

# The NSDUH Report

February 14, 2008

## Use of Specific Hallucinogens: 2006

**H**allucinogens are drugs that distort a person's perception of reality. Hallucinogens such as lysergic acid diethylamide (LSD), phencyclidine (PCP), ketamine, and methylenedioxymethamphetamine (MDMA or Ecstasy) are man-made chemicals,

while others, such as psilocybin mushrooms and the herb *Salvia divinorum*, occur in nature. These drugs can produce visual and auditory hallucinations, feelings of detachment from one's environment and oneself, and distortions in time and perception.<sup>1-3</sup> Other effects can include mood swings, elevated body temperature and blood pressure, psychotic-like effects, seizures, and intense feelings of sensory detachment.<sup>1,2</sup> Although some indicators of hallucinogen use have shown decreases in the past several years, the number of persons who first used Ecstasy in the past 12 months increased from 2005 to 2006, and the past year prevalence of this drug is showing signs of increase among young people.<sup>4-6</sup> In addition, there is evidence suggesting the emergence of new hallucinogens, such as *Salvia divinorum*, which has been marketed as an "herbal high."<sup>7</sup>

The National Survey on Drug Use and Health (NSDUH) asks persons aged 12 or older questions related to their use of any type of hallucinogen in the past year. The survey also asks about use of individual hallucinogens; questions specifically about LSD, PCP, and

### In Brief

- In 2006, young adults aged 18 to 25 were more likely than youths aged 12 to 17 and adults aged 26 or older to be past year users of LSD, Ecstasy, and *Salvia divinorum*
- Among youths, females were more likely than males to be past year users of Ecstasy, but males were more likely than females to be past year users of *Salvia divinorum*
- Young adult males were more likely than young adult females to be past year users of LSD, Ecstasy, and *Salvia divinorum*

Ecstasy have been included for several years. Beginning with the 2006 survey, NSDUH also has included specific questions about past year use of ketamine, the tryptamine drugs dimethyltryptamine (DMT), alpha-methyltryptamine (AMT), and 5-methoxy-diisopropyltryptamine (5-MeO-DIPT or “Foxy”), and *Salvia divinorum*.<sup>8</sup> This report examines the prevalence and patterns of the use of each of these hallucinogens among persons aged 12 or older. Estimates are based on data from the 2006 NSDUH.<sup>9</sup>

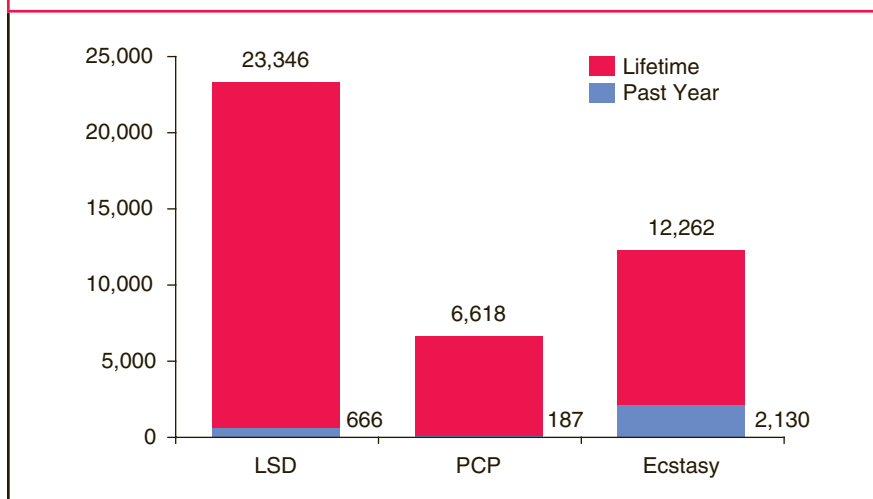
### LSD, PCP, and Ecstasy

In 2006, approximately 23 million persons aged 12 or older used LSD in their lifetime (9.5 percent) and 6.6 million had used PCP in their lifetime (2.7 percent). However, fewer than 700,000 used LSD in the past year, and fewer than 200,000 used PCP in the past year (Figure 1). More than 12 million persons aged 12 or older had used Ecstasy in their lifetime (5.0 percent), and about 2.1 million (0.9 percent) did so in the past year.

Persons aged 18 to 25 were more likely than those aged 26 or older to be past year users of LSD, PCP, and Ecstasy (Table 1). Young adults aged 18 to 25 also were more likely to have used LSD and Ecstasy in the past year compared with youths aged 12 to 17. Youths and young adults had similar rates of past year use of PCP.

Females who were aged 12 to 17 were more likely than males in this age group to have used Ecstasy in the past year (Table 2). Young adult males aged 18 to 25 were nearly twice as likely as young adult females to have used LSD in the past year. Young adult males also were more likely than females in this age group to have used Ecstasy in the past year.

