Journal of Behavioral Health
www.scopemed.org
DOI: 10.5455/jbh.20141123045248

Original Research

GESDAV

Authoritarian parenting and ecstasy use among US youth

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Received: August 10, 2014
Accepted: November 23, 2014
Published: January 07, 2015

ABSTRACT

Aim: The present study examined ecstasy use among 12-17 years old youth (n = 17,399) across the United States. **Methods:** The National Survey on Drug Use and Health survey for ages 12-17 was administered to youth in their households. **Results:** Results indicated that female youth, 16-17 years old youth and non-Caucasian youth were at highest risk for ecstasy use. Specifically, the majority of those who used ecstasy were Native American as opposed to other races and ethnicities. Findings also indicated that youth who experienced authoritarian parenting were more likely to use ecstasy as opposed to youth who experienced other parenting styles. **Conclusion:** These findings should be considered when developing programs to prevent ecstasy use among youth.

KEY WORDS: Adolescence, authoritarian parenting, drug abuse, ecstasy, methylenedioxymethamphetamine, youth, parenting style

INTRODUCTION

Ecstasy, also known as MDMA, has increased in prevalence among adolescents in recent years. Once predominantly used among young adults and Caucasian youth at nightclubs, ecstasy use has increased among other races and ethnicities and extended past the club scene [1]. Between 2005 and 2011, emergency hospital visits related to ecstasy use among individuals younger than 21 years of age increased a startling 128% [2]. With almost 9 million ecstasy users globally, the popularity of ecstasy use is an escalating concern with it now being considered one of the most prevalent drugs among adolescents [3].

Regarding sex, females are more likely to use ecstasy than males [4]. Ogeil *et al.* [5] found that although male users typically report consuming larger amounts of the drug, females use ecstasy more frequently. Prevalence rates are also higher among older youth such as high school seniors as opposed to younger youth [1,6]. In 2013, the Monitoring the Future Study found that 4.0% of 12th grade students have used ecstasy in the last year and the trends indicate the prevalence of ecstasy use is remaining consistent over time [7].

Youth report various reasons for ecstasy use. Ecstasy can produce a feeling of euphoria, emotional closeness, empathy toward others, and sensory and time perception alterations [1]. In addition, one may experience confusion, anxiety, drug cravings or depression as a result of ecstasy consumption. The most common reasons for youth ecstasy use include positive mood and the sensation of intimacy [8].

Concerning protective factors that decrease the likelihood youth will use ecstasy, previous research suggests positive relationships between youth and parents have been associated with reduced risk of ecstasy use [9]. Parenting style is an important factor that can influence the behaviors of youth [10,11]. Authoritative parenting is defined as providing both discipline and warmth to a child. On the other hand, authoritarian parenting offers little warmth and strict control over youth and youth decision-making. Montgomery *et al.* [12] found that the majority of ecstasy users reported their parents as neglectful as opposed to young adults who have not used ecstasy. Participants who cited their parents' style of childcare as authoritative were significantly less likely to use ecstasy in their lifetime [12]. In general, research on parenting styles in relation to ecstasy consumption is lacking and further research is needed.

Purpose of the Present Study

The present study examined the role of authoritarian parenting in youth ecstasy use among 12-17 years old youth across the United States. More specifically, the following research questions were examined: (1) What is the extent of lifetime, the past year, and past month ecstasy use among youth? (2) Does lifetime, the past year, and past month use differ based on sex, race, and age? (3) Does authoritarian parenting increase the probability for lifetime, the past year, and past month use?

METHODS

Participants

Participants in this study included 12 through 17-year-old youth (n = 17,399) from across the United States. The National Survey on Drug Use and Health (NSDUH) research team recruited youth to take part in a computer-assisted interview conducted by the Research Triangle Institute (RTI). The RTI utilized a multistage area probability sampling method to select a representative sample of American residents across the United States. RTI trained interviewers (n = 665) visited randomly selected households and upon voluntary agreement to participate, conducted face-to-face interviews with the youth.

For the present study, a large, Midwestern university Institutional Review Board has approved this study examining youth ecstasy use. >30,000 students are currently enrolled and the university is designated as a very high research activity university.

