Featured Articles

The ADHD Drug Abuse Crisis on American College Campuses

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Medications to treat attention deficit/hyperactivity disorder (ADHD) can increase students' ability to stay awake to cram for exams. Although popularly viewed as "academic steroids," there is no evidence that ADHD medications promote complex cognitive functioning or scholarship. To the contrary, compelling new evidence indicates that ADHD drug treatment is associated with deterioration in academic and social-emotional functioning. Yet, ADHD diagnosis and drug treatment have risen unabated for decades. Today, ADHD medications are so prevalent on college campuses that students falsely perceive these drugs as relatively benign and freely use them for nonmedical reasons, resulting in record numbers of adverse events and deaths. This article describes the nature of the ADHD drug abuse epidemic, rules some colleges have implemented to manage risk, and actions that any educational institution may consider to combat ADHD drug abuse and to promote student health and campus safety.

Keywords: attention deficit/hyperactivity disorder; methylphenidate; prescribed stimulant drugs; substance use disorders

In late 2013, the Centers for Disease Control and Prevention (CDC) announced an alarming rate of attention deficit/hyperactivity disorder (ADHD) diagnosis and treatment among American youth (Visser et al., 2013). Whether too few or too many people are being treated for ADHD has been a topic of public debate off and on for the past five decades. What's new is that the focus of the debate has shifted from concern about the social development of young children to the learning, health, and safety of college students.

This article is dedicated to the memory of Richard Fee, an aspiring medical student who died in the grips of addiction to a stimulant drug—a drug that was legally prescribed for his unwarranted diagnosis of ADHD. The authors hope that Richard's story will serve as a reminder that patients deserve to be free of unnecessary diagnosis, treatment, and harm.

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Legally prescribed ADHD medications are highly addictive substances that are widely available on college campuses. The U.S. Food and Drug Administration (FDA, 2011) maintains that these medications should be prescribed and dispensed "sparingly." Nonetheless, the use of ADHD drugs has become so commonplace that many students fail to appreciate the risks of misusing them, contributing to epidemic levels of prescription drug abuse (Watson & Arcona, 2014a). Students are using and abusing ADHD drugs for reasons as diverse as studying, weight loss, and partying. Consequently, since 2005, the United States has witnessed exponential increases in emergency room visits, overdoses, and suicides related to nonmedical use of ADHD drugs by college students and other young adults (Watson, Arcona, Antonuccio, & Healy, 2013).

Colleges and universities have responded to the ADHD drug crisis with a range of new campus rules, all carrying potential risk management and legal ramifications. New rules include forbidding college clinicians to diagnose ADHD (George Mason University) or to prescribe ADHD medications (College of William and Mary). Several institutions now require students who bring ADHD medications from home to sign a contract that they will not divert their medications (California State University, Fresno; Marist College; and The University of Alabama) or to sign a release allowing school officials to speak with parents to confirm medical histories and the veracity of reported symptoms (Marquette University). At least one school has incorporated ADHD drug abuse education into freshman orientation sessions (Clemson University), whereas another might start to require students to undergo behavioral therapy before getting their ADHD prescriptions refilled (George Washington University). Duke University recently took the bold step of declaring nonmedical use of ADHD drugs as a form of academic dishonesty. Schools that choose to maintain the status quo also face risk. Harvard University is currently being sued for malpractice by the parent of a student who received an ADHD diagnosis and stimulant prescription after one meeting with a clinical nurse specialist in 2007 (Schwarz, 2013a; Watson & Arcona, 2014b).

The purpose of this article is to raise awareness about the sort of issues that may affect an institution's liability with respect to the oversight of ADHD issues on campus, including diagnosis, treatment, and the diversion of prescription medications. The article reviews the (a) nature of the debate about rising rates of ADHD diagnosis and treatment, (b) extent of ADHD drug abuse among college students, and (c) relative risks and benefits of ADHD drug and nondrug therapies. It also suggests guidelines that schools might adopt to reduce student, institutional, and societal risk associated with ADHD drug use on school campuses.

