expectations, perceptions of risk and prevalence of use. With the intent to try and understand the disconnect between the actual risks of MDMA and people’s perceived risks, it is crucial to examine the process by which their views were cultivated and their sources of information. In the current study, we will endeavor to address these points by examining both the extent to which ecstasy is addressed in high school

drug prevention curricula and the extent to which evidence-based programs are being implemented.

Description of Current Study

Although previous research has thoroughly documented the prevalence and predictors of ecstasy use, less is known about how perceptions of risk related to ecstasy use are formed. This study will build upon the previous research by examining the extent to which ecstasy is covered in high school drug prevention curricula. Moreover, this study will offer a more in-depth understanding of the influence high school drug prevention curricula has on adolescents' perception of the risks related to ecstasy use and ultimately their decision whether to use.

Many studies have examined positive and negative expectancies of ecstasy and their influence on use; however, one of the strengths of the current study is that it examines how these expectancies are formed. Most students are first exposed to drug prevention education in high school through drug awareness curricula taught by their health teacher. Research by Crosse et al found that a surprisingly low number of schools were utilizing evidence based drug prevention programs. Although the findings do not speak to ecstasy education specifically, they suggest that it is not common practice to implement evidence-based programs. With numerous evidence-based programs available that are supported by empirically proven ways of effectively communicating the information to students, the study also looks to examine the influence and prevalence of the use of the scared straight tactic in communicating drug information to students. By focusing on a college age population, the study looks to examine the extent to which previous drug prevention programs were able to adequately prepare students with both knowledge as well as communication skills in order to make their own informed decisions on whether to use or not.

Another important contribution of the current study is that it will examine the expectancies related to ecstasy use of both users and nonusers. Many studies have focused on

ecstasy expectancies solely through the lens of the user. However, this study examines both users and nonusers in order gain a comprehensive understanding of the differences in expectancies in relation to perception of risk and ultimately use.

Hypotheses

In light of the previous literature, the following hypotheses were proposed:

- (1) College students' perceptions of ecstasy will be largely shaped by peers and media, as opposed to previous health education. This prediction is supported by the set and setting theory, in combination with the limited ecstasy education students are exposed to resulting in certain influences being more potent than others.
- (2) College students' perceptions of the risks related to ecstasy use will be limited and nonspecific. This prediction is supported by the lack of ecstasy education in high school drug prevention curricula nationwide. When ecstasy is addressed in school-based programming it is typically presented briefly and only touched on once.
- (3) Drug prevention curricula will be designed by individual teachers as opposed to utilizing evidence based, nationally recognized programs and will hardly touch on the effects of ecstasy. This prediction is supported by the findings of Crosse et al, where less than 10% of high school nationwide utilized evidence-based drug prevention curricula.

Method

Participants

College student sample. A total of 24 male ($n = 12$) and female ($n = 12$) students currently enrolled at Trinity College agreed to participate in the focus groups. The mean age for the participants was 20.54 years old, with a standard deviation of 1.56. Participants reported their race/ethnicity to be the following: 87.5% Caucasian and 12.5% a minority race. By year level,

25% were first year students, 8.3% were sophomores, 12.5% were juniors and 54.2% were seniors. Of the 24 participants 62.5% ($n = 15$) reported that they had used ecstasy in their lifetime and 37.5% ($n = 9$) denied ever having used ecstasy.

Health educator sample. A total of 55 health educators were contacted from various high schools across Connecticut, each receiving an email detailing the study as well as a link to a brief online questionnaire. A total of 11 health educators completed the online survey.

Measures

Focus group script. A prewritten script consisting of four overarching questions was utilized across the three separate focus groups sessions in order to maintain consistency. The questions were developed based on several sub-scales from the MDMA Belief Questionnaire (Businelle et al., 2007) namely the Global positive effects, Safety and Health Risks subscales. Since each question was intentionally broad and all encompassing, numerous follow-up questions also were scripted in order to encourage participants to provide more detailed and thorough responses. For example, the first question was, "When you think about ecstasy, what are your initial thoughts?" As the opening question, it was purposefully broad to allow the participants to truly reflect on their initial perceptions of the drug. However to gain more thorough responses, additional questions included, "What class of drugs do you think ecstasy is in?" or "What street names come to mind?" or "What are the differences between molly, ecstasy and MDMA?" or "Why would someone take ecstasy?" The second question was, "What are some of the positive connotations you think of regarding ecstasy?" Following this broad question, additional questions included, "How are people's moods affected by ecstasy?" or "How is a person's sex drive influenced by ecstasy?" or "How do people physically perceive others or themselves while on ecstasy?" or "Would a person enjoy dancing and parties more when they are on ecstasy?" In contrast to the second question, the third question was, "What are some of the

negative connotations of ecstasy?" Following this broad question, additional questions included, "What are potential health risks of taking this drug?" or "How often do you think ecstasy is used in combination with other drugs such as alcohol or marijuana?" or "When it's not in its pure form, what other substances might be in the ecstasy pill?" or "What are the legal consequences of ecstasy use?" The final question was, "When or where did you first learn about ecstasy?"

Following this broad question, additional questions included, "What is your perception of how many students at Trinity use?" or "Do you remember learning about it in high school, was it addressed in drug awareness classes?" or "Have you ever felt social pressure to take ecstasy?" or "Have your friends ever felt social pressure to take ecstasy?"

Post-discussion questionnaire. Following the conclusion of each focus group, participants were administered a brief demographic questionnaire. First, participants were required to fill out information such as their participant code, age, race, gender, grade level and participation in Greek life. The second section inquired about the number of times participants had used ecstasy, marijuana, alcohol or cocaine. For each drug, the response scale ranged from 0 times, to 1-3 times, to 4-6 times, to 6-9 times to more than 9 times. The final section consisted of four scales ranging from 0-100. Ecstasy, marijuana, alcohol and cocaine each had their own scale, and participants were asked to rank the riskiness of each illicit substance.

Health educators survey. A brief online survey was sent out to high school health educators across Connecticut to gather information on the types of programs utilized and teaching techniques for communicating drug prevention education. Purposefully targeting schools from a wide range of geographic as well as socioeconomic areas in Connecticut, health educator contact information was collected by calling the school as well as searching their website faculty pages. Depending on the school, health classes can be taught by either a specific health teacher or the physical education department, therefore staff members from both

departments were contacted as to not miss anyone. The survey contained seven questions with multiple-choice answers. The survey questions included: 1. How many class sessions of drug prevention education do your students receive each year? Possible responses were: "0", "1-3," "3-5" and "5 or more." 2. Is there a specific school based prevention program you implement in your curriculum? 3. Does your curriculum address ecstasy use? 4. What topics do you cover? Possible responses were: "Negative effects," "Positive effects," "Long-term risks" and "Use with other substances." 5. Have you implemented any changes or additions to your curriculum in recent years? For instance, what drugs are emphasized or deemphasized. 6. Can you describe how you communicate this information to your students? Possible responses were: "Small group activities," "Role-playing," "Lecture" or "Other." 7. Do you believe students at your high school are at risk or using ecstasy?

Procedure

Focus groups. All three focus groups were conducted in the same room in order to maintain consistency across groups. Participants were asked to sign in and were provided a detailed consent to read over while the rest of the participants arrived. Once all signed forms were signed and collected, the tape recorders were turned on. Prior to commencing the questioning, the researchers once more reiterated that the focus group was being recorded and that maintaining confidentiality and anonymity were crucial. Confidentiality was emphasized on two levels, both in the steps being taken by the researchers to conserve participants' anonymity, but also as the responsibility of the fellow group members. That is, participants were instructed not to reveal their identity or anyone else's identity in the focus group; participants were also instructed to speak about their attitudes related to ecstasy in a hypothetical manner so as not to reveal their own use of the substance. Each participant was then assigned a code, for example "Participant 1," and was asked to voice their consent to be recorded as part of the study. After all

participants had verbally consented, the focus group commenced with the first scripted question. To further ensure confidentiality but to also assist with later transcription of the focus group, each participant was asked to preface their response by stating their participant code. When deemed necessary by the researchers, further clarification or probing was used. At the conclusion of each focus group the recorders were turned off, and the participants were asked to complete the paper survey.

Health educators survey. Three rounds of emails were sent out to the health educators, and after keeping the survey open for a month, the survey was closed after a total of 11 responses were received. The data was then analyzed for frequencies. Due to anonymous nature of the survey it could not be determined if there was equal representation of urban, suburban, rural schools.

Data Analysis

The qualitative data collected in this study was analyzed using the systematic method of thematic analysis developed by Braun and Clarke (2006). Their article served as a point of reference that assisted in maintaining organization and consistency throughout the process of data analysis. Since the nature of qualitative research analysis is much more flexible and open to the interpretation of the researcher, adhering to this approach provided a more routine and systemized analysis. Braun and Clarke's approach to thematic analysis provides specific sequential steps to identify and code subthemes, as well as the larger overarching themes that are crucial to interpreting and understanding the results of the study.

The first step of analysis took an inductive approach, examining all three focus group scripts and identifying and coding them for a broad range of subthemes. As Braun and Clarke (2006) explain, "Researcher judgment is necessary to determine what a theme is. 'Keyness' of a

theme is dependent on whether it captures something important in relation to the overall research question” (p. 82). This means that the themes identified may not directly relate to the questions that were asked of the participants. Therefore, the focus group scripts were scanned and coded for themes of importance, regardless of if they related directly to the questions asked. For example, when participants were asked, “Why would someone take ecstasy?” a response was the following: “It gets rid of inhibitions, makes you more outgoing and it heightens your senses both visually and physically.” For this response, “it gets rid of inhibitions,” “makes you more outgoing” and “heightens your senses both visually and physically” were coded for “positive psychological effects of ecstasy.” When participants were asked, “What are some of the negative connotations of ecstasy?” a response was the following: “It’s bad for your brain, I’ve heard it’s like taking a scoop out of it.” For this response, “it’s bad for your brain” was coded as a negative physical effect of ecstasy, whereas “it’s like taking a scoop out of it” was coded for “lack of knowledge.” This inductive approach allowed for a wide range of themes to be identified. It is important to note that when coding the data a *semantic* approach was utilized, meaning that participants’ comments were analyzed at face value and not taken apart in search of deeper meaning. When using a *semantic* approach, “the analytic process involved a progression from description, where the data have simply been organized to show patterns in semantic content, and summarized, to interpretation, where there is an attempt to theorize the significance of the patterns and their broader meanings and implications” (p. 84).