Instrument

The U.S. Federal Government designed the NSDUH questionnaire. The Substance Abuse and Mental Health Services Administration's Center for Behavioral Health Statistics and Quality sponsored and managed the NSDUH. The NSDUH questionnaire consists of items examining substance use across the US as well as consequences of use. For the purpose of this study, the following survey sections were analyzed: (1) Demographic information; (2) Ecstasy use; and (3) Authoritarian parenting.

The ecstasy use items requested participants to complete questions regarding lifetime, annual, and recent use using a yes/no scale. The authoritarian parenting scale was established from defined authoritarian parenting characteristics including high demandingness and low responsiveness [10]. Authoritative parenting included seven items examining parents including biological parents, adoptive and stepparents as well as adult guardians who live in the child's household. Participants rated how often their parents performed seven authoritative parenting behaviors. A four-point scale (1 = always; 4 = never) was used to assess seven behaviors their parents exhibited within the 12 months of completing the survey. The four-point scale provided information regarding: (1) How often did their parents check on them to determine if they had completed their homework?; (2) how often their parents aided with homework when needed?; (3) how often did their parents require them to complete household chores?; (4) how often did their parents limit their time spent watching TV?; (5) how often did their parents limit their time spent with friends on school nights?; (6) how often did their parents express they have done a good job?; (7) how often did their parents tell them they were proud of something they had done? Finally, the demographic Information scale required youth to provide their sex and age.

The NSDUH was tested for validity and reliability with percent agreements of greater than 80% on most variables [13-15]. In order to establish reliability, a reliability study was given, and the NSDUH interview was administered on two separate occasions 5-15 days a part among a subset of the sample. In addition, among one-third of the interviews, a different interviewer than the one who completed the primary interview was asked to re-interview the participant.

Procedures

RTI trained field interviewers (n = 665) provided computer-assisted interviews to all participants in the privacy of their own homes. To ensure a diverse representation of US individuals, households chosen by RTI to visit were not allowed to be substituted for any reason. Before conducting participant surveys, field interviewers first obtained verbal consent from parents. All parents were asked to leave the interview setting to increase youth participant comfort and ensure confidentiality. On interview completion, each data file was given a code number and electronically submitted on the same day as the interview.

As mentioned, the NSDUH was completed in the privacy of the youth's homes. Prior to survey distribution, youth was informed of the study purpose as well as the importance of answering accurately and honestly. Furthermore, youth were informed that study involvement was voluntary and ensured the confidentiality of responses. Upon survey completion, participants were given a $30 cash incentive. Knowledge pertaining to how to use a computer was not required in order to participate. All study participants answered the majority of the questions in private by recording responses into a computer, and hence interviewers were not aware of their answers. For some survey questions, interviewers read the items to participants and entered the responses into the computer. After the survey had been completed, the file was coded and presented to the RTI on the same day the NSDUH was conducted. To protect the confidentiality of all participants, the names of the participants were not documented, and all answers were used solely for statistical purposes.

Data Analysis

For the study, data were analyzed using SPSS Statistical Software Package (version 21.0). Youth demographics was assessed via frequency distributions, means, standard deviations, and ranges. Logistic regression analyzes were conducted to examine research questions two and three. In order to reflect the authoritarian parenting style, the authoritarian parenting scale was recoded. Based on the median split, the overall authoritarian score was dichotomized into two levels: Authoritarian parenting and non-authoritarian parenting.

RESULTS

Demographic Characteristics

A total of 17,399 adolescents aged 12-17 completed surveys. About half of the participants were male (50.5%) and half were female (49.5%). Regarding race, 56.7% of the participants were Caucasian, 19.9% Hispanic, 13.4% African American, 4.8%

self-reported as more than one race, 3.4% Asian, 1.3% Native American, and 0.5% Pacific Islander. The sample was distributed evenly among age with 32% being 12-13 years old, 33% being 14-15 years old, and 35% being 16-17 years old.

Extent of Youth Ecstasy Use

Of all the youth, 2.1% reported using ecstasy in their lifetime. The majority of youth (97.9%) reported never having used this drug. In regards to past year use, 1.3% of youth reported using this drug. The data revealed that 0.3% of youth used ecstasy in the past month.