THE ONGOING ATTENTION DEFICIT/HYPERACTIVITY DISORDER DEBATE

After an extended period of quiet throughout much of the 1980s and early 1990s, the ADHD debate was suddenly rekindled because of findings from a large-scale study published in the *American Journal of Public Health* documenting that the rate of diagnosis and drug treatment was two to three times higher than estimates of the disorder (LeFever, Dawson, & Morrow, 1999). As described elsewhere (Watson et al., 2013), concerted efforts on the part of individuals with strong financial and reputation ties to the pharmaceutical industry successfully shut down such research and forestalled debate about high rates of ADHD diagnosis and treatment. Thereafter, reported rates of ADHD diagnosis and treatment continued to rise.

By 2012, the national rate of ADHD diagnosis was 50% higher than the rate that set off alarm bells in the mid- to late-1990s, but there was remarkably little public notice or outcry. Then, in 2013, the ADHD debate was inflamed anew. This time, it wasn't research data that fueled the fire of debate; rather, a heated national discussion was sparked by a front page *The New York Times* story about a young adult's death from prescribed ADHD medications (Schwarz, 2013b). The anecdotal story profiled Richard Fee, a presidential scholar and college athlete with a high grade point average (GPA) who never had ADHD. Having used classmates' ADHD medications to help cram for college exams, Fee decided to obtain his own prescription for Adderall after graduating from college to study for medical school entrance exams. Obtaining a diagnosis and a prescription for Adderall was all too easy to accomplish with the aid of a cooperative (or perhaps naive) clinician from the surrounding college community. Over the next year or so, other clinicians proceeded to refill Fee's prescriptions or provided new ones without, apparently, validating the diagnosis or providing appropriate oversight. Fee's medical record clearly indicates that he had become addicted to legally prescribed ADHD medications—precipitating a downward spiral that ended in suicide.

National TV programs such as *The Dr. Oz Show* further exposed the apparent negligence of clinicians involved in the diagnosis and "treatment" of Richard Fee, recognizing that his case of Adderall addiction did not represent an isolated incident. During *The Dr. Oz Show*, a prominent psychiatrist who had been one of the most outspoken proponents of ADHD drug therapy apologized while on air for his history of promoting ADHD medications as "safe as aspirin." Unfortunately, the safe as aspirin sentiment had been incorporated countless times into parent and patient education meetings hosted by Children and Adults with Attention-Deficit Disorders (CHADD), which is funded by the pharmaceutical industry to the tune of more than $1 million annually.

In the wake of *The New York Times* story and related coverage by prominent news outlets, there was an outpouring of reports and commentaries in college newspapers, including one initiated by Fee's college-aged sister (Fee, 2013). Time and again, such reports portrayed widespread and startling accounts of ADHD drug abuse on campuses. Soon thereafter, one of the pillars of the ADHD movement (Dr. C. Keith Conners, professor emeritus at Duke University) told a group of ADHD specialists that the rising rates of ADHD released by the CDC in 2013 represent "a national disaster of dangerous proportions" (Schwarz, 2013c, para. 3). Nonetheless, many high school and college students report fearing that they cannot keep up with their peers unless they take ADHD drugs (Schwarz, 2012), even those who attend prestigious prep schools and Ivy League institutions such as Columbia University (Dresner, 2013).

RECOGNIZING THE ADDICTIVE POTENTIAL OF ATTENTION DEFICIT/HYPERACTIVITY DISORDER MEDICATIONS

Popular ADHD drugs such as Adderall, Concerta, Focalin, Vyvanse, and Ritalin have a high addictive potential. As early as 1995, the United States Drug Enforcement Administration had provided a stern warning about methylphenidate:

> Of particular concern is that ADHD literature prepared for public consumption does not address the potential or actual abuse of methylphenidate [the generic name for many ADHD drugs].

> Instead, methylphenidate is routinely portrayed as a benign, mild substance that is not associated with abuse or serious side effects. In reality, however, the scientific literature indicates that methylphenidate shares the same abuse potential as other Schedule II stimulants [the most addictive class of prescription drugs]. Further, case reports document that methylphenidate abuse can lead to tolerance and severe psychological dependence. (para. 9)

Subsequently, the FDA required amphetamine medications (such as Adderall) carry a black box warning label, which is a mandate reserved for the most addictive substances. This warning label is included with every stimulant prescription. It reads,

> Amphetamines have a high potential for abuse. Administration of amphetamines for prolonged periods of time may lead to drug dependence. Particular attention should be paid to the possibility of subjects obtaining amphetamines for non-therapeutic use or distribution to others and the drugs should be prescribed and dispensed sparingly. Misuse of amphetamine may cause sudden death and serious cardiovascular adverse events.

