

Just a Click Away: Recreational Drug Web Sites on the Internet

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ABSTRACT. The explosive growth of the Internet in recent years has provided a revolutionary new means of interpersonal communication and connectivity. Information on recreational drugs—once limited to bookstores, libraries, mass media, and personal contacts—is now readily available to just about anyone with Internet access. Not surprising, Internet access greatly facilitates the free and easy exchange of ideas, opinions, and unedited and nonrefereed information about recreational drugs. This article presents a patient who came to medical attention as the result of recreational drug-taking behavior directly influenced by her Internet browsing. A second case is presented in which the only information available about the medical effects of a new “designer” drug was found on a recreational drug Internet Web site. Several such Web sites are described in detail. Despite the presence of Web sites that convey antidrug messages, the drug sites that espouse “risk reduction” and “safe” and “responsible” drug use are easily accessible and potentially alluring to children and adults. Health care providers who care for adolescents should be particularly aware of the content of these drug sites. *Pediatrics* 2002;109(6). URL: <http://www.pediatrics.org/cgi/content/full/109/6/e96>; Internet, Web sites, drug abuse, recreational drugs, club drugs.

ABBREVIATIONS. MDMA, methylenedioxyamphetamine; GHB, γ hydroxybutyrate; ED, emergency department.

During the 1990s, a dramatic change occurred in the types of recreational drugs that became available and are currently being used by young people in the United States. A new generation of illicit drugs, including methylenedioxyamphetamine (MDMA; Ecstasy), γ hydroxybutyrate (GHB), and ketamine are increasingly available to young people.^{1,2} Their relatively low cost and perceived safety prompts accelerated acceptance by young people. The use and endorsement of MDMA in particular seems to have become widespread. According to Johnston et al,³ in 2000, 8.2% of US high school seniors reported using MDMA (14% in the West), up from 5.6% in 1999. The reported perception by high school seniors that MDMA was fairly or very easily available rose from 44% in 1999 to 51% in 2000.³ Surveys from 1994 to 1999 demonstrate a

sharp rise in MDMA use among college students as well.³ The report of the Drug Abuse Warning Network released in December 2000 reveals that emergency department (ED) episodes related to MDMA, GHB, and ketamine increased significantly during the period 1994 to 1999.⁴ In addition, abuse of some older drugs, such as dextromethorphan, seems to be on the upsurge.⁵

Simultaneous with this “club” drug revolution has been the explosive growth of the Internet. A dramatic change in the everyday means of communications has taken place. E-mail is now ubiquitous, and the World Wide Web, known as the Internet, brings people together from all over the world attracted by discussion groups, chat rooms, and the ability to network and communicate quickly with those with similar interests.

Not surprising, a plethora of Web pages that focus on recreational drugs have also sprouted up on the Internet (www.erowid.org/index.shtml, www.lycaenum.org, www.dancesafe.org, www.ravesafe.com, www.ecstasy.org, www.bluelight.nu, www.tripzine.com, www.eztest.com, www.clubdrugs.org, www.drugs.indiana.edu/druginfo, www.projectghb.org). These Web sites convey all sorts of information from many different perspectives. Although some of these Internet Web sites are hosted by government organizations (National Institute of Drug Abuse; www.clubdrugs.org), academic organizations (www.drugs.indiana.edu/druginfo), and private groups (www.projectghb.org) in an attempt to educate the public about the potential harmful effects of drug use, other Web sites seem to glamorize drug use by actively condoning its use.^{6,7} Buzzwords such as “safe” drug use and “responsible” drug use are used abundantly throughout this Web site literature.

The intent of this article is to describe various Internet Web sites that provide information on recreational drugs. With the proliferation of drug-related information on the Internet, health care practitioners who care for adolescents and young adults, as well as parents, should be cognizant of the informational resources available to their patients. Adolescent use of these Web sites may have a direct impact on their drug-taking behavior. A case of an adolescent patient who required ED care as the result of recreational drug-taking behavior that seemed to be directed by suggestions garnered on Internet Web sites is presented. A second case is also described in which a patient presented to the ED with drug-induced toxicity from a new designer drug that was unfamiliar to the health care providers. A regional poison control center and medical toxicologist were

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consulted about the latter case, and the only source of information on this drug was found on several Internet drug sites.