Ecstasy Use Based on Sex, Race, and Age

Results indicated that more females (2.4%) than males (1.8%) reported using ecstasy in their lifetime [Table 1]. Significant differences for lifetime use was found among females and males χ^2 (2, n = 17,399) = 7.861, P = 0.005. Past year use was also highest among females (1.5%) as opposed to males (1.1%). Significant differences for past year use was found among females and males χ^2 (2, n = 17,399) = 3.849, P = 0.050. Female and male use of ecstasy was equal (0.3%) for past month use. As such, there was no significant differences for past month use based on sex χ^2 (2, n = 17,399) = 0.044, P = 0.835.

In terms of race, significant differences for lifetime use was found based on race χ^2 (2, n = 17,399) = 46.130, P = 0.000 [Table 2]. Greater numbers of Native American youth (4.3%) reported lifetime use of ecstasy as opposed to other races and ethnicities. Hispanic youth (2.7%), youths who reported more than one race (2.6%), and Caucasian youth (2.1%) had higher rates of lifetime use than Asian (1.7%) and African American youth (0.5%). Pacific Islander youth (0.0%) reported never using the drug.

Similar results were found for past year use and past month use. Significant differences for past year use was found based on race χ^2 (2, n = 17,399) = 22.034, P = .001. The majority of those who used in the past year were Native American (2.6%) as opposed to Hispanic (1.5%), youth who reported more than one race (1.4%), Caucasian (1.4%), Asian (1.0%) and African American youth (0.4%). Concerning past month, significant differences for past month use was not found based on race χ^2 (2, n =17,399) = 7.951, P = 0.242. Native American youth (0.9%) were more likely to use this drug in the past month as opposed to Hispanic (0.5%), Caucasian (0.3%), Asian (0.2%), youth who reported more than one race (0.2%) and African American youth (0.1%).

Older youth accounted for the majority of lifetime ecstasy use [Table 3]. Results indicated that 4.2% of 16-17 years old youth have used ecstasy in their lifetime whereas 1.6% of 14-15 years olds and 0.3% of 12-13 year olds reported having used ecstasy in their lifetime. Significant differences for lifetime use was found based on age χ^2 (2, n = 17,399) = 227.665, P = 0.000.

The results were similar for past year use. Of the youth who have used in the past year, 2.5% were 16-17 years of age. 14-15 year old accounted for 1.1% whereas 12-13 years old youths accounted for 0.2%. Significant differences for past year use was found based on age χ^2 (2, n = 17,399) = 124.476, P = 0.000. Past month use was highest for 16-17 year olds (0.6%) as opposed to 14-15 year olds (0.3%) and 12-13 year olds (0.1%). Significant differences for past month use was found based on age χ^2 (2, n = 17,399) = 22.448, P = 0.000.

Ecstasy Use Based on Parenting Style

Results indicated that youth who reported their parents used an authoritarian parenting style were significantly more likely to use ecstasy than youth with parents who did not use authoritarian parenting χ^2 (2, n = 17,399) = 93.701, P = 0.000 [Table 4]. Of the youth that have ever used this substance, 3.1% had experienced authoritarian parenting whereas only 1.1% reported not experiencing authoritarian parenting.

Similarly, the data revealed that authoritarian parenting influenced past year and past month ecstasy use among the adolescents. The results showed that 2.0% of youth who

Table 1: Ecstasy use based on sex

Item	*n* (%)		χ^2	*P*
	Males	Females		
Lifetime use			7.861	0.005
Have used in lifetime	155 (1.8)	204 (2.4)		
Have not used in lifetime	8631 (98.2)	8409 (97.6)		
Annual use			3.849	0.050
Have used in the past year	99 (1.1)	126 (1.5)		
Have not used in the past year	8687 (98.9)	8487 (98.5)		
Past month use			0.004	0.835
Have used in the past month	27 (0.3)	28 (0.3)		
Have not used in the past month	8759 (99.7)	8585 (99.7)		