Because these medications have such a high addictive potential, nonprescription use/abuse is a serious concern (Watson & Arcona, 2014c). Yet, many professionals, parents, and patients underestimate the power of these prescription drugs because of the "successful" marketing campaigns of the pharmaceutical industry (Lacasse & Leo, 2009). Furthermore, the preponderance of the drugs among the college population perpetuates students' perceptions of the substances as relatively safe. (DeSantis, Noar, & Webb, 2009; DeSantis, Webb, & Noar, 2008; O'Grady et al., 2010; Wish, Fitzelle, O'Grady, Hsu, & Arria, 2006). The initial misuse or abuse of ADHD medications, which is defined as using the drugs without a prescription or in a manner other than prescribed, is frequently the prelude to chronic abuse or drug dependence (Greydanus, 2006).

The lower the dose of the medication, the greater the likelihood that a person will reap some benefit without experiencing significant side effects, but the dosage-response level is highly variable across individuals (Volkow & Swanson, 2003). This leaves many people who are treated with ADHD drugs vulnerable to side effects such as nervousness, anxiety, sleep disturbances, and growth suppression; appetite suppression, nausea, vomiting, and weight loss; dizziness and headaches; and changes in heart rate, blood pressure, skin rashes, and toxic psychosis. Among individuals with cardiac issues, sudden death is possible. Individuals who have or whose families have a history of alcohol or drug dependence are at increased risk for addiction and abuse. Taken in high doses, stimulant medication can result in paranoia, delusions, and hallucinations and circulatory and pulmonary problems—sometimes leading to accidental death and suicide (FDA, 2011).

ROUTINE RELIANCE ON ATTENTION DEFICIT/HYPERACTIVITY DISORDER DRUG TREATMENT CONTRIBUTES TO THE CURRENT COLLEGE CRISIS

ADHD has been conceptualized as a life-long disorder (Greydanus, 2006) for which prominent medical groups such as the American Psychiatric Association advise medication as the first line of defense. As a result, the millions of children who were diagnosed during their early school years are growing up and showing up in record numbers on college

campuses with drugs in hand (Watson & Arcona, 2014a). Because the highest jump in the national rate of diagnosis occurred during the 1990s and it continues to climb, there is no natural end in sight for concern about ADHD drug abuse on college campuses. Of concern, some key opinion leaders with strong ties to the pharmaceutical industry continue to minimize concern about rising rates of ADHD (see, e.g., Walkup, Stossel, & Rendleman, 2013).

The more a drug is prescribed, the more it will be diverted for abuse. This is exactly what is happening on school campuses across the country. Predictably, students are swapping, sharing, stealing, and selling ADHD medications (Hall, Irwin, Bowman, Frankenberger, & Jewett, 2005; Jardin, Looby, & Earleywine, 2011; McCabe, Knight, Teter, & Wechsler, 2005; McCabe, Teter, & Boyd, 2006; Weyandt et al., 2009). They often mix ADHD medications with alcohol and other drugs with serious and sometimes lethal consequences for themselves and others.

THE PROBLEM OF ATTENTION DEFICIT/HYPERACTIVITY DISORDER DRUG ABUSE IS REAL, NOT MERE MEDIA HYPE

It took a tragic news story to draw serious attention to the problem of ADHD drug abuse even though there was a substantial and growing body of scientific evidence of the problem. As early as 2002, 5.7% of college students nationwide admitted to using Ritalin at least once (Johnston, O'Malley, & Bachman, 2003). By 2006, 16% of students attending a northeastern university admitted to abusing stimulant medications, and more than half of these students reported that they used Ritalin "for fun" (White, Becker-Blease, & Grace-Bishop, 2006). Several additional studies that surveyed student behavior around the same time found rates of abuse that were similar (Hall et al., 2005; Kroutil et al., 2006; Rozenbroek & Rothstein, 2011; Sharp & Rosen, 2007; Teter, McCabe, Cranford, Boyd, & Guthrie, 2005; White et al., 2006) or higher (Arria et al., 2008; Arria et al., 2013; DeSantis et al., 2009). By 2008, nearly two-thirds of students from a large mid-Atlantic university reported that they had been offered stimulant medication and almost one-third (31%) admitted to abusing ADHD drugs (DeSantis et al., 2008). Most students report using the drugs orally; however, a concerning percentage (>15%) have reported more dangerous intranasal usage (snorting; Garnier-Dykstra, Caldeira, Vincent, O'Grady, & Arria, 2012). In one study, 60% of college students indicated that they knew someone who used stimulants for nonmedical purposes, and 50% reported that the drugs were easy to obtain (Weyandt et al., 2009).

