

Performance Enhancement in the Academic World

Overview

When it comes to drug abuse, street drugs—like heroin and cocaine—often come to mind. In addition to illicit drugs, the non-medical use of prescription drugs is equally damaging and a growing problem fueled by easy access and social acceptance. Many prescription drugs are sold on the streets from a variety of illegitimate sources. The latest trend in prescription drug abuse is encouraged by the misperception that prescription drugs are safer and cleaner (no “bad batches”), and because there is less stigma associated with their use.

The use of prescription stimulants by students, most notably college students, is gaining visibility. The misuse of stimulant medications is not a new problem; drugs of this nature have been used for the temporary “high” they produce as well as their appetite-suppressing qualities. What’s different now is that these drugs are being used to make academic gains. This reason attracts a whole new profile of user and places the illegal use of prescription stimulants into a productivity-driven culture of use.

Known as “smart drugs” these medications are misused as study aids that students say enhance their ability to concentrate, perform cognitive functions and stay alert for all-night study sessions.ⁱ The drugs commonly used are Adderall and Ritalin, which are often prescribed to treat Attention Deficit Hyperactivity Disorder (ADHD). As prescribed, these medications are designed to treat a neurochemical imbalance that inhibits mental focus. Students are increasingly using the drugs without an ADHD diagnosis and without a prescription.



In the academic world—where performing well equates to better grades, recognition among peers and professors, prestige, and future career opportunities—the use of drugs to gain an edge is not surprising. This type of drug use is yet another form of performance enhancement and can be studied in light of recent controversy surrounding the use of steroids in professional sports. Like athletes, college students also live in a highly competitive environment where pressure to excel can entice even the most conscientious student to attempt to boost performance *unnaturally*.

While society continues to grapple with whether the use is justified or not, prevention providers must approach the issue as they would any misuse of drugs. As such, there are risks with one-time use, occasional use and also the potential for dependency, which will be discussed in more detail. In addition to illegality, these risks should be considered when assessing the seriousness of this problem.

Prevalence of the Problem

It is difficult to pinpoint the prevalence of “smart drug” use among college students. While there are multiple research studies providing data on the topic, reports

ⁱ Noted in the research literature is youth misuse of prescription stimulants to induce feelings of euphoria or to “self-medicate” undiagnosed ADHD or neuropsychological deficits.

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of findings differ by drug type, nature of use, and timeline of use. Below are recent prevalence rates:

McCabe and Colleagues Study A¹

- Population: 9,000 undergraduate university students
- Method: Web-based self-report questionnaire (50% response rate)
- Finding: 5% were using stimulants for non-medical purposes within the past year

Study B²

- Population: 10,000+ randomly selected students from 119 colleges
- Method: Self-administered survey via mail
- Findings: 6.9% had a history of lifetime prescription stimulants use; 2.1% had a history of past-month prescription stimulants use for non-medical purposes

*White and Colleagues*³

- Population: 1,025 undergraduates
- Method: Web-based surveys
- Findings: 16% misused stimulants in their lifetime

*National Survey on Drug Use and Health*⁴

- Population: 1,136 18-25 year olds
- Method: In-person, structured interview
- Findings: 5.9% had misused ADHD stimulants

*Students at High Risk*⁵

Research shows that certain subsets of youth are at greater risk of misusing or distributing prescription

stimulants compared to others. Those in the high-risk category are: whites, fraternity and sorority members, individuals with low grade point averages, and individuals who report ADHD symptoms, but are undiagnosed.

Risks of Misuse

Though effective for the treatment of diagnosed medical conditions, prescription stimulants are not without side effects and serious risks. This category of pharmaceutical is classified as a Schedule II drug in the amphetamine class. They have a high abuse risk, but also safe medical uses. As such, prescribing physicians must assess an individual's risks versus benefits through medical evaluation, and must monitor for hazardous interactions with other medications. In the most general terms, the National Institute for Drug Abuse (NIDA) cites the following risks associated with misuse of prescription stimulants:

- depression and other mental health problems,
- criminal involvement,
- abuse and dependence, and
- increased risk of mortality and morbidity.⁶

“Smart drugs” have a chemical composition similar to methamphetamine, and abuse is associated with negative impact on brain wave activity and compromised brain development. Withdrawal from prescription stimulants, once addicted, is associated with effects similar to cocaine withdrawal: severe depression, psychosis, restlessness, and extreme feelings of agitation.⁷

What did kids do before medication? They learned how to cope,” says Dorothy Sheppard, Associate Dean of Students at Johns Hopkins University. “Sometimes you’ve got to be able to figure out how to manage your time, how to prioritize, and you need to develop coping skills. I worry that if kids are turning to Adderall as a solution, they’re not developing these skills.”