Table 2: Ecstasy use based on race

Item	*n* (%)						χ^2	*P*
	African American	Asian	Caucasian	Hispanic	Native American	More than one race		
Lifetime use								
Have used	11 0(.5)	10 (1.7)	212 (2.1)	94 (2.7)	10 (4.3)	22 (2.6)	46.130	<0.001
Have not used	2317 (99.5)	586 (98.3)	9651 (97.9)	3363 (97.3)	224 (95.7)	813 (97.4)		
Annual use								
Have used	9 (0.4)	6 (1.0)	140 (1.4)	52 (1.5)	6 (2.6)	12 (1.4)	22.034	0.001
Have not used	2319 (99.6)	590 (99.0)	9723 (98.6)	3405 (98.5)	228 (97.4)	823 (98.6)		
Past month use								
Have used	3 (0.1)	1 (0.2)	31 (0.3)	16 (0.5)	2 (0.9)	2 (0.2)	7.951	0.242
Have not used	2325 (99.9)	595 (99.8)	9832 (99.7)	3441 (99.5)	232 (99.1)	833 (99.8)		

Notes: Pacific Islander youth reported 0% lifetime, annual, and past month use of ecstasy

Table 3: Ecstasy use based on age

Item	*n* (%)			χ^2	*P*
	12-13 years old	14-15 years old	16-17 years old		
Lifetime use				227.665	<0.001
Have used in lifetime	14 (0.3)	92 (1.6)	253 (4.2)		
Have not used in lifetime	5541 (99.7)	5656 (98.4)	5843 (95.8)		
Annual use				124.476	<0.001
Have used in the past year	10 (0.2)	63 (1.1)	152 (2.5)		
Have not used in the past year	5545 (99.8)	5685 (98.9)	5944 (97.5)		
Past month use				22.448	<0.001
Have used in the past month	5 (0.1)	15 (0.3)	35 (0.6)		
Have not used in the past month	5550 (99.9)	5733 (99.7)	6061 (99.4)		

Table 4: Ecstasy use based on parenting style

Item	Authoritarian parenting (*n* (%))		χ^2	*P*
	No	Yes		
Lifetime use			93.701	<0.001
Have used in lifetime	98 (1.1)	256 (3.1)		
Have not used in lifetime	9106 (98.9)	7875 (96.9)		
Annual use			61.779	<0.001
Have used in the past year	59 (0.6)	161 (2.0)		
Have not used in the past year	9145 (99.4)	7970 (98.0)		
Past month use			13.507	<0.001
Have used in the past month	14 (0.2)	37 (0.5)		
Have not used in the past month	9190 (99.8)	8094 (99.5)		

used ecstasy in last year experienced authoritarian parenting as opposed to 0.6% who had not experienced authoritarian parenting. Significant differences for youth past year use was found based on parenting style χ^2 (2, n = 17,399) = 61.799, P = 0.000. Youth who reported authoritarian parenting (0.5%) were more likely to use ecstasy in the past month than those who did not report this parenting style (0.2%). Significant differences for youth past month use were found based on parenting style χ^2 (2, n = 17,399) = 13.507, P = 0.000.

DISCUSSION

The present study found that 2.1% of youth aged 12-17 reported having used ecstasy in their lifetime. Although this is a small percentage, negative consequences of ecstasy use, including impulsivity, aggression, high blood pressure and hyperthermia, exist [16]. Data indicates that youth hospital visits due to ecstasy consumption has more than doubled in recent years [2]. Of these hospital visits, approximately 33% also involved alcohol consumption. It is possible that the youth are using ecstasy with other substances like alcohol. Future studies should explore youths' use of ecstasy with alcohol and other drugs as well as negative consequences of use.

This study found that females were more likely than males to use ecstasy. This is consistent with past literature, which also found that females use ecstasy at higher rates than males [4]. Based on study findings, it appears females should be targeted with prevention and intervention programming. In addition, examining specific reasons females use ecstasy is warranted. As such, reasons can be incorporated into future programming and awareness efforts.

