Adderall Abuse at University of California, Santa Barbara

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It's 1 a.m. on a Thursday night, and you're in Davidson library, freaking out over a paper you have due the next day. You've been staring at this paper for hours, but you can hardly focus, knowing that this paper counts for 30% of your grade and it's on the world's dullest topic. Your friend sees you nervously downing coffee and offers you a little pill he says will fix everything. So what do you do? Thousands of college students across the country have said yes to taking Adderall as a "study-aid". But what is it that leads students to try ADHD stimulants? Is it the time constraint or the fear of failing? Do these students have exceptionally low morals or do they believe using Adderall is socially acceptable? And what's so bad about taking Adderall anyway?

While there is explicit research on rates of abuse, there is still a general controversy over why college students in particular are drawn to abuse methylphenidate (the active ingredient in Adderall) as a study-aid. One possibility assumes that because Adderall creates long periods of concentration, college students may be using it to work faster. But recently, some researchers have suggested that methylphenidate's association with an uplifted mood and higher determination may be the cause behind abuse. Academic rigor may lead students to want to control high stress and low motivation. Universities with strong academic rigor should therefore be valuable in investigating Adderall abuse.

Coming in as the 11th Top Public University in the country, according to US News (2013), University of California, Santa Barbara's academic rigor and high standards for excellence place its students directly at risk for potential abuse. Based on the existing theories for Adderall abuse, a survey was designed and conducted on UCSB students who have admitted to abusing ADHD medications. The results indicate that students use Adderall for mostly motivational and stress-related reasons and revealed that these students believed Adderall to be socially acceptable on their campus. Furthermore, the drug abuse prevention and educational

resources currently available on this campus do not mention prescription drug abuse in their curriculum (UCSB Programs & Policies, 2013) and therefore are not helping to mediate the views and practices of UCSB students. Opening the discussion about the dangers of methylphenidate abuse and alternative ways to deal with the stress of a heavy workload would potentially reduce abuse rates on the UCSB campus and set a model for other campuses around the country.

Adderall Facts: Popular, Legal, and Dangerous

Adderall is a relatively new amphetamine, and its popularity is rising faster than the public is being educated about it. Methylphenidate, the active ingredient in Adderall, was the third most prescribed drug in the United States in 2005 (Jardin, Looby, & Mitch, 2011). In fact, the number of American adults who are prescribed this medication has increased by 90% from 2002-2005 alone (Desantis & Hane, 2010), and the rates of Adderall abuse and other ADHD medications have been rising steadfastly since 1997 (Forrester, 2007). College campuses in particular have become hotspots for the illegal use of ADHD stimulants (Babock & Byrne, 2000). An analysis of Adderall abuse calls received by poison control centers in Texas from 1998-2004, as well as a study conducted on 175 undergraduate students at a large, public southeastern-U.S. university in 2007, found congruent results on who abuses Adderall. The reports by Forrester (2007) and Jardin & Looby (2011) found that most reports of abuse involved people ages 20-22 and those enrolled in a university. The finding that primarily upperclassmen engage in the illicit use of these drugs suggests that ongoing socialization during college leads students to try ADHD stimulants. Both the statewide and the school-wide analyses showed that there was no significant difference in use depending on socio-economic class among the college

students (Forrester, 2007; Jardin & Looby 2011). It appears, then, that this is an epidemic concerning college-age students of all types.

Despite the growing rates of methamphetamine prescriptions, Adderall is still a highly controversial drug due to its health risks. In 2005, Canada removed Adderall XR from its shelves due to reports of 20 sudden deaths and 12 strokes attributed to the regular use of Adderall ("The Nurse Practitioner", 2005). Strangely, Adderall XR was reinstated later that same year, and the Unites States continues to endorse this drug despite an increase in reports of Adderall abuse by adolescents in the US since 1997 (Forrester, 2007). Drug companies, administrators, and government officials know the dangers of Adderall, yet it is still widely distributed. Just because a drug is prescribed and legal does not make it safe. It is this sort of controversy that points toward the need to educate the general public about the dangers of this legal but lethal drug.

In fact, surveys show that many college students who abuse this drug know very little about it and consider it harmless. In a survey of 32 undergrad students at UCSB who all admitted to having used ADHD medication as a study-aid, 77% rated Adderall as safe or neutral to health (Carano, 2013). In a book dedicated to the history and controversy of amphetamines, Elaine Moore (2011) proves just how wrong these students are. She provides an in-depth explanation of how Adderall, Ritalin, and other ADHD stimulants work by affecting neurotransmitters in the brain. The channels of the cell wall are kept open for long periods of time so that dopamine can continually rush in. This allows for extended periods of focus and attention. However, the influx of dopamine results in decreased dopamine levels upon withdrawal. This leads students to feel tired and to have a weaker memory in the days following Adderall abuse. (Moore 2011) Because ADHD medications are highly physically addictive, the greater the levels of Adderall intake, the greater this comedown will be. With the constant intake of these drugs, the brain produces less

re-uptake inhibitors on its own and becomes more dependent on the drug to produce dopamine. The physical dependency caused by taking stimulants in large doses or over a long period of time can have terrible long-term effects (Moore 2011). In addition to long-term effects, the short-term effects alone include agitation, hypertension, drowsiness, hallucination, dizziness, insomnia, headache, tremors, dry mouth, nausea, vomiting, diarrhea, constipation, abdominal pain, reduced appetite, and anorexia (Forrester 2007). The UCSB students surveyed had all admitted to abusing Adderall and yet still rated it as a safe substance. These students would have experienced the short-term effects first hand, but they must not be educated on the long-term effects if they believe they are safely abusing these substances.

