Illicit Use of Prescription ADHD Medications on a College Campus:
A Multi-Methodological Approach

Alan D. DeSantis, Elizabeth Webb, & Seth Noar
University of Kentucky

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Abstract. **Objective:** Quantitative and qualitative methodologies were used to investigate the use of illegal Attention Deficit Hyperactivity Disorder (ADHD) stimulants by college students. The primary goal of the study was to determine the students’ levels of understanding and motivations for use of these Schedule II controlled substances. **Participants:** From the Fall of 2005 through the Fall of 2006, 1,811 undergraduates were studied at a large, public southeaster research university in the United States. **Methods:** Surveys were administered to 1,811 undergraduates. Additionally, 175 in-depth interviews were conducted. **Results:** Of the study participants, 34 percent reported the illegal use of ADHD stimulants. The majority of users obtained these stimulants from fellow students with prescriptions. Most illegal users claimed to primarily use ADHD stimulants in periods of high academic stress and believed that they not only reduced fatigue, but also increased reading comprehension, interest, cognition, and memory. **Conclusion:** The use of both quantitative and qualitative data has supplied a rich and complex understanding behind the growing national trend of illegal ADHD stimulant use. Specifically, findings highlight how a) easy it was for subjects to obtaining stimulants; b) little health information illicit users have about stimulants; c) academic stress created a fertile context for stimulant use; and d) a small number of prescribed users (4 percent) supplied the vast majority of illegal users with their stimulants.

**Key Words:** ADHD; Adderall, stimulants; prescription drug abuse, college students
The rise in the diagnosis and treatment of American children with Attention Deficit Hyperactivity Disorder (ADHD) has been well documented since the mid-1990s.\textsuperscript{1-5} According to the Centers for Disease Control and Prevention,\textsuperscript{6} there are over 4.4 million children between the ages of 4 and 17, or a national prevalence rate of 7.8%, who have been diagnosed with ADHD. Of these, 2.5 million children have been prescribed stimulants to treat the disorder.

Adderall (mixed salts amphetamine), Ritalin (Methylphenidate), and Dexedrine (dextroamphetamine), are considered first-line pharmacotherapy for ADHD, with Adderall being the most widely prescribed of the three. Because of the potential for abuse and psychological and physical dependency, the U.S. Drug Enforcement Administration (DEA) classifies these stimulants as Schedule II substances.\textsuperscript{7}

In recent years researchers have begun investigating the illegal use of stimulants, prescribed for the treatment of ADHD, on American college campuses.\textsuperscript{8-16} Estimates of the prevalence of use have tended to vary. McCabe et al.\textsuperscript{11} in a multi-site study, surveyed 10,904 students at 119 nationally representative 4-year colleges in the United States. They found that 6.9% of the students surveyed had used an illegal prescription stimulant in the last year, and reported that illicit use was highest among 1) white fraternity members; 2) students from the Northeastern region of the United States; and 3) students from colleges with more competitive admission standards. They also found that non-medical prescription stimulant users were more likely to report use of alcohol, cigarettes, cocaine, marijuana, ecstasy, and other high risk behavior.\textsuperscript{11}

Other investigations of the prevalence of illegal prescription stimulant use have yielded values higher than McCabe et al.\textsuperscript{11} For instance, Babcock and Byrne\textsuperscript{8} found that 16% of their sample used Ritalin (Methylphenidate) recreationally. Hall et al.\textsuperscript{9} reported a gender difference in that 17% of males and 11% of females surveyed illicitly used stimulant medication. Further, examining use of amphetamines in a convenience sample of students, Low and Gendaszek\textsuperscript{10} found a prevalence rate of 35.5%.

Exploring the issues of ethnicity and motivation, Teter et al.\textsuperscript{15} asserted that Caucasians and Hispanics were more likely to illegally use prescription stimulants than African-Americans and Asians. They also found that the majority of students who used illegal prescription stimulants, regardless of ethnicity, did so to enhance their academic
performances. Sixty-five percent reported using these drugs to aid concentration, 59.8% to “help study,” and 47.5% to “increase alertness.” Other motives not associated with academic performance included getting high (31.0%) and experimentation (29.9%).

While these data give us some understanding of the prevalence of stimulant abuse and provide some basic answers as to why students use these substances, they stop short of supplying a thick description of the behaviors, conceptions, and choices of users that can only be mined through qualitative methods. Consequently, the purpose of this research is to investigate how and why college students, at an American public university, use illicit prescription stimulants through the use of both quantitative survey data and in-depth qualitative interviews. Specifically, we examine 1) factors that led to first use of prescription ADHD medications, 2) motives for continued use of these medications, and 3) where and how students access these medications.

METHODS

This study utilized both quantitative surveys and in-depth qualitative interviews. The university’s Institutional Review Board Human Subjects Committee approved all quantitative and qualitative methods for the current study.