CASE REPORTS

Case 1

A 14-year-old female presented to the ED with mild agitation, hallucinations, and a sense of unreality. She had been found in her school attempting to climb the walls and was subsequently brought to the school nurse, who called an ambulance to transport her to the hospital. According to her parents, the girl had been well that morning before school. She has no significant medical history and was not supposed to be taking any medications. When she arrived in the ED, she remained confused and could not provide a history. Her vital signs were as follows: pulse, 105 beats/min; respiratory rate, 20 breaths/min; blood pressure, 100/65 mm Hg; and temperature, 36.8°C. Her physical examination was noticeable for nystagmus, both lateral and vertical. Her pupil size was 4 mm bilaterally and reactive. Her examination was otherwise unremarkable except for her global confusion. At first, it was unclear what the patient might have ingested. Shortly thereafter, several school friends arrived in the ED and informed the health care providers that the patient had ingested 8 Coricidin (containing dextromethorphan hydrobromide, 30 mg, and chlorpheniramine maleate, 4 mg per tablet) before going to school. Within 4 hours in the ED, the patient's mental status had cleared and she confirmed the history of the drug ingestion. When asked why she took 8 Coricidin, the patient remarked that she wanted to "get high" and it was the dose suggested by an Internet Web site.

Case 2

An 18-year-old male college student presented to the ED after having a seizure. According to the patient, he had ingested several tablets of "blue mystic" shortly before the seizure. Blue mystic is the "street" name for 2,5-dimethoxy-4-(n)-propylthiophenethylamine, also known as 2C-T-7. First synthesized in 1986, this new designer drug is a phenethylamine derivative related to other hallucinogenic amphetamines. The student stated that he had been using blue mystic sporadically but on this day decided to increase his dose. He was observed in the ED for a few hours, had no additional seizure activity, and was discharged from the hospital. A Medline search of the medical literature from 1966 to December 2000 as well as a perusal through standard toxicology references⁸⁻¹⁰ failed to reveal a single citation regarding this agent. An Internet search, however, revealed extensive information about this drug on the Vaults of Erowid¹¹ and Lycaeum¹² Web sites (see below).

DISCUSSION

"Surfing the net" provides access to many elaborately designed Web sites that contain considerable information about a variety of recreational drugs. Many of these sites provide information on newer drugs of abuse, the so-called club drugs, such as MDMA (E, Ecstasy), GHB (G), and ketamine (K, special K); newer designer drugs, many of them hallucinogenic amphetamines (eg, 2C-T-7); as well as more established drugs such as dextromethorphan and marijuana. Some of these Web sites (eg, www.erowid.org/index.shtml,⁶ www.lycaeum.org,⁷ www.dancesafe.org,¹³ www.ravesafe.com/, ecstasy.org/, www.bluelight.nu, tripzine.com/, and www.eztest.com/) seem to convey a prodrug message couched with warnings about drug safety. Other Web sites (eg, www.projectghb.org/, www.drugs.indiana.edu/druginfo/, www.ghbkills.com/, and www.clubdrugs.org/) convey a clear antidrug message.

These drug Web sites are easily reached by anyone with Internet access. If the Web site URL is known, then typing in the address will link directly to the

Web site. Alternatively, simply typing in the name of the drug on a search engine such as Yahoo will provide connections to many of these Web sites. In fact, a recent study concluded that these "pro" drug sites, also described as "partisan" sites, were considerably more likely to be retrieved when performing an Internet Web search than were the antidrug Web sites.¹⁴

The Vaults of Erowid Web site⁶ is one of the most encyclopedic of all of the Internet drug-related Web sites. This site was started in 1995. According to the Web site, the site has >13 000 pages of information and receives hits from 18 000 visitors per day. The Vaults of Erowid Web site masthead states that its purpose is "documenting the complex relationship between humans and psychoactives." The intent of the Web site is elucidated further in the "About Erowid" Web page:

"Although the risks and problems are widely discussed, it's also clear that psychoactive plants and chemicals have played a positive role in many people's lives. As our culture struggles with integrating the increasing variety and availability of these substances into its political and social structures, new educational models are clearly needed. Erowid is founded on the belief that a healthy relationship with psychoactives is one grounded in balance, where use is part of an active, intellectual, physical, and spiritual life."⁶

The Erowid Web site is divided into 4 main divisions: plants and drugs, mind and spirit, freedom and law, and arts and sciences. Information is provided on more than 170 different chemicals, plants, herbs, pharmaceuticals, and smart drugs. The amount of information made available is truly overwhelming. Although knowledge about the use and abuse of a few of these substances (eg, cocaine, heroin, alcohol, tobacco) is familiar to health care providers, many of these substances are likely to be unknown to health care providers. Some of these chemicals are phenethylamine and tryptamine derivatives that are touted as hallucinogens, such as 2C-T-7. Little information, aside from what is provided on these drug Web sites, may be available to the health care provider. For many of these substances, the Erowid Web site provides extensive descriptive information that is divided into the following subsections: basics, dose, effects, frequently asked questions, health, images, legal aspects, chemistry, experiences, drug testing, spiritual and ritual aspects, cultivation, books, journal articles, writings, media, and medical uses. Numerous links to other Web sites on the Internet are provided with each substance.