UCSB Studying Less and Stressing More

Why are students engaging in such risky behavior? In the same survey conducted on Adderall abusers at UCSB, 50% of students disagreed that Adderall made them smarter, and 25% of students neither agreed nor disagreed. In support of this self-report measure, the GPAs of the Adderall-abusing students ranged from 4.0-2.1, illustrating that study-aids did not show any significant effect on students' measured intelligence (Appendix 1). Thus, increased intelligence is not the reason behind abuse. However, 68% reported that the reason they most often take "study-aids" is to perform faster (Carano, 2013). Methylphenidate reduces the need to sleep while increasing attention. Many students will go on overly long study sessions while still staying cognitively aware. In response to this data, the seemingly logical conclusion is that stimulant abuse at UCSB is inevitable because students have a huge workload, and Adderall can help them work faster to ensure all their work gets done. However, what is most curious about this assumption is that research conducted at UCSB suggests that college students are actually

not pressured for time. This indicates that students' reported reason for taking Adderall is invalid. The underlying finding here may be that UCSB students falsely believe they have an impossible workload, thereby wrongly adding to their own stress.

The conviction of many students that they need to save time loses its legitimacy in current data. Two professors from the UCSB and UC Irvine recently conducted research on current trends in the average study time of college students across the US. They found that average study times have been steadily decreasing since the 1960s (Babock & Marks, 2010). Most institutions still maintain that the average workload, 15 units, will require students to spend at least 30 hours studying outside the classroom, but students are in fact only studying approximately 15 hours. This held true despite differences in GPA, economic status, gender, race, extracurricular activities, and employment status. The researchers could not conclude a definitive reason for why this has happened, but posited that several factors contribute to the decline in academic effort standards (Babock & Marks, 2010). Therefore, the argument that students engage in the abuse of amphetamines due to time constraints holds little validity. However, the fact that students believe they have a huge workload does legitimately add to their stress. And stress, it turns out, may be the driving factor in why students are motivated to take Adderall.

Adderall as a Coping Mechanism

The illusion of time constraints is only one of the many stressors a college student faces. These stressors can lower their self-concept and thus their feelings of self-confidence in their school work (Gilovich, Keltner, Chen, & Nisbett, 2013). Psychologists have long understood that

stress can lower motivation to complete a task for a number of reasons (Gilovich, Keltner, Chen, & Nisbett, 2013). College students are prime examples of stressed individuals; they feel pressure to succeed in college and want to keep up with a demanding academic and social life. This is where Adderall becomes an appealing option that may present an incentive boost and a way to handle stress.

The goal of the previously mentioned study on UCSB students who abuse Adderall was to target the underlying factors that lead these students to use study-aids. Carano (2013) found that of the 32 students in this volunteer survey who had all taken ADHD medications as study-aids at least once, 65% had done this more than six times so far during their studies at UCSB. The overall finding was that students primarily answered "occasionally", "frequently", or "always" when asked if increased motivation is a benefit of taking ADHD medication. 32% said that they either always or frequently took study-aids in order to feel more mentally or physically energized, and 45% said they did this occasionally. An overwhelming 55% said that study-aids made them feel more interested in the task at hand, and 22% said it occasionally did. Low energy and decreased interest are both effects of high stress (Gilovich, Keltner, Chen, & Nisbett, 2013). Taking Adderall to increase energy and interest would therefore be considered an attempt to handle stress. Furthermore, 74% said study-aids made their work feel more enjoyable. Energy, drive, interest, and enjoyment are all measures that influence mood; the high marks in these categories show that students are definitely getting an uplifted mood when they take these drugs. While stress leads to a bad mood, a good mood actually increases motivation to help combat stress (Gilovich, Keltner, Chen, & Nisbett, 2013). The summation of these findings supports the idea that students at UCSB turn to Adderall as a way to handle the common stressors of college life.

The questions in this study were modeled on a recent pilot study headed by sociologist Dr. Scott Veckro (2013) to see if his findings would correlate with the findings at UCSB. Veckro (2013) proposed that students are taking these medications for motivational reasons and as a misdirected reaction to societal pressures. He coded interviews with undergrad students for words related to energy, drive, interest, and enjoyment. Just as the UCSB students demonstrated, Veckro's subjects said they thought that Adderall would increase their cognitive performance but the effects they described were actually improved mood, energy, and goal-directed activity (Veckro, 2013). This suggests that, even if they don't realize it, students are engaging in the use of Adderall not because they feel that they cannot accomplish the work, but because they feel Adderall helps them become more motivated. Students are under a false impression that they will not be able to keep up without reverting to such drugs. Adderall has become a coping mechanism by its positive reputation on university campuses. However, universities may be able to use the type of research conducted on UCSB students to reverse Adderall's positive reputation on their campuses and to show students that Adderall is not an appropriate way to control college pressures.