Specific steps in thematic analysis. As described by Braun and Clarke (2006) the first phase of the thematic analysis was to become familiar with the data, which was done through transcribing and re-reading data, while simultaneously noting initial ideas that appear. During the first review of the focus group scripts, we noticed both similarities and differences in the ideas

raised in three groups. For example, many of the participants used similar ecstasy terminology such as “molly” or “MDMA” and noted a connotation of ecstasy with rave culture and music festivals. Regardless of the many similarities that arose across the three groups, each group maintained its' own sense of autonomy. For example, one group continually mentioned the connotation between ecstasy and wealth, emphasizing that it was a drug used mainly by individuals occupying a higher socioeconomic status.

The second phase was to generate initial codes (Braun & Clarke, 2006), which was done by coding interesting features across the entire data set, and combining participant utterances relevant to each code. For example, while reading the script, codes such as the “purity of molly” and that “ecstasy could be laced with other drugs” continued to surface across all three focus groups. These codes were classified as “contamination.” Through collaboration between researchers, these same steps were applied across all of the transcripts to identify other possible codes across the three scripts.

The third phase was to search for themes (Braun & Clarke, 2006), which was done by clustering codes into potential themes. To begin, a broad range of themes was identified. In some cases, it was evident that a single code could fit into multiple themes. For example, statements such as, “I think molly is more pure, where ecstasy is cut with various types of drugs” can be placed in both “contamination of the drug” as well as “knowledge of the drug.” In contrast, statements such as, “not being able to obtain the same level of happiness again” and “coming down the next day” and “being depressed” were very clearly related to negative effects of ecstasy were placed in the subtheme “negative psychological effect of ecstasy.”

In the fourth and fifth phases, the researchers reviewed and narrowed down the themes to generate clear definitions and names. Since the process of thematic assessment is very fluid in

nature, new themes continued to arise each time the script was re-read. For example, under the overarching theme of “positive effects of ecstasy,” two subthemes were initially identified: “psychological” and “physical.” However, after re-reading the scripts it became evident that within each subtheme there were two different driving forces: personal and social. For example, a response such as “to open your mind to new things” was placed under the subtheme “personal psychological,” whereas a response such as “to have fun and to love others around you” was placed under the subtheme “social psychological.”

The only variation from Braun & Clarke (2006) approach was in the quantification of subthemes, which was done by tallying the frequency of each theme and subtheme. Additionally, each theme and subtheme was then examined in terms of whether the utterances came from users versus nonusers.

Results

Themes and Subthemes from Focus Groups

Knowledge of ecstasy. Across all three focus groups, 63% of participants endorsed ecstasy use, while 37% did not. Under the overarching theme of “Knowledge of Ecstasy” six subthemes were identified across all three focus groups. The first theme that we identified was “Frequency of Use,” which we identified out of participants’ responses to how many students at Trinity College they believed were ecstasy users. This theme was further broken down into two subthemes: “Frequent Use” and “Infrequent Use.” For example, when asked how many students at Trinity were users one participant responded, “If I could quantify it I would probably say 10%, or maybe 8% have tried it at least once.” A participant followed that comment by stating, “I think it is more than that. I would say 10% have done it more than once, and a larger percentage have done it at least once.” Another participant responded, “I think it comes in waves, I don’t

think people do it that frequently, but when they do it will be for a big event maybe like twice or three times a year.” Therefore, responses such as “10% more than once,” “people that are crazy” and “for a big event” were placed in the subtheme “Frequent Use” (See Figure 1). Across all three focus groups there were a total of 9 utterances falling under the subtheme “Frequent Use,” with 55.56% coming from users and 44.44% coming from nonusers (See Table 1). Responses such as “8% have tried it once,” “larger percentage has used only once” and “40% have used” were placed in the subtheme “Infrequent Use” (See Figure 1). Across all three focus groups there were a total of 6 utterances falling under the subtheme “Infrequent Use,” with 50% coming from users and 50% coming from nonusers (See Table 1). Although we would not apply a t-test to compare the groups given the lack of independence in the data, the percentages suggest no apparent differences between users’ and nonusers’ perceptions of frequency of use.

The second subtheme identified under the overarching theme “Knowledge of Ecstasy” was “Classification,” which arose out of participants’ responses to what class of drug they believed ecstasy was. For example, responses such as “stimulant,” “upper,” “party drug,” “love drug” and “separate from street drugs” were placed under this subtheme (See Figure 1). Across all three focus groups there was a total of 47 utterances falling under the subtheme “Classification,” with 64% coming from users and 36% coming from nonusers (See Table 1). Users were overwhelmingly more vocal than nonusers when asked this question, providing 30 of the 47 utterances. Due to their direct experience with the drug, most spoke with confidence, coming off as experts on the classification of the drug. Users were more accurate in classifying ecstasy, making statements such as “stimulant” and “upper,” whereas nonusers provided more social definitions such as “party drug” and “love drug.”

The third subtheme identified under the overarching theme “Knowledge of Ecstasy” was “Educationally Learned.” This subtheme arose out of participants’ responses to when and where

they first learned about ecstasy. For example, one participant responded, "Health class, probably in 8th grade, they taught us the good and bad of drugs and how to use them responsibly, but they advised not to use them obviously." Another participant clarified an important distinction by stating, "Are you referring to actually hearing about it or your own experience/experiencing someone doing it? I was first exposed to it at least in high school, but I think that later in high school or the beginning of college when you first go to a rave or concert, that's when you're first physically there with it." Therefore, responses such as, "high school psych class," "middle school" and "health class" were placed under this subtheme. Across all three focus groups there was a total of 10 utterances falling under the subtheme of "Educationally Learned," with 50% coming from users and 50% coming from nonusers (See Table 1). This suggests that there was similar exposure to ecstasy in users and nonusers through educational settings.

The fourth subtheme identified under the overarching theme of "Knowledge of Ecstasy" was "Socially Learned." This subtheme also arose out of participants' responses to when and where they first learned about ecstasy. It was important to distinguish between "Educationally Learned" and "Socially Learned" because these two sources of information may have different influences on an individual's decision to use. For example, the health risks and prevalence of ecstasy use communicated to an individual could be very different depending on whether it came from a drug prevention curriculum compared to a peer. In a study on the perception of safety of ecstasy by Gamma et al (2005), participants indicated mistrust in government sources on drug information, citing independent drug information websites as more accurate and truthful (Gamma et al, 2005). In the case of high school students, information on the health risks of ecstasy communicated by authority figures (health educators) in a state mandated drug prevention class would be trusted much less than statistics obtained from their peers who found the information on an independent media source. When asked about where they first learned

about ecstasy, one participant responded, "I feel like you see it in movies a lot but then like I never saw people doing it until I came to Trinity." Another responded, "I definitely wasn't around anyone I knew that had done it or was doing it until I was in college." Therefore, responses such as "homecoming dances," "experienced in college" and "movies" were placed under this subtheme (See Figure 1). Across all three focus groups there was a total of 7 utterances falling under the subtheme "Socially Learned," with 86% coming from users and 14% coming from nonusers (See Table 1). This apparent distinction between utterances from users compared to nonusers emphasizes the influence the social environment can have on an individual's decision to use.

The fifth subtheme identified under the overarching theme of "Knowledge of Ecstasy" was "Lack of Information." This subtheme arose across multiple questions asked during the focus group. For example, when asked about the negative connotations of ecstasy one participant responded, "It's bad for your brain, I've heard its like taking a scoop out of your brain." When asked about the purity of ecstasy one participant responded, "I think there is a ton of misinformation on college campuses about the difference between ecstasy, molly and MDMA and what they do. I feel in general that people think that molly is in some ways better for you because it is pure, even though not that much research has been done on it." When asked about the safety of the ecstasy one participant responded, " There have been a lot of studies recently that molly itself, like MDMA, is very controversial. It could have absolutely no effect on the brain, like the whole tablespoon thing is kind of an old concept." Therefore, responses such as "need to be more educated," "not enough research" and "trying to learn more" were placed under this subtheme (See Figure 1). Across all three focus groups there were a total of 25 utterances falling under the subtheme "Lack of Information," with 68% coming from users and 32% coming from nonusers (See Table 1).

The sixth subtheme identified under the overarching theme of “Knowledge of Ecstasy” was “Accessibility.” This subtheme arose out of participants’ descriptions of a typical user, as well as where they first learned about ecstasy. One participant responded, “It’s accessible in underground rave scenes a lot, and outside of college I think it’s a lot more accessible to other people.” Another participant followed up by stating, “Ecstasy is big in colleges across the country and it’s even leaking into seniors and juniors in high school, which is wild.” Therefore, responses such as “accessible in rave scenes” and “prevalent in college” were placed under this subtheme (See Figure 1). Across all three focus groups there was a total of 5 utterances falling under the subtheme “Accessibility,” with 80% coming from users and 20% coming from nonusers (See Table 1).

In examining college students’ perceptions ecstasy, it was hypothesized that they would be largely shaped by peers and media, as opposed to previous health education. This hypothesis was supported. Across all three focus groups participants remembered their first exposure to ecstasy being in middle school or high school health class, however few mentioned any lasting impact of the prevention program. Most students mentioned their first exposure to ecstasy was in college, where it was prevalent in the party scene and often being passed around casually. Their perceptions of the drug, especially MDMA and molly, were formed through both interactions with their peers as well as the social climate of the school. When referring to the social climate of the institution where the data were collected, many participants stated that the pure prevalence of ecstasy use on campus made it seem somewhat normalized and, in a sense, acceptable. Across the domain of knowledge, users were more outspoken, providing 62% of the total utterances. Users were routinely the first to respond to the questions, providing in-depth insight into the classification and effects of ecstasy. Nonusers’ responses were often in agreement or were restatements of users’ previous comments.

Perceived risks of ecstasy use. Under the overarching theme of “Risks” related to ecstasy use, four subthemes were identified across all three focus groups. The first was “Legal” which arose out of participants’ responses when asked about the negative connotations and risks associated with ecstasy use as well as the legal consequences of using. For example, responses such as “It’s an illegal substance” and “it’s illegal to distribute” were placed under this subtheme (See Figure 2). One participant responded, “It’s an illegal substance, so if you were to be caught with it, I would assume there would be repercussions.” Across all three focus groups there was a total of 5 utterances falling under the theme “Legal,” with 20% coming from users and 80% coming from nonusers (See Table 2). Nonusers seemed to be more cognizant of the possibility legal risks than users.