The Erowid GHB Web page, for example, clearly states that GHB is illegal to possess, sell, or buy. The GHB legal status page specifically details the federal (a Schedule 1 substance as of March 2000), state, and international legal status of GHB. In fact, the Erowid site directly hyperlinks to the Department of Justice's Drug Enforcement Agency Web site (<http://www.usdoj.gov/dea>) to elucidate precisely the definition of Schedule 1 drugs.¹⁵ In addition, the Erowid site acknowledges that the use of GHB can be extremely dangerous and that it should not be mixed with alcohol.

Nevertheless, the site discusses the effects that one

may experience at various doses (including the pleasurable effects) and the price that one should expect to pay for a given dose and then recommends that the GHB user always start at a low dose. Detailed instructions regarding GHB synthesis include a list of ingredients and required materials. The Erowid page also "strongly recommends" that the GHB user color the liquid blue so as not to mistake it for water and to reduce the possibility that it will be added to someone's drink without their knowledge. In addition, the GHB user is encouraged to write G or GHB on their hand just in case they become unresponsive and need medical intervention to facilitate recognition by medical personnel of a GHB overdose. In fact, GHB is not usually detected by routine urine toxicology screening.

Mixed messages about other drug use permeate the Erowid drug site. Regarding the recreational use of belladonna alkaloids (eg, *Datura* species such as Jimson weed), the Web site states, "Playing with belladonna is like playing with dynamite. . . start by taking about 0.2 g of this stuff. Definitely have someone with you, have a number of a hospital with poison center available (do not be afraid belladonna is not illegal)."⁶

Lycaeum⁷ is another well-organized and comprehensive drug Web site. The mission statement of the Lycaeum is the following: "The Lycaeum works to promote public education about all aspects of psychoactive drugs and drug use, including, but not limited to: visionary and entheogenic aspects of drug use, ethnobotany of indigenous cultures, harm reduction, and health and legal risks of drug use." Most of the same drugs cited in the Vaults of Erowid are also found on the Lycaeum Web site.

The Lycaeum Web site organizes by specific drug, chemical, or plant >800 trip reports consisting of drug experiences submitted by drug users for posting on the electronic bulletin board. Although some of the comments depict the problems (eg, toxic problems) associated with the drug-taking behavior, other bulletin board postings espouse the benefits of the drug trip and provide dosing recommendations. Another remarkable feature of the Lycaeum Web site is the myriad number of links to other drug sites—both prodrug and antidrug—as well as its hosting (providing electronic space) of other related prodrug sites. These hosted Web sites include sites on marijuana cultivation (N.P. Kaye's Marijuana Cultivation Archive—the unofficial Web site of alt.drugs.pot.cultivation¹⁶—and Sunny's Seedbank Shortcuts¹⁷) and other hallucinogenic plants (Domain of *Datura*—Information on *datura* and related plants¹⁸).

One of the auxiliary Web sites hosted by Lycaeum is the Third Plateau,¹⁹ a Web site exclusively devoted to dextromethorphan. Begun in 1997, this Web site is subdivided into a number of sections and subsections. The first section is "The Beginner's Guide to DXM." Subsections include "What exactly is DXM?" "Determining Dosage, Dosage and Plateaus," "I want to try DXM. Where do I Start?" "If you get Caught," "DXM Burnout," and "Notes on DXM Addiction." There is even a subsection on "Notes on CYP2D6 Deficiency," explaining that patients with

subnormal CYP2D6 enzyme activity may have more of a prolonged effect. The "DXM Trip Reports" section touts itself as a forum for DXM users to share their trip experiences and for nonusers "to get a 2nd-hand glimpse of what happens on a DXM trip." Another section lists cough medications that contain dextromethorphan as the only active ingredient and provides photographs of the actual bottles along with the comment that these products are safe for recreational use. Dosing recommendations are made on the basis of weight, type of dextromethorphan preparation, and desired effect. Regarding what to do if caught by parents or police while high on dextromethorphan, the Web site suggests that the dextromethorphan user not inform their parents or the police that they have taken a drug and, instead, blame it on alcohol use in an attempt to defuse concern about "drug abuse."