Changing Common Adderall Misconceptions

Most colleges—UCSB included—have not taken effective precautionary measures against ADHD stimulant abuse, and its positive reputation has been allowed to grow. Most college students report that it is both socially and morally acceptable to use ADHD medication as a study-aid. In the survey of UCSB students, 100% of students rated study-aids as socially acceptable at their campus (Carano, 2013). On a scale ranging from 1 (completely unacceptable), to 10 (completely acceptable), all scores fell between 6-10. Students at UCSB identify using this

illicit, dangerous drug as normal behavior on their campus. DeSantis and Hane (2010), PhDs at the University of Kentucky, interviewed 175 undergrad students about the illicit use of ADHD medications. The researchers found that stimulant users not only considered study-aids as socially acceptable on their campus, but also viewed elicit prescription stimulants as having no external (legal or societal) consequences (Desantis & Hane, 2010). Students in this study classified stimulants separately from narcotics because there is a "lack of concern by law enforcement", and "stimulants cause no societal harm" (Desantis & Hane, 2010). In reality, this is completely untrue. The first-time distribution of these stimulants is punishable by a five-year federal sentence, but students are not aware of this. They hear of Adderall's reputation as a study drug, know that it is acceptable to their peers, are uneducated about the health risks, and turn to it in times of great stress.

For these reasons, students need more education on how prescription ADHD medications work, as well as more information on techniques for handling stress and motivating themselves to tackle daunting tasks. Based on the findings of their interviews, Desantis & Hane (2010) purposed that prevention techniques on college campuses should dismantle the illusion that the misuse of prescription medications is safe; they should also fully educate students about how these stimulants work so as to dispel the belief that ADHD medications are nothing more than "a stiff cup of coffee". At UCSB and universities across the country, it is apparent that students do not understand what they are risking when they indulge in stimulant use. Researchers, psychologists, and educators must be careful when describing stimulants as cognitive enhancers, when in fact they also play a large role in motivation and mood. In order to help students understand how to deal with the pressure to take Adderall, education programs must address this key motivational problem. Educators should outline alternative ways to handle stress, suggest

other venues for increasing motivation, and disprove rumors that Adderall will make their problems with motivation disappear.

The idea is that students need to be briefed young, before they are left to fall prey to their misinformed peers. UCSB already has two mandatory programs in place that are meant to educate incoming freshman about a number of health and safety topics so they can be better prepared to make better choices throughout their college years. “AlcoholEdu” and “Gaucho F.Y.I.” state that they cover alcohol abuse, rape prevention, marijuana and drug use, sexual violence, and stress problem solving techniques. (“UCSB Programs & Policies”, 2013). But analysis of their curriculums shows that they do not provide much information on stimulant abuse. That is not to say that UCSB has no current information available to students. The UCSB Alcohol and Drug Program website has articles detailing the dangers of illicit stimulant use and offers counseling at the Student Health building. But these options are not mandatory, and they deal with the problem after the fact. Many students would not search the website for more information until after their peers had introduced them to this suspicious new drug. The best way to prevent rising trends in abuse at UCSB would be for school administrators and psychologists to incorporate education on ADHD stimulants into the existing, mandatory programs. These programs should have more emphasis on which stressors and motivational problems can lead student to mistakenly turn to Adderall. If UCSB can implement this into its curriculum, it would become one of the first proactive campuses in tackling methylampheniate abuse, and it would become a model for other schools to follow.

Making the Adderall Debate a Conscious Debate

Motivation is a major cause for college students to partake in the use of illegal stimulants,

but it is not the only driving factor. It is, however, one that has not been given much exploration as a possible avenue for prevention efforts. Students may try to justify their reasons for taking Adderall because they simply feel that they don't have enough time to keep up with the high demands or competitive nature of college, when in fact this is only a mask for the real causes that lead to Adderall abuse. Students are not purposely taking a dangerous substance as a response to stress. Stressors are causing their motivation to plummet, and they are turning to substances with the best reputation. It is important to note that this finding is happening on an unconscious level. The problems of low energy, negative mood, and decreased belief in one's own ability to complete a task are all signs of high-stress that a student may not be consciously aware they are experiencing. When students are prodded about their Adderall abuse, it is only then that they begin to realize the complexity of their decision. What seems like a simple decision to take ADHD medication reveals deeper worries. The goal, then, is to bring these unconscious workings to the forefront of consciousness so that students can better evaluate their own decisions. Of course, even with the best education, some students will still choose to manipulate illicit substances. But it is the responsibility of UCSB, and all universities, to provide their students with the education to make the best possible informed decisions.

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Appendix A

Survey: Adderall Abuse at UCSB

See excel file for data