The second subtheme identified under the overarching theme of “Risks of Ecstasy” was “Contamination.” This subtheme arose multiple times when participants were asked about the health risks associated with ecstasy use, the negative effects of ecstasy use and the purity of ecstasy. When asked about the health risks associated with ecstasy use, one participant responded, “Ecstasy is probably not very safe given the deaths at music festivals through the last couple of years, and the fact that it takes tablespoons out of your brain.” When asked about the negative effects of ecstasy use, another participant responded, “You never really know what you’re taking, so I think sometimes you can take something and there can be bigger consequences than you originally anticipated.” When asked about the purity of ecstasy and the differences between ecstasy, molly and MDMA, one participant responded, “I think molly is more pure, where ecstasy is cut with various types of drugs.” Therefore, responses such as “cut with other drugs,” “laced with other substances” and “never know what you’re taking” were placed under this subtheme (See Figure 2). Across all three focus groups there was a total of 11

utterances falling under the theme “Contamination,” with 64% coming from users and 36% coming from nonusers (See Table 2).

The third subtheme identified under the overarching theme of “Risks of Ecstasy” was “Prior Drug Use.” This subtheme arose when participants were asked to describe the typical ecstasy user. For example, one participant responded, “Usually people that do other drugs before hand, it is not usually the first drug you try, usually you escalate from weed, then pill popping, then ecstasy.” Similarly, another participant responded, “Someone who drinks regularly or has tried marijuana, cocaine or other drugs first.” Therefore, responses such as “has tried marijuana or cocaine,” “people that use other drugs” and “not the first drug you try” were placed under this subtheme (See Figure 2). Across all three focus groups there was a total of 5 utterances falling under the theme “Prior Drug Use,” with 40% coming from users and 60% coming from nonusers (See Table 2).

The fourth subtheme identified under the overarching theme of “Risks of Ecstasy” was “Use With Other Drugs” This subtheme arose when participants were asked whether they believed ecstasy was used in combination with other drugs. For example, one participant responded, “I would assume a lot because it is done at parties and it is a drug that gets passed around a lot.” Another participant responded, “Very often. I think alcohol and ecstasy are taken together. Many people will drink less because they’re on ecstasy, but I know that people who are on ecstasy usually do mix it with alcohol and maybe even cocaine.” Therefore, responses such as “mix with alcohol,” “taken with a downer to cool off” and “used with cocaine” were placed under this subtheme (See Figure 2). Across all three focus groups there was a total of 11 utterances falling under the theme of “Use With Other Drugs,” with 73% coming from users and 27% coming from nonusers (See Table 2).

In examining college students' perceptions of the risks related to ecstasy use, it was hypothesized that they would be limited and nonspecific. This hypothesis was supported. Participants attributed the greatest risks of use to potential contamination of the drug, a topic that was frequently mentioned, but few participants had any knowledge to elaborate further on. For example, while most participants voiced concern over the impure nature of ecstasy, none were able to elaborate on what other substances ecstasy was laced with that contaminated it. Although the fear of contamination was widespread, most participants were unsure of the actual health risks that could result. Across the domain of perceived risks, nonusers were much more likely to cite the legal risks of ecstasy use than users. Nonusers were also much more likely to describe ecstasy use as a progression from prior drug use. Interestingly, users were much more likely to cite ecstasy use in combination with other drugs.

Positive effects. Under the overarching theme of "Positive Effects" related to ecstasy use, five subthemes were identified across all three focus groups. The first was "Psychological," which was comprised of two components: "Intrapersonal and Interpersonal." These two subthemes were identified after participants responded to the question of why someone would take ecstasy. Responses were coded for "Intrapersonal Psychological" when a participant identified reasons for taking ecstasy in terms of seeking a positive effect or benefit to him or her as an individual. For example, responses such as "to open your mind to new things," "to experiment," or "for the feeling of euphoria and happiness" were placed under "Intrapersonal Psychological" (See Figure 3). Across all three focus groups there was a total of 19 utterances falling under the subtheme of "Intrapersonal Psychological," with 42% coming from users and 58% coming from nonusers (See Table 3). Responses were coded for "Interpersonal Psychological" when a participant identified reasons for taking ecstasy in terms of the social environment or as a means of enhancing their social interactions. For example, responses such as

“to step out of your comfort zone,” “to get rid of inhibitions” or “to have fun and to love others around you” were placed under “Interpersonal Psychological” (See Figure 3). One participant summed up the essence of the “Interpersonal Psychological” theme by stating, “It’s just like everything is supposed to be better, like you’re supposed to perceive everybody, and it’s like you see happiness instead of negatives. It has a positive effect on you and the people around you.” Within the subtheme of “Psychological” it was important to distinguish between the intrapersonal psychological and interpersonal psychological reasons behind why individuals take ecstasy because they were distinctly different from one another. Across all three focus groups there was a total of 28 utterances falling under the subtheme of “Interpersonal Psychological,” with 61% coming from users and 39% coming from nonusers. (See Table 3).

The second subtheme identified under the overarching theme of “Positive Effects” was “Physiological,” which also was comprised of two components: “Personal Physiological” and “Social Physiological.” These two subthemes were also identified in participants’ responses to the question of why someone would take ecstasy. Responses were coded for “Personal Physiological” when a participant identified reasons for taking ecstasy in terms of enhancing their perceptions. For example, responses such as “To heighten your senses,” or “Because it is visually stimulating” were placed under “Personal Physiological” (See Figure 3). One participant summed up this subtheme by stating, “Someone would take ecstasy because it’s fun and is supposed to heighten your senses visually and physically. That’s the idea behind it.” Across all three focus groups there was a total of 5 utterances falling under the subtheme of “Personal Physiological,” with 80% coming from users and 20% coming from nonusers (See Table 3). Responses were coded for “Social Physiological” when a participant identified reasons for taking ecstasy in terms of physically heightened senses but with an emphasis on increased desire for contact with others. For example, responses such as “It increases sex drive” or “it

promotes more physical interactions” were placed under “Social Physiological” (See Figure 3). Across all three focus groups there was a total of 9 utterances falling under the subtheme of “Social Physiological,” with 56% coming from users and 44% coming from nonusers (See Table 3).

The third subtheme identified under the overarching theme of “Positive Effects” was “Music.” This subtheme arose many times and in response to multiple questions. For example, when participants were asked why someone would take ecstasy, responses ranged from “it’s a party drug often associated with raves” to “music festivals” to “heavy techno music” to “the rise of house music” (See Figure 3). When participants were asked what positive connotations were associated with ecstasy, responses were also “concerts” and “music festivals” (See Figure 3). One participant responded, “ The music culture today is really heavy techno music and some people don’t really enjoy it so they feel like they need to roll to enjoy it. I think the music has a lot to do with the fact that molly, in particular, has become more and more popular.” Even when asked where they first learned about ecstasy the subtheme of music arose, in responses such as “I was first exposed to it at least in high school, but in the beginning of college when you first go to raves and concerts that’s when you are first physically right there with it.” Across all three focus groups there was a total of 25 utterances falling under the theme of “Music,” with 68% coming from users and 32% coming from nonusers (See Table 3).

The fourth subtheme identified under the overarching theme of “Positive Effects” was “Dancing.” This subtheme arose many times in response to the positive connotations associated with ecstasy. Dancing was often mentioned indirectly when participants were asked about the health risks of ecstasy, as many mentioned that dehydration could result from excessive sweating due to dancing for hours on end. It was also closely tied to responses related to music. Across all

three focus groups there was a total of 6 utterances falling under the theme of “Dancing,” with 67% coming from users and 33% coming from nonusers (See Table 3).

The final subtheme identified under the overarching theme of “Positive Effects” was “Wealth.” This subtheme arose when participants were asked whether they thought of ecstasy on its own or associated with other drugs. For example, one participant responded, “It’s a really wealthy drug. It has a connotation of being an upper class sort of drug, where as I think heroin, for the most part, wouldn’t have that same connotation.” Across all three focus groups there was a total of 7 utterances falling under the theme of “Wealth,” with 71% coming from users and 29% coming from nonusers (See Table 3).

In examining students’ perceptions of ecstasy in general, it was hypothesized that peers and media, as opposed to previous health education, would have more influence. This hypothesis was supported. Across the domain of positive effects of ecstasy, users were more likely to endorse the benefits of use than nonusers. Users repeatedly referenced the role the music scene played on the decision to use, citing raves and music festivals as havens for ecstasy use. The fast paced, high-energy environment of house music festivals fostered the need for a drug that kept an individual energized and active for hours on end. In addition, the frequent references to molly and MDMA in lyrics convey the message that the drug was mainstream.

Negative effects. Under the overarching theme of “Negative Effects” related to ecstasy use, three subthemes were identified across all three focus groups. The first was “Psychological” which arose out of participants’ responses when asked about the negative connotations and risks associated with ecstasy use. For example, responses such as “feel out of control,” “addicted to the high” and “depression” were placed under this subtheme (See Figure 4). One participant responded, “I’ve heard a lot of stories about people overdosing on it; you can die from it” and another responded noting, “there are long term consequences of use, such as mental capacity

being decreased.” Across all three focus groups there was a total of 16 utterances falling under the theme of “Psychological,” with 50% coming from users and 50% coming from nonusers (See Table 4).

The second subtheme identified under the overarching theme of “Negative Effects” was “Physiological.” For example, responses such as “dehydration,” “death,” or “harm to your brain” were placed under this category (See Figure 4). When asked about the health risks associated with ecstasy use, one participant responded, “Everything I’ve read is like it’s really bad for your brain, like the synapses and stuff.” Across all three focus groups there was a total of 28 utterances falling under the theme of “Physiological,” with 61% coming from users and 39% coming from nonusers (See Table 4).