Regarding age, older youth aged 16-17 were more likely to use ecstasy than 12-15 year old. The results are supported by past research, which found ecstasy use is highest among upper high school grades [4,6]. According to the Monitoring the Future Study [17], approximately 40% of 12th graders report ecstasy is easy to access compared to approximately 10% of 8th graders. Perhaps, ease of access is a contributing factor to older youth using ecstasy. In addition, older youth face may social, emotional, and personal challenges as they are transitioning out of high school and into adulthood. Providing 11th and 12th graders with positive coping skills and educational programs targeting the negative consequences of substance use may reduce likelihood to use ecstasy.

Past research indicates that ecstasy use is becoming more prevalent among non-Caucasian communities [18]. The study findings support this as the majority of youth who reported using ecstasy in their lifetime were non-Caucasian. The Youth Risk Behavior Surveillance Survey [6] similarly found that those at highest risk for ecstasy consumption are non-Caucasian youth, particularly Hispanic adolescents. Moreover, the current study found relatively high rates of ecstasy use among Native American youth. Wu *et al.* [19] found that in addition to Caucasian youth and youth who identify themselves as more than one race, the rates of ecstasy use among Native American adolescents are higher than that of other ethnic groups. As a whole, Native Americans experience higher rates of alcohol and other drug use than other race and ethnicities [20]. In order to prevent ecstasy use among non-Caucasian communities, future prevention programs should take cultural influences into consideration. Targeting minority adolescents with culturally tailored prevention and intervention messages may reduce ecstasy use among these populations.

The present study found that authoritarian parenting increases the probability of ecstasy use among youth. Authoritarian parenting characteristics include high demandingness, control, low responsiveness, and lack of parental warmth [10]. Parental warmth and control can decrease the odds of youth using substances [12]. Past literature has similarly shown that authoritarian parenting style is less protective against substance use than authoritative parenting [21]. A study conducted by Montgomery *et al.* [12] found that the youth who experience

authoritative parenting are less likely to use ecstasy as opposed to those who experienced neglectful parenting. The findings from this study can help design improved drug prevention programs. In order to increase authoritative parenting strategies, programs should be created that teach parents the skills needed to implement this parenting style. Program can focus on parenting skills such as listening to their child and how to administer appropriate as well as fair discipline. Future research on parenting styles in regards to ecstasy use is necessary in order to educate parents of the appropriate parenting strategies that may aid in preventing substance use among youth.

Limitations

Several factors may have limited the generalizability of study findings. First, the sample consisted of 12-17-year-old youth. Therefore, the results may not be generalizable to other age groups. Second, data were self-reported by participants. Thus, some youth may have responded in a socially desirable manner. Third, as data were self-reported by participants, socially desirable responses may have been reported by some individuals, especially since the interviewer was present. Finally, causal relationships could not be determined as the survey was cross-sectional.

CONCLUSIONS

The present study found relativity low rates of ecstasy use among youth. Even so, findings suggest youth continue to use ecstasy. Various negative consequences are associated with ecstasy use that may harm youth who use. The study findings add to the literature by providing information on the relationship between youth ecstasy use and parenting styles. Findings suggest that authoritarian parenting may be a risk factor for youth ecstasy use. School health professionals and others should target adolescents and parents with information on the negative consequences of ecstasy use with youth. In addition, intervention and prevention specialists may consider integrating different factors such as parenting behaviors into programs as a way to reduce the probability of substance use among youth. Increasing positive parenting techniques while reducing authoritarian parenting is needed to reduce youth ecstasy use. Utilizing role play with parents and training parents on authoritative parenting techniques may be needed. Additional research on the association between parenting styles and youth ecstasy use is warranted.