*Johns Hopkins Newsletter.*⁸

Common Pharmaceutical Brands

Containing dextroamphetamine

Adderall
Dexedrine
Focalin

Containing methylphenidate

Ritalin
Concerta
Metadate
Methylin

Methods of Misuse

Oral: Tablet swallowed orally

Inhalant: Reduced to powder and inhaled through nose

Injection: Dissolved in water and injected

Access Points

Overall, prescription stimulants are not difficult to attain for people without a medical prescription. Common sources include those who have a prescription who sell or give their medications away, the internet, and illegally manufactured drugs that are sold on the “street”. Other criminal methods are used too; the US Drug Enforcement Agency lists Ritalin in the top 10 most frequently reported controlled

pharmaceuticals stolen from licensed handlers.⁹ The “street” cost of prescription stimulants are estimated to be between \$2 to \$25 per tablet, depending on the dosage, brand, and demand.

In a rigorous, national study (2007), prevalence rates for ADHD were reported as 8.7% of children between the ages of 8 and 15 years equaling approximately 2.4 million children who meet the validated ADHD diagnostic criteria. To a lesser extent, ADHD is also found in adults. Research suggests that youth who do not use all their prescribed medication commonly share, trade or sell it to peers. This is supported by evidence that up to 16% of elementary and high school students with prescriptions for stimulants had given it away, sold it or traded it; around 4% report it being stolen or coerced from them.¹⁰



Related Topics

Due to the similar nature of their effects, the research on prescription stimulant misuse is often aligned with the study of methamphetamine use. Concurrent use of methamphetamine is a focus in this area of research. Use of prescription stimulants versus methamphetamine is associated with differences in gender, race, and socioeconomic status.¹¹ Knowing who is more likely to use a certain stimulant for a desired effect helps to target prevention and early intervention strategies appropriately.

More Information

<http://www.npr.org/templates/story/story.php?storyId=100254163>

http://www.associatedcontent.com/article/136649/adderall_is_a_hit_on_college_campuses.html

<http://articles.latimes.com/2007/dec/20/science/sci-braindoping20>

<http://www.nida.nih.gov/ResearchReports/Prescription/Prescription4.html>

<http://abcnews.go.com/Primetime/Health/Story?id=814896&page=1>

¹ McCabe SE, Boyd CJ. Sources of prescription drugs for illicit use. *Addict Behav.* 2005;30:1342-1350.

² McCabe SE, Knight JR, Teter CJ, et al. Non-medical use of prescription stimulants among us college students: prevalence and correlates from a national survey. *Addiction.* 2005;99:96-106.

³ White BP, Becker-Blease KA, Grace-Bishop K. Stimulant medication use, misuse, and abuse in an undergraduate and graduate student sample. *J Am Coll Health.* 2006;54:261-268.

⁴ Kroutil LA, Van Brunt DL, Herman-Stahl MA, et al. Nonmedical use of prescription stimulants in the United States. *Drug Alcohol Depend.* 2006;84:135-143.

⁵ Wilens, Timothy E; Adler, Lenard A; Adams, Jill; Sgambati, Stephanie; Rotrosen, John; Sawtelle, Robert; Utzinger, Linsey; Fusillo, Steven. Misuse and diversion of stimulants prescribed for ADHD: A systematic review of the literature. *Journal of the American Academy of Child & Adolescent Psychiatry.* Vol 47(1) Jan 2008, 21-31.

⁶ National Institute on Drug Abuse, 1998., *NIDA research Series—methamphetamine abuse and addiction (NIH Publication No. 02-4210)*, Author, Bethesda, MD (1998, April).

⁷ National Institute on Drug Abuse, 2008. NIDA InfoFacts: Stimulant ADHD Medications - Methylphenidate and Amphetamines. 2008. Author, Bethesda, MD (2008, June).

⁸ Delman, S. (2008). Hopkins follows national trend of increased Adderall use. *The Johns Hopkins Newsletter*

⁹ <http://www.gdcada.org/statistics/ritalin/dea.htm> Accessed February 6, 2009. US Department of Justice Drug Enforcement Agency. Ritalin: DEA Evaluation 1995.

¹⁰ Wilens, Timothy E; Adler, Lenard A; Adams, Jill; Sgambati, Stephanie; Rotrosen, John; Sawtelle, Robert; Utzinger, Linsey; Fusillo, Steven. Misuse and diversion of stimulants prescribed for ADHD: A systematic review of the literature. *Journal of the American Academy of Child & Adolescent Psychiatry.* Vol 47(1) Jan 2008, 21-31.

¹¹ Herman-Stahl, Mindy A; Krebs, Christopher P; Kroutil, Larry A; Heller, David C. Risk and Protective Factors for Nonmedical Use of Prescription Stimulants and Methamphetamine among Adolescents. *Journal of Adolescent Health.* Vol 39(3) Sep 2006, 374-380.

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