The third subtheme identified under the overarching theme of “Negative Effects” was “Social Pressure.” This subtheme arose when participants were asked about the prevalence of use on campus. For example, responses such as “feel like you’re missing out,” “have to take ecstasy to enjoy music” and “pressure to use at festivals” were placed under this subtheme (See Figure 4). One participant clarified the type of social pressure felt with ecstasy use by stating, “I wouldn’t say pressure like hard pressure, but there have been events where I know a lot of people are doing it, so in that way it is persuading others to use.” Another participant stated, “If someone is going to some sort of festival there’s definitely a lot more pressure to do it because someone usually has more than they need for just themselves.” Across all three focus groups there was a total of 27 utterances falling under the theme of “Social Pressure,” with 63% coming from users and 37% coming from nonusers (See Table 4).

Both users and nonusers expressed equal concern over the negative psychological effects of ecstasy. Users expressed more concern over the negative physiological effects of ecstasy than nonusers, most likely because they had directly experienced them. In terms of social pressure,

the majority of the utterances came from users. This means that the social pressure and party scene at the college influenced their decision to use ecstasy, which supports the hypothesis that peers would have the greatest influence over students' perceptions of ecstasy and decision to use.

Health Educators Survey

When asked how many class sessions of drug prevention education their students received each year, the mean response was 3 with a standard deviation of 1.14. The highest number of classes mentioned was 4 per year, and the lowest was 1 per year (See Figure 5). In examining the differing drug prevention curricula utilized nationwide, it was hypothesized that the curricula in Connecticut high schools would be designed by individual teachers as opposed to utilizing evidence based, nationally recognized programs and will hardly touch on the effects of ecstasy. When asked whether a specific school based prevention program was implemented in their curriculum, only 36% responded yes, meaning an overwhelming 64% of teachers reported crafting their own drug prevention curricula. For the three teachers who did implement a specific school based prevention program, these programs included "Class Action Underage Drinking," a board approved "Wellness Program" that drug prevention education was a part of, and an all-encompassing prevention program that was part of grade 9-12 curriculum. When asked whether their curriculum addressed ecstasy use, 63% reported that they did. When asked about which topics of ecstasy used were covered, 50% of teachers cited the negative effects, 30% cited use with other substances and 20% cited the long-term consequences of use (See Figure 6). When asked if any changes or additions had been implemented to their program in recent years, those that responded yes cited the main addition of prescription drug use. When asked how this info was communicated to students, most teachers selected small group activities as well as role-playing. Only two teachers reported that their curricula were communicated solely through

lecture. When asked if they believed that students at their high school were at risk or using ecstasy nearly 82% answered yes.

Discussion

College Students' Perceived Risks of Ecstasy

Of the four overarching themes identified in these findings, the focus of this study is in the Knowledge and Risk responses of participants. Across the theme of Knowledge of Ecstasy, users overwhelmingly were more outspoken than nonusers. However, it is important to note that the fact that users voiced their opinions more frequently had no correlation to accuracy of responses. Across all three focus groups participants remembered their first exposure to ecstasy being in middle school or high school health class, however few mentioned any lasting impact of the prevention program on their attitudes towards ecstasy or decision to use. Interestingly, the majority of participants cited college as the most influential encounter with ecstasy, as it was prevalent in the party scene and often being passed around casually. Individuals largely based their decision to use ecstasy off of information and experiences from their peers. Similar to the findings of Businelle (2007) where individuals who had a positive experience with a drug were more likely to downplay the negative consequences, the lack of immediate negative health consequences communicated by users to their peers only served to confirm the perception of low risk. This finding supports the hypothesis that college students' perceptions of ecstasy would be largely shaped by peers and media, as opposed to previous health education.

In examining college students' perceptions of the risks related to ecstasy use, participants most often cited the potential contamination of the drug, but few participants were able to elaborate on the nature of the contamination. Although the fear of contamination was widespread, most participants were unsure of the actual health risks associated with ingesting

contaminants. This supported the hypothesis that college students' perceptions of the risks related to ecstasy use would be limited and nonspecific. In addition, when commenting on the health risks associated with use, users were more likely to cite specific negative effects such as dehydration, depression, or feelings of unhappiness, whereas nonusers were more likely to make sweeping statements such as "it's like taking scoops out of your brain."

Discrepancies in User Versus Non User Responses

Knowledge responses. Of the overarching themes present in these findings, the largest was knowledge. Across all three focus groups, participants' responses were coded as knowledge whether they in fact were knowledgeable on the topic, or whether they displayed a significant lack of knowledge. Users were much more vocal when it came to this theme, providing the majority of responses for the subthemes of Frequency of Use, Location (where ecstasy is used), Classification (names and description of composition), Socially Learned (influence from peers, media and environment), Lack of Information and Accessibility (availability of the drug). One of the most pertinent discrepancies is the abundance of responses from users in the subtheme of Lack of Information. These findings suggest that although users were largely unaware on the actual composition, effects, and health consequences of ecstasy, they continue to use. This finding is somewhat similar to Businelle et al., (2007) where individuals who had a positive experience with a drug were more likely to downplay the negative consequences. In this sense, the lack of immediate negative health consequences communicated by users to their peers only served to confirm the widespread perception of low risk. This also explains the theme of Socially Learned that we extracted from the data. Across all three focus groups participants remembered their first exposure to ecstasy being in middle school or high school health class, however few mentioned any lasting impact of the prevention program on their attitudes towards ecstasy or decision to use. Interestingly, the majority of participants cited college as the most influential

encounter with ecstasy, as it was prevalent in the party scene and often being passed around casually. Individuals largely based their decision to use ecstasy off of information and experiences from their peers. Under the theme Contamination, participants most often cited the potential contamination of the drug, but few participants were able to elaborate on the nature of the contamination. Although the fear of contamination was widespread, especially among users, most participants were unsure of the actual health risks associated with ingesting contaminants. A quote from a user summarizes the complete lack of information that exists on college campuses:

“I think that there is a ton of misinformation on college campuses about the difference between ecstasy/molly/mdma and what they do or why they are different. From my impression, I feel in general that people feel that molly is in some ways better for you because it is pure, even though not that much research has been done on it. I just think that there are a lot of wrong opinions about what it does. My philosophy professor freshman year, the first thing he said to us on the first day of class was whatever you do don't take molly because there isn't enough research done on it.”

Coming from a user of ecstasy, this statement illuminates one of the most concerning aspects of the drug. Since MDMA and molly are relatively new forms of ecstasy on the market, there has been very little research done on their effects. While the short-term effects such as dehydration and temporary depressive feelings have been well documented, the long term effects are largely unknown. This lack of research has been interpreted as a lack of consequences. Users of the drug, especially college age students are blissfully unaware of the negative consequences. This user in particular was not only warned by a professor upon entering college, but also expressed a personal concern over the lack of research done on the effects, however he/she continued to use. This statement, however, highlights an important point in terms of future implications of the study. This user emphasized the need for a more widespread understanding of the negative consequences and risks, suggesting the current negative outcomes of the drug would decrease if students were better informed. Due to the high prevalence of utterances under this

theme, the future implications of this study will focus on fostering a greater knowledge based prevention method for college students.

Risk Responses. Under the overarching theme of Risks, users and nonusers responses were distinctly divided across the four subthemes. Nonusers reported the majority of utterances for Legal and Prior Drug Use. This suggests that for nonusers, the threat of legal ramifications, both for using and for distributing ecstasy served as a key influential factor in their decision not to engage in use. This finding is similar to Bahora et al (2009), where the illegal nature of the ecstasy was viewed as the main risk associated with use. Nonusers also reported the majority of utterances for Prior Drug Use. This suggests that nonusers perceived the typical ecstasy user as someone with previous patterns of substance use, suggesting that ecstasy use was not typically an isolated incident.

Users reported the majority of utterances for Contamination and Use with Other Substances. In terms of Contamination, the majority of participants expressed concern over the level of purity and potential for contamination by other drugs; however, when questioned further, few participants were able to elaborate on the nature of the contamination. Several users brought up the fear of using ecstasy contaminated with other substances resulting in bigger consequences than originally intended. Since MDMA has a relatively universal low risk perception, individuals are often drawn to it because they believe it is the safer and more “pure” option. However, since MDMA has become mainstream and the demand has skyrocketed, the purity of the drug can differ with every batch made. Several participants cited methamphetamine or bath salts as potential contaminants of MDMA. Therefore, although an individual may think they are putting a relatively “safe” substance in their body, due to the widespread contamination of the drug, the interactions of the drugs can result in a very dangerous combination. In addition, it is interesting to note that just as nonusers identified the typical ecstasy user as a person with

previous patterns of drug use, users themselves reported the majority of utterances for ecstasy use with other substances. Typically, other substances referred to alcohol, however few participants mentioned combining ecstasy with other illicit drugs such as cocaine or marijuana.

Although the risk associated with ecstasy was expected to be a dominant theme across all three focus groups, surprisingly it only accounted for 7.5% of the total utterances (See Table 5). This minimal level of responsiveness suggests a greater theme at large: an overall low risk perception of ecstasy. Short-term health risks were most frequently mentioned, such as dehydration and temporary depressive states. However few long-term health risks were noted. Due to participants responses coded for knowledge, it can be speculated that this was due to the lack of information and research available on the long-term health consequences.

Positive Responses. Within the overarching theme of Positive Effects, users reported a higher frequency of utterances than nonusers. This finding supports the notion of a drug outcome expectancy, the belief that the way an individual believes a certain action, in this case taking ecstasy, will lead to a certain outcome, in this case the high of ecstasy (Businelle et al, 2007). Since users reported more positive expectancies about ecstasy, it supports the idea that maintaining positive expectancies of drugs may lead to later drug use. Similar results were found in the MDMA Belief Questionnaire, where individuals who reported using MDMA were more likely than nonusers to report positive expectancies and downplay negative consequences (Businelle et al., 2007). Similarly, users who expressed some awareness of health risks associated with ecstasy use still tended to let their positive experiences outweigh their concerns (Bahora et al, 2009). An important discrepancy between users versus nonusers to highlight was that although more users reflected positive views than nonusers, nonusers still contributed a sizeable portion of the utterances within the positive theme.

Two subthemes that emerged within the theme of Positive Effects are worth noting due to their relevance to today's society: Music and Dancing. Historically, ecstasy use has been closely tied to the music scene, making its debut in the 1980's rave culture due to ability of enabling users to remain energized for hours on end. As the music scene evolves, so do the needs and desires of its followers. Today, mainstream music is largely influenced by house and techno beats. At concerts and music festivals, this fast paced, intense and energetic category of music requires more active involvement from its listeners. Concerts today are no longer small scale, they have become mainstream, are widely publicized and attended by tens of thousands. In addition, references to MDMA and molly in lyrics from rap to house music have positioned MDMA at the center of the music scene. This relates back to Zindberg (1984) notion of the set and setting theory. With ecstasy, the most influential factor is arguably the set. As voiced by users, ecstasy has provided the means to stay active and energized for hours in the highly stimulating environment of music festivals.