**Figure 1. Estimated Numbers (in Thousands) of Persons Aged 12 or Older Who Used LSD, PCP, or Ecstasy in Their Lifetime and in the Past Year: 2006**



Source: SAMHSA, 2006 NSDUH.

**Table 1. Percentages and Standard Errors (SE)\* of Past Year Hallucinogen Use\*\* among Persons Aged 12 or Older, by Age Group: 2006**

Hallucinogen	12 or Older		12 to 17		18 to 25		26 or Older	
	%	SE	%	SE	%	SE	%	SE
LSD	0.3	0.02	0.4	0.05	1.2	0.10	0.1	0.02
PCP	0.1	0.02	0.2	0.04	0.2	0.04	0.0+	0.02
Ecstasy	0.9	0.04	1.2	0.09	3.8	0.19	0.3	0.04
Ketamine	0.1	0.02	0.1	0.03	0.2	0.04	0.1	0.02
DMT/AMT/Foxy***	0.0+	0.01	0.1	0.02	0.2	0.05	0.0+	0.01
<i>Salvia divinorum</i>	0.3	0.02	0.6	0.06	1.7	0.12	0.0+	0.01

Source: SAMHSA, 2006 NSDUH.

### Ketamine, DMT, AMT, Foxy, and *Salvia divinorum*

An estimated 2.3 million persons aged 12 or older used ketamine in their lifetime, and 203,000 were past year users (Figure 2). Almost 700,000 persons aged 12 or older had used DMT, AMT, or Foxy in

their lifetime, and approximately 100,000 did so in the past year. About 1.8 million persons aged 12 or older used *Salvia divinorum* in their lifetime, and approximately 750,000 did so in the past year.

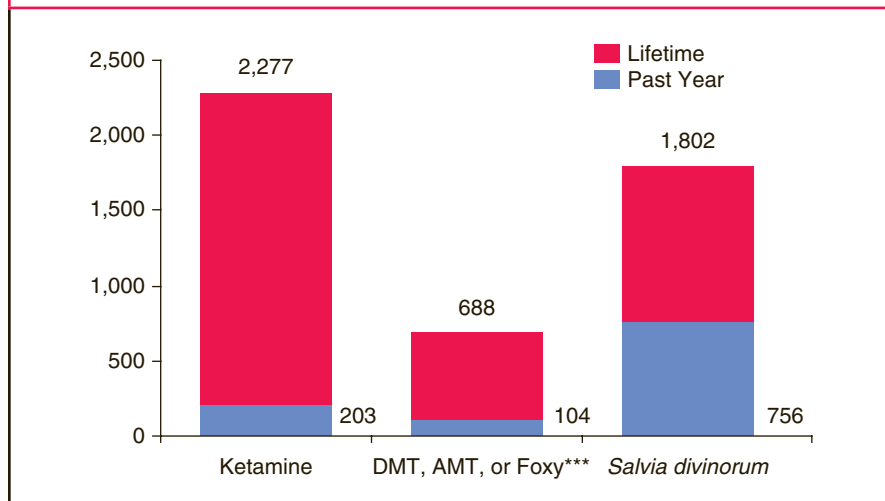
Young adults aged 18 to 25 were more likely than adults aged 26 or older to have used ketamine, DMT, AMT, or Foxy, and *Salvia divinorum* in the past year (Table 1). Young

**Table 2. Percentages and Standard Errors (SE)\* of Past Year Hallucinogen Use\*\* among Persons Aged 12 to 25, by Age Group and Gender: 2006**

Hallucinogen	12 to 17				18 to 25			
	Male		Female		Male		Female	
	%	SE	%	SE	%	SE	%	SE
LSD	0.4	0.07	0.4	0.08	1.5	0.15	0.8	0.12
PCP	0.2	0.06	0.3	0.06	0.3	0.06	0.2	0.06
Ecstasy	1.0	0.11	1.4	0.14	4.3	0.28	3.2	0.24
Ketamine	0.1	0.03	0.2	0.05	0.3	0.07	0.2	0.04
DMT/AMT/Foxy***	0.1	0.03	0.0 <sup>+</sup>	0.01	0.3	0.09	0.1	0.03
<i>Salvia divinorum</i>	0.9	0.10	0.3	0.06	2.7	0.20	0.7	0.10

Source: SAMHSA, 2006 NSDUH.

**Figure 2. Estimated Numbers (in Thousands) of Persons Aged 12 or Older Who Used Ketamine, DMT, AMT, or Foxy, and *Salvia divinorum*\*\* in Their Lifetime and in the Past Year: 2006**



Source: SAMHSA, 2006 NSDUH.

adults also were nearly 3 times more likely than youths aged 12 to 17 to have used *Salvia divinorum* in the past year.