Although the problem of ADHD drug abuse appears to be a nationwide problem, this crisis impacts specific college campuses to varying degrees. A study that examined the issue of ADHD drug abuse across 119 United States colleges noted that rates tended to be higher in New England and southern colleges (McCabe et al., 2005). However, there are exceptions to national trends. For example, rates of ADHD drug abuse have been documented to be between 8% and 13% on campuses in the Midwest (Hall et al., 2005; Teter et al., 2005) and up to 15% for some schools in mid-Atlantic states (Rozenbroek & Rothstein, 2011). Although analysis of rates of ADHD drug abuse across the United States indicates the problem is generally less significant in western states, at least one study documented that 18% of students from this region engaged in this behavior (Sharp & Rosen, 2007). A study that was conducted more than a decade ago with students from a small, competitive New England college found that 10% of the population had a diagnosis

of ADHD but that more than 35% of students who did not have a diagnosis abused ADHD drugs (Low & Gendaszek, 2002). Such findings raise questions about the extent to which campus culture influences patterns of drug abuse.

Family and student characteristics also contribute to the pattern of abuse. Compared to their peers, students with higher rates of ADHD drug abuse were more often White and had parents with relatively high levels of education (McCabe et al., 2005). Several studies have also noted higher levels of abuse among students who were affiliated with Greek fraternities and sororities (McCabe et al., 2005; Weyandt et al., 2009). Because boys have consistently been diagnosed at higher rates than girls (LeFever, Arcona, & Antonuccio, 2003; LeFever et al., 1999), the problem may be particularly acute at all-male colleges where a relatively high percentage of the student body is likely to arrive on campus with drugs in hand.

Lower GPAs have been associated with higher rates of ADHD drug abuse (Arria et al., 2008; McCabe et al., 2005). However, this does not mean that students with high GPAs do not abuse ADHD drugs. In fact, ADHD drug abuse has been documented to be a more common problem among the most competitive colleges and universities with high admission standards compared to less competitive institutions (McCabe et al., 2005). There is an emerging trend for medical students to abuse these drugs too, with 10%–15% admitting to using them illegally to enhance their ability to study (Tuttle, Scheurich, & Ranseen, 2010; Webb, Valasek, & North, 2013). In the publicly exposed case of Richard Fee and the remarkably similar, tragic, and nationally aired story of Kyle Craig of Vanderbilt University (James, 2010), impressive GPAs preceded the initiation of ADHD drug use. That Fee's and Craig's performance plummeted postinitiation of ADHD drugs raises the possibility that low GPAs may often follow—not always precede—use of the medication.

Although students are correct in noting that the drugs help them stay awake and therefore increase their ability to cram and pull "all-nighters," there is no evidence that doing so actually improves learning or retention of information. Of greater concern, there is evidence to suggest that the medications used to treat ADHD can induce symptoms associated with the more serious diagnosis of bipolar disorder, which is routinely treated with a host of powerful drugs like antidepressants such as Prozac and antipsychotics such as Risperdal (Faedda, Baldessarini, Glovinsky, & Austin, 2004). One in-depth analysis of psychiatric diagnoses in the United States and elsewhere suggested that the enormous increase in bipolar disorder among U.S. patients between 1994–1995 and 2002–2003 (Blader & Carlson, 2007; Healy, 2006; Parry & Levin, 2012) is partially attributable to people being treated for side effects of ADHD-related stimulant treatment. In this sense, ADHD is cast as a gateway diagnosis that may have unnecessarily harmed countless individuals (Whitaker, 2010).

RELATIVE RISKS AND BENEFITS OF ATTENTION DEFICIT/ HYPERACTIVITY DISORDER DRUG AND BEHAVIORAL INTERVENTION

The initiation of drug treatment undermines the motivation of students (as well as parents and educators) to take other actions to foster desirable academic engagement. In addition to the fact that the physical and psychological consequences of widespread use of ADHD medications are significant, the epidemic is linked to a national surge in adverse events—events that are often played out on college campuses. Specifically, there has been a sharp increase in the number of teenagers who are captured by the national poison control center

because of ADHD medication abuse with a disproportionately greater increase in ADHD drug abuse compared to drug abuse generally or teen substance abuse in particular (Setlik, Bond, & Ho, 2009). Emergency room visits for the same issues have doubled in recent years (National Institute of Drug Abuse, 2011). Moreover, the severity of such events has increased over time (Substance Abuse and Mental Health Services Administration, 2013).