Negative Responses. The major discrepancy that emerged within this study was that although users reflected more positive attitudes about ecstasy than nonusers, they also expressed more risks and negative effects. This was inconsistent to previous research, which showed that users attitudes typically felt positively towards ecstasy, with nonusers typically having more negative and skeptical views. Perhaps one of the reasons users reported a higher frequency of utterances having to do with the risks and negative effects of ecstasy was because due to their direct experience, they saw themselves as more knowledgeable on the topic than the nonusers. Another potential explanation for this finding is that as the rate of drug use increases each year, so do the occurrences of both positive and negative experiences for users. Users, therefore, are more exposed to certain negative effects of drug use due to the experiential nature. Nonusers

may be less aware of negative effects, because they have not experienced any direct effects of ecstasy or may have fewer peers who use ecstasy.

Within the subtheme of Social Pressure, it is important to note that the majority of utterances came from users. Just as users reported the majority of utterances for Socially Learned within the theme of Knowledge, this suggests that the social aspect of ecstasy use, whether it is the fear of missing out, the desire to have what the other person has, or simply to enjoy the music may have a significant influence in the decision to use.

Drug Prevention Programs

Drug prevention programs are crucial during the high schools years because they are a very impressionable period in an adolescent's life. While the depth and material of the programs vary from school to school, at the most basic level they seek to provide students with enough knowledge and understanding of the risks involved in substance use to prepare them to make their own rational decisions. The success of a drug prevention program is measured by lower rates of substance use by students. Numerous studies have identified drug prevention programs that have been tested and proven effective, yet research shows that high school health departments are neglecting to implement them. Similar to the findings of Crosse et al (2011) where less than 10% of high schools nationwide implemented an evidence-based program, only 36% of high schools in Connecticut reported using a specific school based prevention program, however, while they cited a specific school-based program these programs were not necessarily evidence-based. While the percentage of high schools in Connecticut is markedly higher than the nationwide rate, it must be noted that the sample size was only a fraction of the population examined in the nationwide study. This suggests that in my limited sample the majority of programs being implemented in high schools across Connecticut may have limited effectiveness in impacting substance use. Additionally, given that the topics and depth of the curriculum seems

to be decided on a school-by-school basis, there is no guarantee that accurate and up to date information is being conveyed to students. This finding supported the hypothesis that the majority of the drug prevention programs would not be utilizing evidence-based, nationally recognized programs.

When studying the effectiveness of a drug prevention program it is important to look at both the material being presented as well as the method of delivery. When asked if they believed students at their schools were at risk or using ecstasy, a remarkable 82% of health educators answered yes. Yet when asked if their curriculum covered ecstasy use only 63% responded yes. Although ecstasy was addressed in the majority of programs, all health educators reported other drugs such as alcohol and cocaine as their focus, allotting minimal time to ecstasy education. This supports the hypothesis that drug prevention programs would only briefly touch on the effects ecstasy.

It has been well documented that the way information is communicated to students profoundly impacts the way they interpret it. A study by Tobler et al (1997) found that interactive programs where students were engaged in activity such as role playing and small group discussion were the most effective means of communicating the information to students. This was because interactive programs boosted student's self-confidence, encouraged better communication and taught effective refusal skills. While the majority of high schools in Connecticut reported using some sort of interactive method of delivery, a few reported using solely lectures. Lectures on drug prevention typically take the form of a scared straight approach. Results of a study by Peters et al (2007) showed that when health educators taught through "fear appeals" by only presenting the negative consequences of use, the message was ineffective. When discussing ecstasy's role in drug prevention programs across Connecticut, similar results were found when 50% of health educators reported teaching on the negative effects of use, 30%

on use with other substances and 20% on the long term consequences of use. These findings are encouraging, as they demonstrate that only a small number of health educators are relying solely on lectures to communicate with their students. It also suggests that health educators could appreciably affect students' knowledge as well as behavior around ecstasy simply if more time were devoted to the substance.

Limitations

My research had several limitations. The first was the small sample size of the population examined. While there was an equal distribution of males and females across the three focus groups, the distribution of participants by class year was largely weighted by upperclassmen. The sample size could have been expanded by including an equal number of participants from each grade level. Another limitation of the study was the lack of ethnic and racial diversity among participants. Since the sample population was majority Caucasian students, it may be difficult to generalize the findings to students on other campuses, or non-college attending individuals. This could be improved by including participants with a broader range of ethnic backgrounds. The characteristics of the sample may have influenced the outcome observed in a variety of ways. First, since the majority of participants were seniors, this could have influenced the number of users. The longer an individual is exposed to the college environment and nightlife, the more normalized it becomes to them. While an individual may enter college swearing off drug use, the mere frequency at which they are faced with the drug may influence their initial perception of it. Therefore, it is possible that seniors may have contributed a majority of the user utterances. Additionally, since the majority of the sample population was Caucasian, it is possible that ecstasy could simply be a popular drug used by that population of students, it cannot be generalized that ecstasy is a popular choice of drug across racial/ethnic backgrounds.

In terms of the methodology, the focus group could have been conducted in a number of different ways. Since participants did not identify whether they were a user or nonuser until the completion of the session while filling out the demographic survey, it is possible that the responses of users could have influenced those of nonusers. Looking back on the data, participants who were users were often the more outspoken and opinionated focus group members, most likely because they believed their first hand experience with the drug made them more knowledgeable on the topic. Perhaps if the focus groups had been divided up by user and nonuser the results could have varied. Since users were typically the first to respond to questions across all three focus groups, they set the tone of the group and largely dictated where the discussion went. If nonusers were in a separate group, it would be interesting to see how their responses would have differed, for example, if more time would be spent discussing certain questions, for instance the negative connotations of ecstasy use, or describing the typical user. Another limitation in the focus group was the confusion many participants had over whether ecstasy, molly and MDMA were the same drug. While it was prefaced at the commencement and throughout the focus group that the three terms were being used synonymously, some participants may have failed to identify themselves as a user since the demographic survey only asked if they had used ecstasy before.

In terms of collecting data on health educators' drug prevention programs, there are a number of ways this could have been approached differently. The online survey was chosen as the means of distribution because it was believed to be the most efficient and convenient way of reaching the greatest amount of people. However, with such a low response rate it begs the question of whether it really was the most effective means. Another limitation of the health educatory survey that was realized in retrospect was the absence of a question regarding the school district's socioeconomic status and whether it was urban, suburban or rural. This

additional question would help with further interpretation of the results by highlighting whether the average income in the area and/or the geographic location of the school had any influence on the number of class sessions and type and depth of the programs that were implemented.

Another potential limitation of the study comes from the generation gap between health educators and the people who are using ecstasy today. Perhaps the risks of ecstasy use are not being stressed in drug prevention programs because it is a relatively new phenomenon and health educators do not understand the implications of it. It is difficult to convince a health educator to broaden their curriculum to include the risks of ecstasy when they simply do not understand the severity of the situation at hand.

Future Research

A greater depth of information may have been obtained from the focus groups if the participants had been divided up by grade level. Conducting the focus group in this manner would have been interesting because the results could then be compared to see if participants' perceptions of the risks of ecstasy varied and progressed depending on the amount of time they had been in college. Another way to gain a greater depth of information from the focus groups could have been to divide them by users and nonusers. This way, nonusers' perceptions of ecstasy would not be influenced by remarks made by users.

The study could have greatly benefitted by expanding the sample population to college students outside of Trinity College. This could have been done by comparing Trinity College students' perceptions and attitudes on ecstasy to those of students from a larger public state university. It could be very interesting to see whether the size, location and relative wealth of a school population had any bearing on students' attitudes towards drug use, specifically ecstasy. When reflecting on the positive connotations of ecstasy, the theme of "Wealth" arose numerous times across all three focus groups. However, when looking back at previous research,

specifically Businelle et al (2007) MDMA Belief's Questionnaire, within the Global Positive Scale there is no mention of wealth. Future research on ecstasy use in college students could focus on the socioeconomic status of students who use ecstasy because it would be very interesting to see whether the participants' perceptions of ecstasy as a "wealthy drug" are actually supported. On a larger scale, a study conducted nationwide could be incredibly interesting to see if ecstasy use in college, as well as students' attitudes and perceptions of risk varied by geographical location.

Another possible improvement to the study could have been a different approach to data collection for the health educator survey. Perhaps some of the health educators did not have regular access to a computer or did not feel comfortable enough with the technology that it could have prevented them from completing the survey. By conducting an over the phone or in person interview a much greater depth of information could have been attained. It could also be very beneficial to observe a drug prevention class session from each high school, to better understand how the information was being communicated to students and what programs were being utilized. Since ecstasy use has increased in the past decade with the reemergence of MDMA and molly, it could be interesting to see if the health educators were keeping with the times and updating their curricula to inform students of the new set of risks associated with this new form of the drug. This could be examined by adding an additional question to the health educatory survey to see whether the health educators could identify the new forms of ecstasy such as MDMA and molly and how they differed from ecstasy. This could also be addressed by having college students go into classes and teach the portion of the curriculum dedicated to ecstasy use.

Implications

More often than not, health educators utilize a scared straight tactic when communicating information on substance use to adolescents. Whether they personally believe this approach to be

the most effective means of getting through to adolescents, or whether their programs are structured in this manner, it has shown to have little influence on adolescents' decision to engage in substance use. Rather than using the scared straight tactic in drug prevention curricula, high school health educators should focus on providing their students with accurate and up to date information that will allow them to make their own informed decisions. This can be done through focusing on the five major content domains identified in Tobler et al (1997). By building confidence as well as effective communication and refusal skills in their students, they can effectively make their own informed decisions.