Among youths aged 12 to 17 and young adults aged 18 to 25, males were about 3 to 4 times more likely than females to have used *Salvia divinorum* in the past year (Table 2).

**End Notes**

- <sup>1</sup> National Institute on Drug Abuse. (2001). *Hallucinogens and dissociative drugs, including LSD, PCP, ketamine, dextromethorphan* (DHHS Publication No. 01-4209). Rockville, MD: U.S. Department of Health and Human Services, National Institutes of Health. [Available at <http://www.drugabuse.gov/ResearchReports/hallucinogens/hallucinogens.html>]
- <sup>2</sup> National Institute on Drug Abuse. (2006, May). *NIDA InfoFacts: MDMA (Ecstasy)*. Retrieved December 11, 2007, from <http://www.nida.nih.gov/Infofacts/ecstasy.html>

- <sup>3</sup> U.S. Drug Enforcement Administration, Office of Diversion Control. (2007, August). *Drugs and chemicals of concern: Salvia divinorum and salvinorin A*. Retrieved December 11, 2007, from [http://www.deadiversion.usdoj.gov/drugs\\_concern/salvia\\_d/salvia\\_d.htm](http://www.deadiversion.usdoj.gov/drugs_concern/salvia_d/salvia_d.htm)
- <sup>4</sup> Office of Applied Studies. (2007). *Results from the 2006 National Survey on Drug Use and Health: National findings* (DHHS Publication No. SMA 07-4293, NSDUH Series H-32). Rockville, MD: Substance Abuse and Mental Health Services Administration. [Available at <http://oas.samhsa.gov/p0000016.htm>]
- <sup>5</sup> National Drug Intelligence Center. (2006, October). *National drug threat assessment 2007* (Report No. 2006-Q0317-003). Johnstown, PA: Author. [Available at <http://www.usdoj.gov/ndic/pubs21/21137/index.htm>]
- <sup>6</sup> Johnston, L. D., O'Malley, P. M., Bachman, J. G. & Schulenberg, J. E. (2007, December 11). Overall, illicit drug use by American teens continues gradual decline in 2007. University of Michigan News Service: Ann Arbor, MI. [Available at [www.monitoringthefuture.org](http://www.monitoringthefuture.org)]
- <sup>7</sup> Dennehy, C. E., Tsourounis, C., & Miller, A. E. (2005). Evaluation of herbal dietary supplements marketed on the Internet for recreational use. *Annals of Pharmacotherapy*, 39, 1634-1639.
- <sup>8</sup> The 2006 NSDUH National Findings report and detailed tables did not provide separate estimates for ketamine, the tryptamine hallucinogens, and *Salvia divinorum*, which are being presented in this report for the first time.
- <sup>9</sup> Estimates of use of LSD, PCP, and Ecstasy from the 2006 NSDUH include imputations for missing or otherwise unknown data on use in the lifetime and the past year for these drugs. However, no imputations were applied to measures of the use of ketamine, the tryptamine drugs DMT, AMT, and Foxy, and *Salvia divinorum*. Therefore, some respondents had missing data for lifetime or past year use of these drugs. Estimates for the latter three drugs may be conservative because respondents with missing data for the lifetime or past year periods were treated as though they were nonusers.

**Table and Figure Notes**

- \* Standard error (SE) is a measure of the sampling variability or precision of an estimate, where smaller values represent greater precision and larger values represent less precision.
- \*\* See end notes 8 and 9.
- \*\*\*DMT = dimethyltryptamine; AMT = alpha-methyltryptamine; and 5-MeO-DIPT, or "Foxy" = 5-methoxy-diisopropyltryptamine.
- + Estimate rounded to zero.

**Suggested Citation**

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U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Research findings from the SAMHSA 2006 National Survey on Drug Use and Health (NSDUH)

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The National Survey on Drug Use and Health (NSDUH) is an annual survey sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA). The 2006 data on persons aged 12 or older are based on information obtained from 67,802 persons. The survey collects data by administering questionnaires to a representative sample of the population through face-to-face interviews at their place of residence.

*The NSDUH Report* is prepared by the Office of Applied Studies (OAS), SAMHSA, and by RTI International in Research Triangle Park, North Carolina. (RTI International is a trade name of Research Triangle Institute.)

Information on NSDUH used in compiling data for this issue is available in the following publication:

Office of Applied Studies. (2007). *Results from the 2006 National Survey on Drug Use and Health: National findings* (DHHS Publication No. SMA 07-4293, NSDUH Series H-32). Rockville, MD: Substance Abuse and Mental Health Services Administration.

Also available online: <http://oas.samhsa.gov>.

Because of improvements and modifications to the 2002 NSDUH, estimates from the 2002 through the 2006 surveys should not be compared with estimates from the 2001 or earlier versions of the survey to examine changes over time.



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