It's been long established that neither drug addicts nor lab rats can distinguish between cocaine and methylphenidate. Now, a growing body of evidence has actually linked methylphenidate treatment to an increase proclivity toward cocaine abuse in rats (Harvey et al., 2013; Harvey, Sen, Deacluc, Dwoskin, & Kantak, 2011; Somkuwar, Chloe, Kantak, & Dwoskin, 2013; Somkuwar, Darna, Kantak, & Dwoskin, 2013). These preclinical findings add to the cautionary note about lax attitudes toward ADHD diagnosis, which has the potential to become the gateway to more serious substance use and abuse.

More than a decade ago, a Stanford University longitudinal study of hundreds of individuals from childhood through young adulthood documented that ADHD drug treatment was associated with an increased risk for nicotine and cocaine use (Lambert, 1999). However, individuals with ties to the pharmaceutical industry falsely accused the researcher (Dr. Nadine Lambert) of scientific misconduct, which caused her work to be shut down. Although the researcher was cleared of all charges, the research was not resumed before Lambert died in a tragic vehicle accident (Diller, 2005). This sort of orchestrated attack on a researcher whose findings do not square with pharmaceutical industry marketing has been documented in a *New England Journal of Medicine* article (Deyo, Psaty, Simon, Wagner, & Omenn, 1997) and other peer-reviewed publications (Healy, 2002; Watson et al., 2013; Whitaker, 2010).

The substantial risk associated with stimulant drug treatment might be best evaluated against associated academic and/or social emotional gains—namely, the reason that the drugs get prescribed in the first place. After 30 years of research on the topic, not a single study has linked ADHD drug treatment with improved academic outcomes. Hundreds of studies have documented that it is associated with short-term improvements in focus and performance on boring, repetitive tasks; nevertheless, these gains have not been shown to translate to improvements in higher order learning or scholarship (Advokat & Vinci, 2012). Of note, as early as the 1970s, the sort of studies that documented these short-term and narrowly defined behavioral improvements also demonstrated the ability to obtain the same effect through behavioral motivation (Sroufe, n.d.). At times, there have been coordinated efforts to spotlight the potential benefit of nondrug approaches to treating ADHD and the possible fallout from prematurely presuming that ADHD drug treatment is the most effective treatment option (Timimi et al., 2004); nevertheless, studies supporting views that promote nondrug therapy as the first line of defense do not make headline news or drive policy guidelines or clinical practice norms (Sroufe, 2012).

Hoping to quell ongoing controversies surrounding the treatment of ADHD, the National Institute of Mental Health funded a large-scale randomized control investigation known as the Multimodal Treatment of Attention Deficit Hyperactivity Disorder (MTA) study that compared outcomes of four types of treatment: (a) drug therapy involving carefully monitored behavior and associated titrations in dosage, (b) behavioral therapy that was rigorously employed, (c) combined drug and behavioral treatments, and (d) community care that children received from practitioners without research interference. Initial results were promising, but over time, it became apparent that the drugs—even when meticulously adjusted and administered—did not lead to improved academic or social outcomes (Molina et al., 2007; Pelham & Fabiano, 2008).

The MTA study revealed that routine community care—the care that most students receive—was miserably ineffective (Molina et al., 2007; Pelham & Fabiano, 2008). In contrast, among children who received intensive behavioral treatment prior to the initiation of drug treatment, 75% fully resolved their ADHD symptoms as reported by one of the MTA researchers (Pelham, 1999). These sobering results garnered far less media attention than the headlines associated with initial (and later failed) indications that drug therapy worked, leaving the public (again) with the general impression that drugs effectively treat ADHD. In reality, as is also the case with depression (Antonuccio, 2008; Antonuccio, Burns, & Danton, 2002; Antonuccio, Danton, & DeNelsky, 1995; Antonuccio, Danton, & McLanahan, 2003), the scientific evidence indicates that psychosocial interventions for ADHD are at least as effective as ADHD drug treatment—especially when long-term outcomes are considered (Watson et al., 2013).