While the goal of high school drug prevention programs is to prepare students with the proper knowledge and refusal skills for when they are faced with drug use in the future, the goal of college drug prevention education is different. Substance use is inevitable in college, and each student comes to college with their own preconceived notions. The difference between the high school and college environment is that during high school students' perceptions of drug use are shaped by adult authority figures preaching that drugs are bad and to abstain from use. When they enter the college environment, drugs become somewhat of a forbidden fruit, and most references to them come directly from friends who have used before. When thinking about effective ways to convey information about the risks of drug use at the college level, specifically ecstasy, it is crucial that the focus no longer be on fear appeals but rather how substance abuse fits into that individual's life. Results from the current study showed that users had abundant positive, as well as negative expectancies about ecstasy. This suggests that users were continuing to use, regardless of knowledge of negative consequences. Therefore, prevention programs should focus on providing students with enough knowledge on the drug to allow them to make informed decisions of their own. By framing the prevention programs through a more reflective lens, for instance asking students how they want their life to turn out, what career path they want

to pursue, if they want a family, etc, and then asking them where substance use fits into that life, it would be a more effective and eye opening approach.

Another important aspect of ecstasy use in college is social pressure. While the theme of social pressure was mentioned across all three focus groups, participants made a point of clarifying that they did not feel pressured to use by their peers, but rather that the amount they were exposed to ecstasy, in terms of its prevalence in the nightlife, made them feel as though they were missing out. To help students, both users and nonusers, anticipate and cope with the social pressure to use ecstasy, it would be beneficial to them the actual number of students on campus who are using. Similar to alcohol expectancies, students often believe that a larger percent of their classmates are engaging in substance use than actually are. Therefore, they engage in substance use to fit in with their peers. If students were presented with facts on the actual rates of ecstasy use in college, they may feel less pressured to use.

In reflecting on participants' responses to where ecstasy was most frequently used, music festivals and concerts were routinely mentioned. For a prevention program specific to Trinity College, events such as Tropical and Spring Weekend should be the two main focus points. By intervening early on in college, for instance, requiring all incoming freshman to participate in a workshop on the effects of ecstasy prior to these events, it could be very beneficial. While ecstasy use is inevitable at events such as this due to the high energy, house music environment, by requiring freshman to participant in an early intervention program they will be better equipped to make their own informed decisions when faced with the decision to use. Having this intervention program early on in college is critical, as drug use often progresses throughout college.

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Table 1

Reported Frequency of Knowledge of Ecstasy Subthemes

Subtheme	Total Frequency (<i>n</i>)	Users % of <i>n</i>	Nonusers % of <i>n</i>
Frequency of Use	15	52.78	47.22
Location	56	57.14	42.86
Classification	47	63.83	36.17
Educationally Learned	10	50.00	50.00
Socially Learned	7	85.71	14.29
Lack of information	25	68.00	32.00
Accessibility	5	80.00	20.00
Total	165	61.82	38.18

Note. *n* = number of utterances

Table 2

Reported Frequency of Perceived Risks of Ecstasy Use Subthemes

Subtheme	Total Frequency (<i>n</i>)	Users % of <i>n</i>	Nonusers % of <i>n</i>
Legal	5	20.00	80.00
Contamination	11	63.64	36.36
Prior Drug Use	5	40.00	60.00
Use With Other Drugs	11	72.73	27.27
Total	32	56.25	43.75

Note. *n* = number of utterances

Table 3

Reported Frequency of Positive Effects of Ecstasy Use Subthemes

Subthemes	Total Frequency (<i>n</i>)	Users % of <i>n</i>	Nonusers % of <i>n</i>
Positive Psychological	42	52.38	47.62
Positive Physical	16	56.25	43.75
Intrapersonal Psychological	19	42.11	57.75
Interpersonal Psychological	28	60.71	39.29
Personal Physical	5	80.00	20.00
Social Physical	9	55.56	44.44
Music	25	68.00	32.00
Dancing	6	66.67	33.33
Wealth	7	71.43	28.57
Total	157	57.96	42.04

Note. *n* = number of utterances

Table 4

Reported Frequency of Negative Effects of Ecstasy Use Subthemes

Subthemes	Total Frequency (<i>n</i>)	Users % of <i>n</i>	Nonusers % of <i>n</i>
Negative Psychological	16	50.00	50.00
Negative Physical	28	60.71	39.29
Social Pressure	27	62.96	37.04
Total	71	59.15	40.85

Note. *n* = number of utterances.

Table 5

Overall Frequencies and Percentages of Overarching Themes

Overarching Theme	Frequency (<i>n</i>)	Percentage (<i>n</i>)
Positive Use of Ecstasy	71	16.71
Negative Use of Ecstasy	157	36.94
Risk of Ecstasy Use	32	7.53
Knowledge of Ecstasy	165	38.82

Note. *n* = number of utterances.

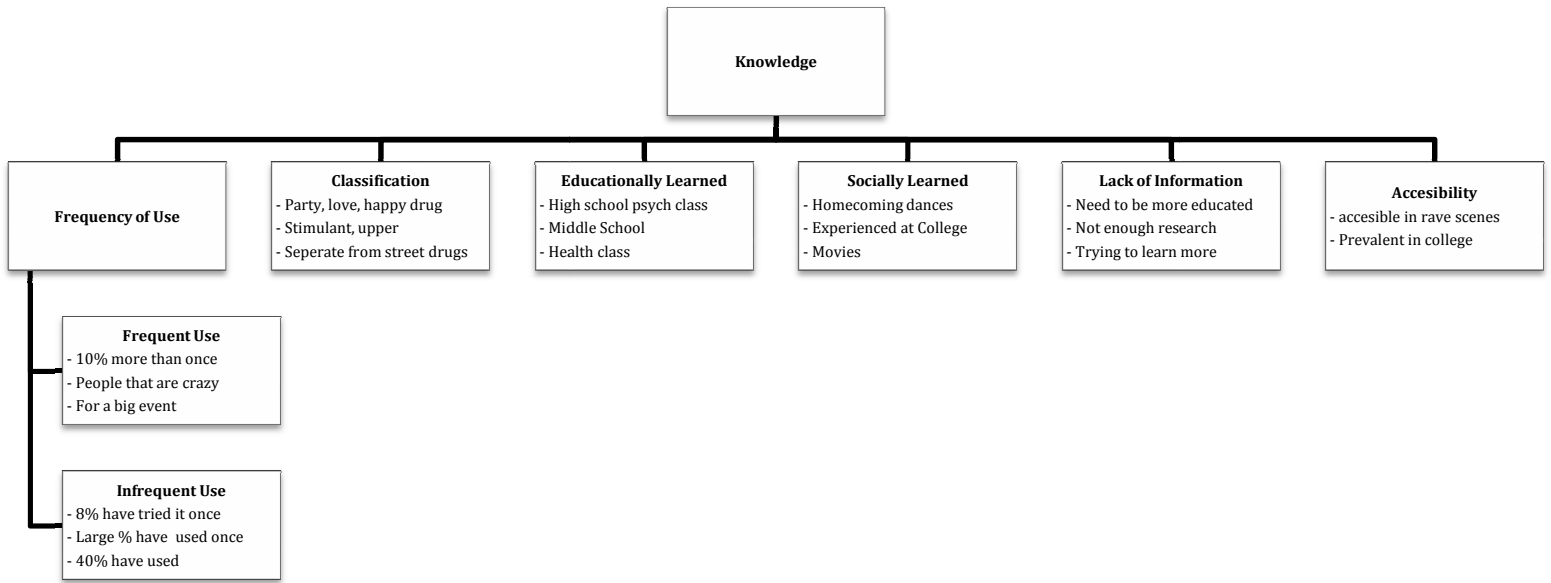


Figure 1. Reported subthemes of knowledge of ecstasy

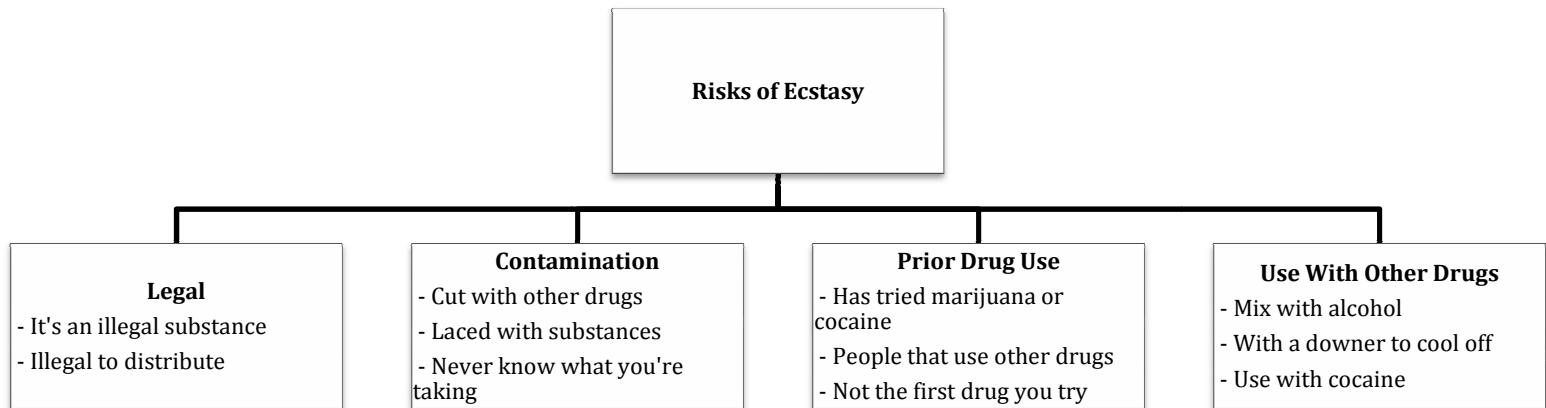


Figure 2. Reported subthemes of risks of ecstasy use.