The Vaults of Erowid Web site also provides answers to these and other questions that an inquisitive adolescent may raise: "You Mean I Can Get High Off Cough Syrup?" "What Kinds of Cough Medicine are Safe?" "What Happens if I Drink the Wrong Cough Syrup?" "I'm Taking Other Drugs—Can I Take DXM?" "What's the DXM Trip Like?" "How Much DXM Do I Take?" "Is DXM Like Acid?" "Is DXM Fun?" "Is DXM Dangerous?" and "If DXM is Dangerous, Why Do It?" The answers to each of these questions purportedly provide a balanced viewpoint by discussing the pros and cons of the drug use. The answer provided to the question, "If DXM is Dangerous, Why Do It?" is as follows:

"That's up to you. Most people in our culture seem to shun the idea of taking real risks, whether it be through drugs or high-risk sports such as mountain climbing and hang gliding. On the other hand, when someone goes and climbs a mountain without adequate equipment and training, and then falls to her death, nobody goes and blames the mountain. There are many people who believe that the risks of DXM (or other drugs) are worth the rewards. If you are a legal adult and are willing to take responsibility for your actions, in my opinion you should be permitted to experiment with psychedelics to your heart's content."⁶

On the same Web site, information on sigma opiate receptor ligands, NMDA receptors, and voltage-dependent sodium channels and their relationship to dextromethorphan neuropharmacology are also discussed.

The DanceSafe Web site⁸ is another prominent Web site that discusses extensively the use of many recreational drugs, especially those used at dances and rave parties. DanceSafe refers to itself as "a nonprofit, harm reduction organization promoting health and safety within the rave and nightclub community." DanceSafe's "local chapter" page provides access to 25 local chapters and affiliates located mainly in large metropolitan areas throughout the United States and also claims to provide information on harm reduction and drug safety. The Web site states that its information and services are "directed primarily toward nonaddicted, recreational drug users." This Web site reminds the reader that many of the drugs used at raves are illicit but conveys the message that if the proper precautions are taken, drugs can be used safely. DanceSafe states that it

“provides truthful, nonbiased information regarding the risks of using specific drugs, as well as ways to reduce those risks if one chooses to experiment.” It acknowledges that drug taking behavior may not be safe behavior, but dismisses the “just say no” approach as inappropriate for teenagers and young adults.

The DanceSafe Web site has several major sections: drug information, safe settings, pill testing, literature, and news. Drug information is provided on ecstasy, cannabis, cocaine, GHB, ketamine, nitrous oxide, tobacco, 2CB, mushrooms, alcohol, speed, and LSD. The Ecstasy section is divided into the following subsections: “What is Ecstasy,” “What are the Effects,” “What is the Dosage,” “Is Ecstasy Addictive,” and “Be Careful.” Other subsections of this Ecstasy information site include “Watch Out for Heatstroke,” “Contraindications,” “Depression,” “Neurotoxicity,” “Ecstasy Slideshow,” “Testing Kits,” “Lab Pill Testing,” and “Therapy Research.” The “Watch Out for Heat Stroke” site acknowledges that more than 100 people have died from ecstasy-induced hyperthermia. Information on heatstroke is further divided into subsections: “What you can do to prevent heatstroke,” “Warning signs of dehydration and possible heatstroke,” “Don’t drink too much water,” “What to do if someone collapses while dancing,” and “Tips for promoters and club owners.”

DanceSafe’s Web site offers access to an adulterant screening or “pill testing” program. This effort resulted from the proliferation of adulterated ecstasy into the underground ecstasy drug market. This service is billed as a “harm reduction” service because of its attempt to identify potentially more harmful substances that may be sold as ecstasy or mixed with ecstasy. The Web site goes on to state that “while no drug use is entirely safe, including MDMA, many of the fake tablets, as explained above, are far more dangerous. Adulterant screening is therefore a vital and necessary harm reduction service.”⁸ Three adulterant screening programs are offered by DanceSafe: a laboratory analysis program in which the supposed ecstasy pill is sent to the laboratory for qualitative testing, an onsite pill testing program at raves and dance clubs, and an ecstasy testing kit distribution program. The testing kits can be ordered directly over the Internet and sell for \$20 to \$45. Links from the DanceSafe Web site connect with Web sites on drug information, drug education, harm reduction, drug policy, raves, and pill testing. Links to such organizations as the Office of National Drug Control Policy National Youth Anti-Drug Media Campaign Web site (www.mediacampaign.org) are included.

CONCLUSION

Alluring information about the benefits of recreational drug use is easily retrieved on the Internet. Electronic bulletin boards, chat rooms, and question-and-answer forums convey a myriad of drug information to our nation’s populace. Information about

some of the newer “designer” drugs, including those that are not detectable on a standard urine drug screen, may be difficult to find in the medical literature and only appear on recreational drug Web sites. Adolescents, who are often adept at navigating these Internet resources, may be particularly susceptible to these communications. Knowledge about what teens are viewing may help health care practitioners better understand their patients’ own informational databank, stay informed about the latest trends in drug abuse, and position themselves as more credible resources to their patients. Educating parents about these Internet Web sites may also facilitate improved communication between parent and child regarding contemporary drug use. For additional information on these drugs, health care providers should consider referring their adolescent patients and parents to Web sites provided by the medical community, such as the National Institute of Drug Abuse Web site (clubdrugs.org).

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