More recently, a large and genuinely long-term (14-year) longitudinal study of child outcomes across Canada indicated that ADHD drug treatment was associated with deterioration of academic, social, and emotional outcomes over time (Currie, Stabile, & Jones, 2013). The Princeton-affiliated economist and the coauthors responsible for the analysis of the huge and robust national data set concluded, "Observers of large increases in the use of medication for ADHD in the U.S. are right to be concerned" (p. 26).

Because stimulant drugs have been used for decades to treat inattention, impulsivity, and hyperactivity, many professionals and members of the lay public have presumed that these medications enhance long-term intellectual performance. However, it turns out, paradoxically, that the scientific evidence does not support this line of reasoning. As detailed in a recent review, in spite of much enthusiasm about the use of such drugs as cognitive enhancers, there is little evidence that they have this desired or presumed effect. The review also noted that ADHD drugs seem to impact reaction time and processing speed (at least on narrowly defined tasks) without showing improvements in more complex cognitive functions such as memory and cognitive flexibility. Interestingly, it also documented that the vast majority of college students believe that stimulant medications improve their academic performance, but objective analysis of laboratory and school performance does not support such self-perceptions (Advokat & Vinci, 2012). Rather, as has been known for more than 30 years, stimulant medications are not associated with improved academic outcomes (Wigal et al., 1999).

In light of the significant risks and limited academic or social benefits associated with ADHD drug treatment, there may be a legitimate cause to refocus on nondrug approaches to ameliorating ADHD-related symptoms and associated outcomes (SciCurious, 2012). In fact, the flagship periodical of the American Psychological Association recently published an article promoting a shift toward efforts to ameliorate ADHD symptoms without drugs (Clay, 2013), perhaps, in part, because there are no known medical risks associated with traditional forms of behavioral and psychosocial intervention. Regardless, this arguably represents a dramatic course correction in the care of individuals who suffer from ADHD and associated issues.

UNDERSTANDING THE "FALSE" ATTENTION DEFICIT/HYPERACTIVITY DISORDER EPIDEMIC

A leading indicator is a measurable factor that changes before related factors start to follow a particular pattern or trend. The childhood rate of ADHD diagnosis serves as a leading indicator of ADHD drug abuse among college students. Therefore, it is advisable for

college and university administrators to be mindful of ADHD diagnostic trends among K-12 students and corresponding medical and societal approaches to educating and caring for individuals with ADHD-like symptoms.

ADHD was once referred to as minimal brain dysfunction and considered to be an "undesirable" diagnosis. However, access to special education services vis-à-vis an ADHD diagnosis under the Individuals with Disability Act (IDEA legislation) coupled with direct-to-consumer marketing of ADHD drugs—events that took hold during the 1990s—rendered ADHD a highly sought after diagnosis. Over time, students (or adults who were motivated to see them succeed) learned that a diagnosis of ADHD could buy extra time for test-taking; exempt otherwise deserving students from expulsion and other disciplinary actions by schools; and increase access to special arrangements in school, college, and employment settings. At the same time, direct-to-consumer drug company marketing campaigns also began to aggressively oversell the value and minimize the risks of ADHD medications despite repeated admonishments from the FDA and multimillion dollar penalties for doing so (Lacasse & Leo, 2009). Likewise, industry-paid and high profile "opinion leaders" repeatedly told the public that drugs such as Ritalin and Adderall were effective and safe. With schools, doctors, and commercials advocating for expanded use of ADHD drug therapy, many parents may have reluctantly felt that denying their children the drugs would unfairly disadvantage them (Hruska, 2012). As such, there was a 700% increase in ADHD diagnosis in the 1990s (LeFever et al., 2003).

The precipitous rise in children being labeled as having ADHD during the 1990s represents the culmination of factors described as an "accidental conspiracy" of well-intentioned adults and government policies that collided with actions of profit-driven pharmaceutical companies. It is the countless number of caring doctors, teachers, parents, and policy makers coupled with a very limited number of industry-supported individuals and insufficiently restrained corporate greed that has contributed to millions falsely believing that they have a genetic, brain-based disorder (Sroufe, n.d.). As a result, the national rate of ADHD diagnosis now exceeds all reasonable estimates of the disorder's true prevalence, representing a false and potentially disastrous epidemic (Schwarz, 2013c). Remarkably, ADHD rates have increased continuously over time in spite of the failure of research to link medical treatment of the disorder with meaningful improvements in academic outcomes.