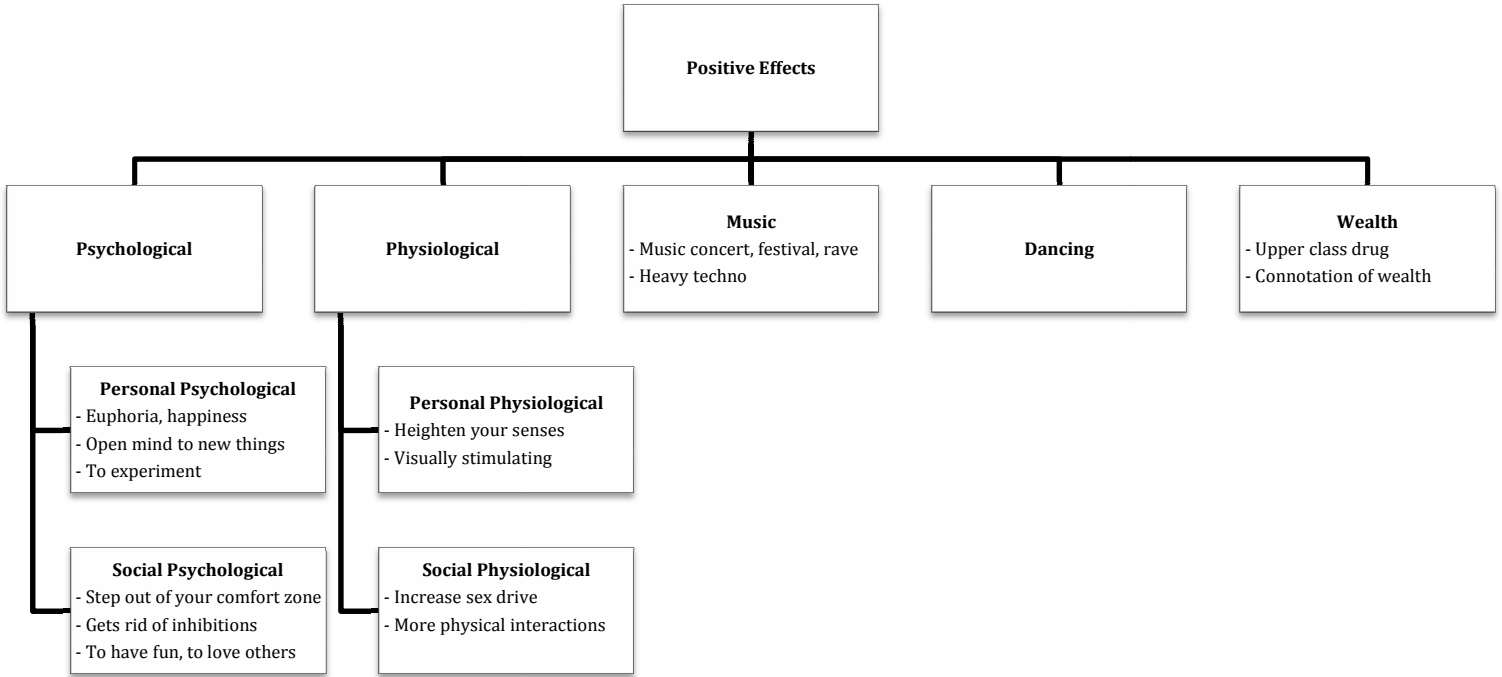


Figure 3. Reported subthemes of positive effects of ecstasy.

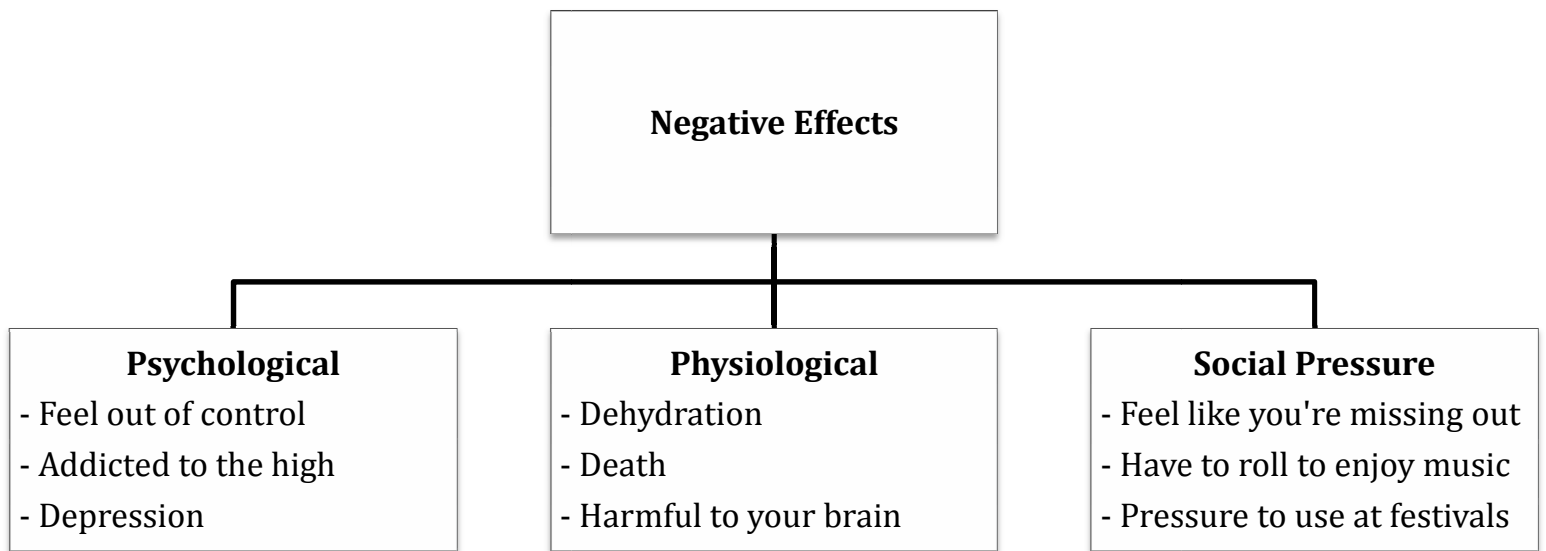


Figure 4. Reported subthemes for negative effects of ecstasy use.

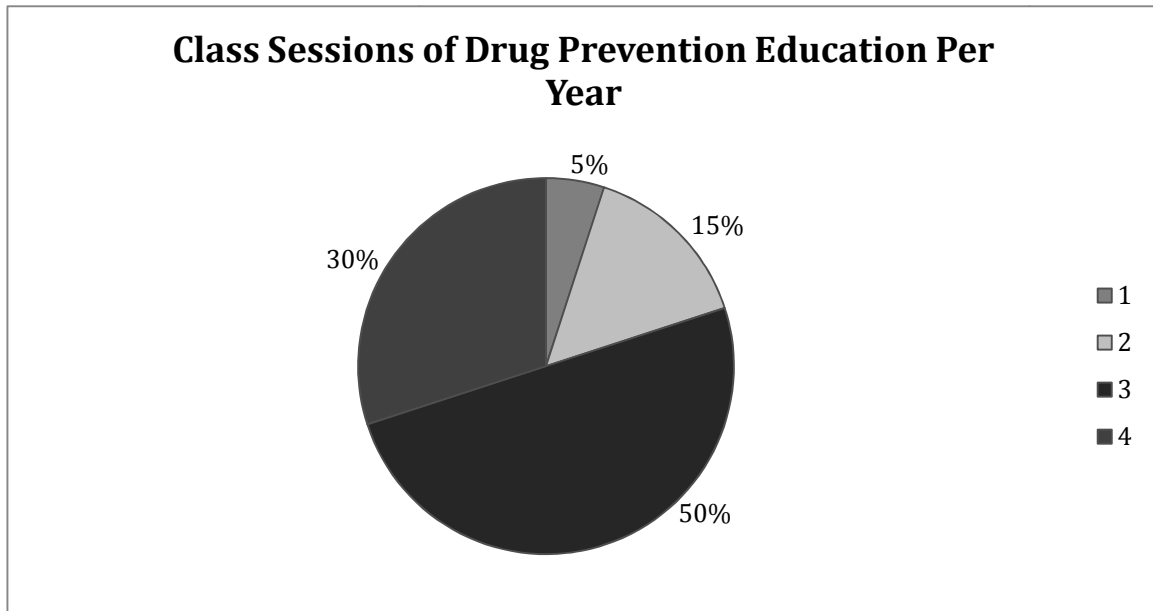


Figure 5. Number of drug prevention classes per year.

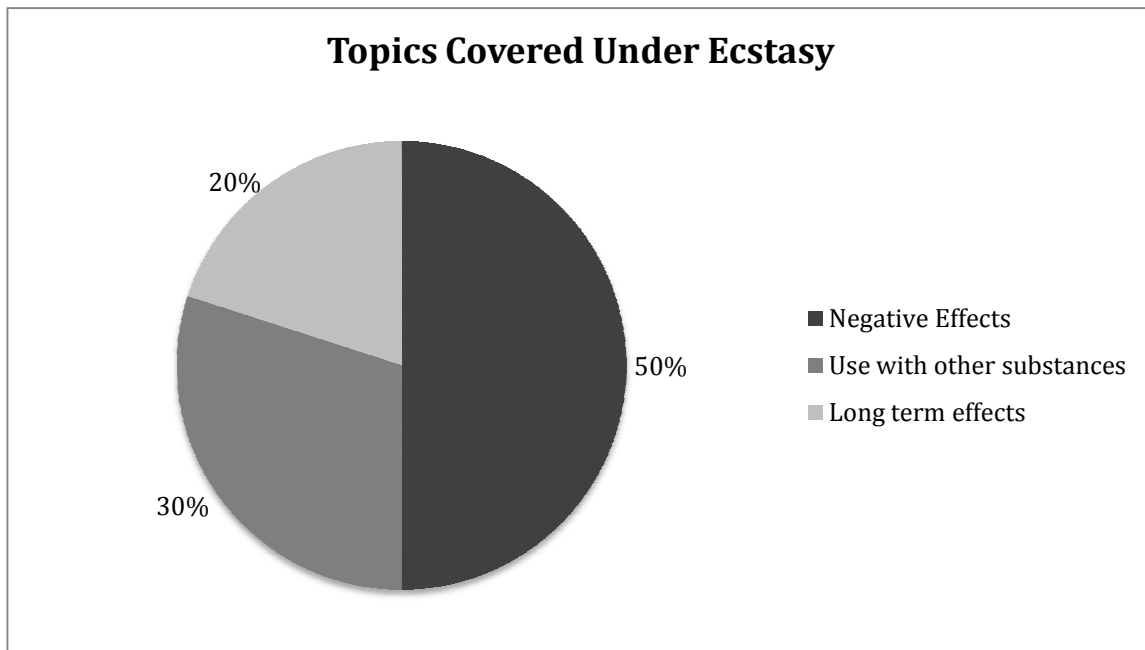


Figure 6. Topics covered under ecstasy education.