REFERENCES

1. National Institute on Drug Abuse. Drug Facts: MDMA (Ecstasy or Molly). 2013. Available from: http://www.drugabuse.gov/publications/drugfacts/mdma-ecstasy-or-molly. [Last accessed on 2013 Nov 19].
2. The Substance Abuse and Mental Health Services Administration. Ecstasy-related Emergency Department Visits by Young People Increased Between 2005 and 2011; Alcohol Involvement Remains a Concern. 2013. Available from: http://www.samhsa.gov/data/spotlight/spot127-youth-ecstasy-2013.pdf. [Last accessed on 2014 Mar 25].
3. Foundation for a Drug-Free World. Dancing with Death? 2013. Available from: http://www.drugfreeworld.org/drugfacts/ecstasy.html. [Last accessed on 2013 Nov 19].
4. McCrystal P, Percy A. Factors associated with teenage ecstasy use. Drug Educ Prev Policy 2010;17:507-27.
5. Ogeil RP, Rajaratnam SM, Broadbear JH. Male and female ecstasy users: Differences in patterns of use, sleep quality and mental health outcomes. Drug Alcohol Depend 2013;132:223-30.
6. Eaton DK, Kann L, Kinchen S, Shanklin S, Flint KH, Hawkins J, *et al*. Youth risk behavior surveillance - United States, 2011. MMWR Surveill Summ 2012;61:1-162.
7. National Institute on Drug Abuse. Drug Facts: High school and youth trends; 2014. Available from: http://www.drugabuse.gov/publications/drugfacts/high-school-youth-trends. [Last accessed on 2014 May 02].
8. Boyd CJ, McCabe SE, d'Arcy H. Ecstasy use among college undergraduates: Gender, race and sexual identity. J Subst Abuse Treat 2003;24:209-15.
9. National Institute on Drug Abuse. Understand drug abuse and addiction: What science says. 2007. Available from: http://www.drugabuse.gov/publications/teaching-packets/understanding-drug-abuse-addiction/section-ii/5-protective-factors. [Last accessed on 2013 Nov 19].
10. Baumrind D. Current patterns of parental authority. Dev Psychol 1971;4:1-103.
11. Steinberg L. We know some things: Parent-adolescent relationships in retrospect and prospect. J Res Adolesc 2001;11:1-19.
12. Montgomery C, Fisk JE, Craig L. The effects of perceived parenting style on the propensity for illicit drug use: The importance of parental warmth and control. Drug Alcohol Rev 2008;27:640-9.
13. Chromy JR, Feder M, Gfoerer J, Hirsch E, Kennet J, Morton KB, *et al*. Reliability of Key Measures in the National Survey on Drug Use and Health. Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies; 2010.
14. Fendrich M, Johnson TP, Sudman S, Wislar JS, Spiehler V. Validity of drug use reporting in a high-risk community sample: A comparison of cocaine and heroin survey reports with hair tests. Am J Epidemiol 1999;149:955-62.
15. Gfroerer J, Eyerman J, Chromy J. Redesigning an Ongoing National Household Survey: Methodological Issues. Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies; 2002.
16. National Institute on Drug Abuse. What are the effects of MDMA? 2014. Available from: http://www.drugabuse.gov/publications/mdma-ecstasy-abuse/what-are-effects-mdma. [Last accessed on 2014 July 01].
17. Johnston LD, O'Malley PM, Bachman JG, Schulenberg JE. Monitoring the Future national results on drug use: 2012 overview, key findings on adolescent drug use. 2013. Available from: http://www.monitoringthefuture.org/pubs/monographs/mtf-overview2012.pdf. [Last accessed on 2014 May 02].
18. Johnston LD, O'Malley PM, Miech RA, Bachman JG, Schulenberg JE. Monitoring the future national survey results on drug use: 1975-2013: Overview, key findings on adolescent drug use. 2014. Available from: http://www.monitoringthefuture.org//pubs/monographs/mtf-overview2013.pdf. [Last accessed on 2014 Mar 25].
19. Wu LT, Schlenger WE, Galvin DM. Concurrent use of methamphetamine, MDMA, LSD, ketamine, GHB, and flunitrazepam among American youths. Drug Alcohol Depend 2006;84:102-13.
20. National Center for Health Statistics. Health, United States, 2013: With Special Feature on Prescription Drugs. Hyattsville, MD; 2014. Available from: http://www.cdc.gov/nchs/data/hus/hus13.pdf. [Last accessed on 2014 Jul 28].
21. Calafat A, García F, Juan M, Becoña E, Fernández-Hermida JR. Which parenting style is more protective against adolescent substance use? Evidence within the European context. Drug Alcohol Depend 2014;138:185-92.

Source of Support: Nil, Conflict of Interest: None declared.