Although the "false" ADHD epidemic is national in scope, its intensity varies by locale. For example, the most recent national study indicates that rates of ADHD diagnosis vary from a low of 5.6% (Nevada) to a high of 15.6% (North Carolina). Within-state variation is still greater than between-state differences in diagnostic patterns with notable "ADHD hot spots" (Visser et al., 2013). For example, the Virginia cities of Norfolk, Portsmouth, and Virginia Beach have had the highest reported rates of methylphenidate distribution (top 1% nationally) as well as the highest documented rates of ADHD diagnosis (17%–19% of all children in elementary grades and 33% of White boys in these grades; LeFever et al., 2003; LeFever et al., 1999; LeFever, Villers, Morrow, & Vaughn, 2002; Watson et al., 2013). Attending to the huge variability in regional rates of ADHD can provide valuable information about the relative risk of campus-related prescription drug abuse—based on where a school is located and/or from where it draws students. As an interesting development in the monitoring of this crisis, researchers have linked the tweets of college-age individuals seeking to obtain ADHD "study drugs" to the geographic regions surrounding college communities with spikes in such tweets occurring around mid-term and final exam times (Hanson et al., 2013).

In recent years, there has been a concerted effort on the part of pharmaceutical companies that manufacture ADHD medications to promote the identification of adult ADHD—including a focus on students who were not identified before going to college. To this end, CHADD has been expanding its presence on college campuses by sponsoring lectures around a movie called *ADD and Loving It!* In fact, *The New York Times* story about Richard Fee concluded with a tape-recorded quote that a Virginia Beach psychologist made while facilitating a discussion after the film was aired at Tidewater Community College—an educational institution located in the ADHD hot spot described earlier. The quote captured by the reporter pertained to the psychologist telling the audience (which included Fee's parents) that people who don't really have ADHD would not continue to take the medication. This is a misleading statement because people who do not have ADHD respond similarly to stimulant medications as do people diagnosed with the disorder (Arnsten, 2006). This same psychologist had repeatedly used the media to dismiss public concern about the documented high rate of ADHD in Virginia Beach and surrounding cities—beginning with the earliest scientific evidence that a problem existed in the community (Freehling, 1999). Without having conducted or published ADHD research, the psychologist was named to the national board of directors of CHADD and Chair of the CHADD Public Policy Committee—thus, ascending to the level of a "leading expert." Through the aid of other CHADD-endorsed or CHADD-associated "experts," many other individuals and institutions may have unwittingly contributed to hyping the benefits of ADHD diagnosis and treatment.

DIAGNOSTIC CAVEAT, COLLEGE CLINICIANS BEWARE

It is important to recognize that college clinicians (like all other clinicians) who diagnose ADHD are left to practice in the absence of sufficiently helpful clinical guidance. The *Diagnostic and Statistical Manual of Mental Disorders* (*DSM*) is the definitive source for separating the sick from the well. However, over the past few years, it has become public knowledge that the manual—the psychiatric "bible"—clearly promotes overestimation of a host of conditions and that the problem of overidentification intensifies with each new version of the *DSM* manual. The version that was in use from 1994 to 2012 was expected to inflate the rate of ADHD by as much as 28% (Frances, 2013). Kirk (2004) examined the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*) false-negative and false-positive rates for ADHD diagnosis and found it to be 34%–38%, depending on whether the true prevalence is 2%, 5%, or 10%. Lacasse and Leo (2014) noted that many clinicians and patients might never have been informed of such diagnostic inflation that is embedded in the *DSM*. The latest version (*Diagnostic and Statistical Manual of Mental Disorders* [5th ed.; *DSM-5*]) is expected to make matters worse (Greenberg, 2013), so school administrators and risk managers will continue to be challenged to respond strategically to the fallout from the medicalization of normal behavioral and academic challenges.