What Do You Think About Ecstasy?

Take part in a focus group to share your thoughts on current attitudes surrounding the drug ecstasy!

- Recruiting BOTH ecstasy users and non-user
- Sessions: one hour long with lunch provided
- February 17th and 24th during common hour

You may be eligible to receive extra course credit

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Appendix B

CONSENT FOR PARTICIPATION IN A RESEARCH PROJECT**TRINITY COLLEGE**

Study Title: *Ecstasy: An Exploratory Study of College Students' Attitudes and the State of Prevention*

Principal Investigator: *Rachel Reingold and Maria Young*

Invitation to Participate and Description of Project

You are invited to participate in a research study designed to examine college students' perceptions of ecstasy use including: the effects of ecstasy, risks associated with its use, and ways in which people's attitudes about the substance are formed. You are being asked to participate because of your previously expressed interest in the study, and because you are a student attending Trinity College. We will be conducting several recorded interviews and focus groups, with a total of 25-30 student participants. These students will consist of both users and non-users of ecstasy. **It's critical to note that you do not need to be an ecstasy user to participate in this study, and that in signing this form you are allowing these sessions to be tape-recorded.**

In order to decide whether or not you wish to be a part of this research study, you should know enough about its risks and benefits to make an informed judgment. This consent form gives you detailed information about the research study, which a member of the research team will discuss with you. This discussion should go over all aspects of this research: its purpose, the procedures that will be performed, any risks of the procedures, and possible benefits. Once you understand the study, you will be asked if you wish to participate; if so, you will be asked to sign this form.

Description of Procedures

If you agree to participate in this study, you will be asked to participate in either an individual interview or a focus group of 5-7 participants that should last no longer than two hours. Both will be followed by a questionnaire, which should take no more than 10 minutes to complete.

If you were chosen to participate in an individual interview, it will be scheduled at a time most convenient for you. The Focus group will meet at a selected time that will accommodate all of its members. Both will follow structured and scripted questions designed to ascertain the presence or absence of various attitudes surrounding ecstasy. These questions will stimulate discussion on a broad scope of topics pertaining to thoughts and perceptions of ecstasy. The concluding questionnaire will ask about your background (e.g., gender), substance use, and your attitudes about various substances (e.g., marijuana).

Risks and Inconveniences

Risks, discomforts and inconveniences associated with this study are limited to slight emotional and/or social discomfort. Slight emotional or social discomfort can arise from answering broad questions in the interview or focus groups, and more personal questions in the concluding questionnaire. This is minimized in the focus group and interview by the impersonal nature of the questions being asked. At no point during the interview or focus group should you feel compelled to disclose whether you have used ecstasy or any other drug. The research team will highly discourage participants from sharing whether they have used illicit drugs during the focus groups or interviews. We do, however, ask that you be willing to disclose substance use in the questionnaire following the interview or focus group; the information will be kept entirely confidential, in that your questionnaire will be identified by a code rather than your actual name.

Benefits

The issues we will examine have the potential to contribute to the understanding of contemporary attitudes on both ecstasy and other illicit drugs. We expect this research to yield critical information, not only about the unique perceptions surrounding ecstasy in comparison to other illicit drugs, but also about the associated risks. We believe that the information gained in this research also has the potential to inform prevention and intervention programs for college students. In the future, research findings from this study may be integrated and presented to preventative programs and school administrators to inform the public regarding possible prevention or intervention methods.

By participating, you will be eligible to receive research participation credit (or extra credit), depending on whether this research activity has been formally approved by your instructor. Focus group participants will be provided with food during the group. Course-related research credit (or extra credit) will not be offered unless you participate in both components of the study.

Confidentiality

Any identifiable information that is obtained in connection with this study will remain confidential and will be disclosed only with your permission. **If you are participating in a focus group, by signing this contract you are also agreeing not to disclose any information regarding other's responses in the group discussions.** Sharing information from the focus groups would be a violation of this contract. If you decide to take part in this research study, you will be required to give us information about your substance use solely in the concluding questionnaire, which will remain entirely confidential through codes of identification.

If you are going to discuss your participation in this study with friends or members of your family, you should ensure that they keep it confidential. This means that you, your friends, and your family members must actively protect your own privacy.

Confidentiality of your responses may be compromised only if you provide information indicating that you are immediately dangerous to yourself or others. If you indicate any intention of harming yourself or others, we will have to report these findings to an outside health professional.

Right to privacy for participation in this research will be protected through anonymous coding and proper storage of all data, including data encryption and password protection. At the start of the project, a list that matches participants' names with identification codes will be prepared by the investigator and will be kept in a computer file that can only be opened with a password, accessible only by Rachel Reingold and Maria Young. This list is necessary only in order to assign identification codes to data that derive from other sources (such as connecting the questionnaire and focus group/interview responses), and will be destroyed (along with the recorded sessions) following the conclusion of data collection and analysis in this study.

When the results of the research are reported, no information will be included that would reveal your identity.

Voluntary Participation and Withdrawal

You do not give up any legal rights by signing this form.

Your participation in research is voluntary. You may refuse to participate or withdraw from participation at any time without jeopardy to future medical care, employment, student status, or other entitlements. However, previously obtained data will be included in the final data analysis. The researcher may withdraw you from the research at his/her professional discretion.

Questions

If at any time you have any questions regarding the research or your participation, you can contact either one of the main researchers, who will answer your questions. The researchers' contact information is: Rachel Reingold, Rachel.reingold@trincoll.edu, (914) 874-3517, or Maria Young, Maria.young@trincoll.edu, (503) 702-3512. We have used some technical terms in this form. Please feel free to ask about anything you don't understand and to consider this research and the consent form carefully – as long as you feel is necessary – before you make a decision

Authorization

By placing an 'X' in the box below you indicate that you have read and understand the above Consent Form, that its general purposes, the particulars of involvement and possible hazards and inconveniences have been explained to *your* satisfaction, and that you have decided to participate in the project.

Your placing an 'X' in this box, along with writing your full name and date in the spaces provided, represents your informed consent to participate in this data collection.

By placing an X in this box: [] and printing my name and date below I consent to participate in this data collection.

Name of Subject (print): _____ Date: _____

Participant Signature: _____

Rachel Reingold/ Maria Young

Signature of Research Investigator

Date

Appendix C

Focus Group Script**Pre-Focus Group Script:**

We want to clarify that this whole session should talk about general attitudes of ecstasy. We are not asking you to tell personal stories, nor use the word "I" when referring to any kind of ecstasy use. We will not consider any use of personal examples or stories to actually mean that they pertain to you. None of our questions will inquire about your personal experience with the drug. This measure is just to ensure your confidentiality, safeguard your reputation, and minimize any legal risk. Also discuss maintaining confidentiality within the group, and not having participants sharing what is discussed during the focus group. Our confidentiality is definite, but everyone else's has to be too. Please silence your cell phones so as not to disrupt the focus group

Scripted Questions With Sub-Questions:

1. When you think about ecstasy, what are your initial thoughts?
 - what class of drugs do you think it's in?
 - do you think about it on its own/with other drugs similar cocaine, meth, or heroin?
(Potential association)
 - What street names do you think about?
 - What are the differences between molly, ecstasy, MDMA
 - Comparative question regarding its safety in relation to other drugs.
 - Why would someone take ecstasy
2. What are some of the positive connotations you think of regarding ecstasy?
 - How are people's moods affected by ecstasy?
 - How is a person's sex drive is influenced by the drug?
 - o How do people physically perceive others or themselves while on ecstasy?
 - o Would a person enjoy dancing and parties more when they are on Ecstasy?
3. What are some of the negative connotations of ecstasy?
 - What are potential health risks of taking these drugs?
 - How often do you think ecstasy is used in combination with other drugs such as alcohol, or marijuana?
 - When it's not in its pure form, what other substances might be in the ecstasy pill?
 - o Legal consequences?
4. When or where did you first learn about ecstasy?
 - Student's perception of how many students at trinity use

- in school?
- By friends?
- Do you remember learning about it in high school; was it addressed in drug awareness classes?
- Have you ever felt social pressure to take ecstasy?
- Have your friends ever felt social pressure to take ecstasy?
 - o Music scene EDM
 - o Could you describe what a typical user is like?

Appendix D

Post-Discussion Questionnaire

Qualtrics Survey Software

4/27/14 8:06 PM

Demographic Survey 2013

Code:

Age:

Race:

What is your gender?

- Male
- Female
- Other

What year are you at Trinity?

- Freshman
- Sophomore
- Junior
- Senior

Do you participate in Greek life at Trinity College (sorority or fraternity)?

- Yes
- No

How many times have you used ecstasy?

- 0
- 1-3
- 4-6
- 6-9

More than 9 times

How many times have you used marijuana?

0

1-3

4-6

6-9

More than 9 times

How many times have you used Alcohol?

0

1-3

4-6

6-9

More than 9 times

How many times have you used cocaine?

0

1-3

4-6

6-9

More than 9 times

How risky is ecstasy (with zero being "not risky at all" and 100 being "extremely risky")?

_____ 0 10 20 30 40 50 60 70 80 90 100

How risky is marijuana (with zero being "not risky at all" and 100 being "extremely risky")?

_____ 0 10 20 30 40 50 60 70 80 90 100

How risky is alcohol (with zero being "not risky at all" and 100 being "extremely risky")?

0 10 20 30 40 50 60 70 80 90 100

How risky is cocaine (with zero being "not risky at all" and 100 being "extremely risky")?

0 10 20 30 40 50 60 70 80 90 100

Appendix E

Health Educator Survey

1. How many class sessions of drug prevention education do your students receive each year?
 - 0
 - 1-3
 - 3-5
 - 5 or more

2. Is there a specific school based prevention program you implement in your curriculum?
 - No
 - Yes

3. What topics do you cover?

4. Does your curriculum address ecstasy use?
 - No
 - Yes

- 3a. If yes, what topics do you cover?
 - Negative effects
 - Positive effects
 - Long-term risks
 - Use with other substance

5. Have you implemented any changes or additions to your curriculum in recent years?
 - No
 - Yes

- 4a. If yes, what drugs are emphasized or deemphasized?

6. Can you describe how you communicate this information to your students?
 - Small group activities
 - Role playing
 - Lecture
 - Other

7. Do you believe students at your high school are at risk or using ecstasy?

- No
- Yes