It may be just a matter of time before lawsuits such as the one facing Harvard University for the questionable diagnosis of one of its students become more commonplace, particularly given the evolving relationship between institutions of higher education and the increasing number of students seeking mental health care through campus clinics (Woods & Janosik, 2013). Now more than ever, it may be prudent for school clinicians to consider routinely recommending behavior-based assessments and corresponding behavioral interventions in lieu of issuing

psychiatric diagnoses and automatically prescribing psychotropic medications. In fact, there is ample justification for doing so (LeFever et al., 2003; Pelham & Fabiano, 2008; Watson & Arcona, 2014a; Watson et al., 2013). Although most of primary care physicians acknowledge that they routinely disregard established *DSM* diagnostic criteria when making a diagnosis of ADHD (Rushton, Fant, & Clark, 2004), evidence suggests that psychiatrists are more—not less—prone to recommend drug treatment involving the most potent drugs (Olfson, Blanco, Liu, Wang, & Correll, 2012). Simply deferring to specialists in not the answer.

Contrary to what is commonly portrayed in the media, promoted by industry advertisements, or recommended by the American Psychiatric Association, there is little to no justification for drug therapy as the first line of defense for ADHD diagnoses (Leo, 2002; Pelham & Fabiano, 2008).

SUMMARY

ADHD medications are highly addictive substances that can have life-threatening consequences, sometimes even when taken as prescribed. The risk is especially great for students who misuse the drugs, have a personal or family history of substance abuse, or have underlying cardiac conditions. Because ADHD drugs have become so prevalent on high school and college campuses, many students falsely perceive them as relatively safe to use, abuse, and mix with alcohol and other drugs. Consequently, in recent years, there has been a corresponding and exponential increase in related emergency room visits and deaths.

At the same time that the ADHD drug abuse epidemic has come to light, so too has compelling evidence, which indicates that ADHD medications (even when taken as prescribed) do not lead to improved academic outcomes. On the one hand, ADHD medications do not improve the condition for which they are generally prescribed, and new and compelling evidence indicates that ADHD drug treatment is associated with worsening academic and social-emotional outcomes over time. On the other hand, it has long been established that behavioral interventions confer significant and lasting improvements in academic and social outcomes without any associated risks. In light of such findings, the noted escalation of prescription abuse, and professional acknowledgement that it is ADHD is very difficult to diagnose, a growing number of academic institutions have restricted campus clinicians from diagnosing students and/or from prescribing ADHD drugs for them. Like Duke University, more institutions may assert that nonprescription use of ADHD drugs represents a form of cheating and/or violation of the student honor code.

CONCLUSION AND RECOMMENDATIONS

Although stopping the epidemic of ADHD drug abuse is a multifaceted problem that colleges and universities cannot solve on their own, there are actions that schools can take to promote scholarly learning, student health, and campus safety. It may be advisable for all institutions of higher education to consider some or all of the recommendations enumerated in the following text.

1. Evaluate the need for safeguards between the institution and industry-sponsored marketing that might undermine efforts to promote judicious use of psychotropic drugs on campus.

At a minimum, prohibit campus-based and campus-connected direct-to-student promotion of ADHD diagnosis or treatment through sponsored talks, movies, seminars, or other activities by outside professionals or groups that have ties to the pharmaceutical industry (such as CHADD) or other real or potential conflicts of interest.
2. Provide education to encourage faculty, staff (especially campus clinicians), and others involved with the education and care of students to recognize (a) the nature and extent of the ADHD drug epidemic among American college students, (b) the potential benefit of behavioral and psychosocial interventions for academic and other issues associated with ADHD, and (c) the relative risks and benefits of ADHD drug treatment among college students.
3. Implement student- and parent-orientation module(s) or other systematic processes to raise awareness of (a) the illegal status of ADHD drug diversion (felony) and the dangers associated with misuse and abuse of ADHD medications, (b) the benefit of timely behavioral interventions to support academic success, and (c) the resources that exist on campus and/or in the community to support student success and well-being.
4. Consider adopting the position that use of ADHD drugs to boost study endurance constitutes a form of academic dishonesty (akin to use of "academic steroids") that can harm student health and the school milieu.
5. Determine a feasible approach to track and monitor ADHD drug abuse trends and harmonize ADHD drug initiatives with preexisting programs that have been designed to create a school culture that promotes student success and well-being.
6. Communicate to the campus community that the institution is systematically addressing and monitoring the problem of ADHD drug abuse and describe any specific strategies or policies that are implemented to prevent it.

Given the serious risks and limited benefits associated with ADHD drug treatment, restarting public and professional debate over current diagnostic and treatment trends may be in the best interest students, the schools they attend, and their surrounding communities (Watson et al., 2013; Whitaker & Cosgrove, 2015).

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