Quantitative Surveys

Survey data collection occurred in two waves. In part one, the surveys were administered by the researchers to a convenience sample of 1,340 students enrolled in a large lecture-hall introductory communication theory course, over the course of three semesters (Fall, 2005, Spring, 2006, and Fall, 2006). This class meets the university’s social science requirement; thus, it provides a sample of students from a multitude of majors from across campus. Given that students who take the course are disproportionately freshman or sophomores, additional efforts were undertaken to survey upper-class students. Thus, in part two of survey data collection, an additional 471 surveys were administered by the researchers to convenience samples in upper-division (n = 188) communication classrooms, and by paid undergraduate research assistants to the general student body outside of the classroom (n = 283). The trained undergraduate research assistants conducted the surveys outside of the classroom by administering surveys to upper-division students at popular places on campus (e.g., libraries, dining
halls, Greek houses). The undergraduates had completed an upper-division research methods class and were certified by the university’s Institutional Review Board.

The 25-item survey was designed and pre-tested specifically for this study. Question wording and survey structure were revised after a pilot study of 94 students, based on feedback and student input. The first nine questions obtained basic demographic information about participants. Two questions inquired about the subjects’ awareness of others’ use of non-prescribed stimulant medication as well as if they had ever personally used a prescription stimulant. Nine questions inquired about the details, perceptions, and reasons for personal use. Five questions inquired about other drug and alcohol use.

In part one of survey data collection, the researchers entered the lecture hall at the beginning of class and described the study. It was explained that participating in the study was completely voluntary and would amount to an educational experience. Informed consent was then obtained from students interested in participating, followed by handing out and completion of the surveys. The survey took students, on average, approximately 7 minutes to complete. In part two of data collection, researchers handed out surveys in upper division communication classes and 6 trained upper-division undergraduates handed out surveys to fellow students. The same procedure described above was followed.

The total final sample consisted of \( N = 1,811 \) students. The sample was 45% male and 55% female, 92% white, 4% African-American, 1% Asian/Pacific Islander, 1% Hispanic/Latino, and 2% other race/multi-racial. Thirty-seven percent of the sample were freshmen, 27% sophomore, 19% juniors, and 17% seniors. Forty-four percent of the sample were members of Greek organizations. These demographics roughly mirror campus figures, which are 47% male and 53% female, 82% white, 6% African-American, 2% Asian/Pacific Islander, 1% Hispanic/Latino, and 9% other race/multi-racial. Campus figures also indicate that 28% are freshmen, 21% sophomores, 21% juniors, and 30% seniors. Eighteen-percent are members of Greek organizations.

**Qualitative Interviews**

One hundred seventy-five full-time undergraduates at the university were interviewed, using hand-held audio tape recorders, during Spring and Summer of 2006. Along with the primary author of this study, six paid undergraduate students also
conducted interviews. The undergraduate interviewers had all completed an upper-

division research methods class and were certified by the university’s Institutional

Review Board. Additionally, the interviewers were trained and supervised by the

researchers in interviewing procedures, ethical guidelines, and transcription protocol.

Each of the undergraduate interviewers was given a detailed interviewing script to follow

and obtained written consent before each interview.

Undergraduate interviewers were strategically selected to facilitate the comfort

and trust levels of the undergraduate subjects being interviewed. Interviewers were

assigned specific demographic segments of the campus population to interview based on

comfort and fit with these groups. For instance, females interviewed female students

while males interviewed male students.

Finally, during the transcription stage of this project, all names were changed and

replaced with arbitrary pseudonyms to protect the anonymity of the subjects.

Furthermore, any identifying markers and/or references to people, organizations, or

events that could jeopardize subject anonymity were either changed or deleted from the

transcription record.

RESULTS

Survey Overview of Adderall Users

Of the 1,811 students that completed the surveys, 4% (78) of our subjects reported

having a legal prescription for an ADHD medication, and as such were removed from the

dataset. However, 34% (585 of the remaining 1,733) had used ADHD medications

illegally. Of these 585, 49% were males and 51% were females. Whites comprised 94%

of illicit users; the remainder were African Americans (3%) and other/multi-racial (3%).

In addition, 22% were freshman, 25% sophomores, 28% juniors, and 25% seniors.

Finally, 61% of illegal users were in fraternities or sororities.

To estimate the proportions of individuals using by demographic category, we

divided the number of users in each category by the total number that were surveyed

(excluding the individuals with legal prescriptions). For instance, we surveyed a total of

708 males. Of these, 278 (39%) reported illicitly using prescription ADHD stimulants,

while 430 (61%) had not used. We also surveyed 895 females, of which 266 (30%)
reported using while 629 (70%) had not used. Table 1 reports the results by demographic categories, including gender, race, year in school, and Greek status. In this table, use and nonuse of stimulants was cross-tabulated by these demographic factors, and chi-square analyses were conducted in order to examine statistically significant differences. These data suggest that illicit use of ADHD prescription medications is significantly more common in men than women, in whites compared to other racial groups, in upper classmen, and in Greeks (versus non-Greeks). These subgroup differences are consistent with previous research.\(^{11}\)

**First-Time Use**

Of the illegal users in our study, 63\% (n=368) first used non-prescribed stimulants in college. Such statistics, however, can only tell us so much about first-time use. With the augmentation of the qualitative interviews, we have also been able to investigate what factors led to their first use of illegal stimulants and what type of early information about the advantages and risks of stimulants were provided to them.

The first thing that became evident during the course of our interviews was how prevalent the use and casual discussion of stimulants were on the college campus. First-time users did not need to seek out or discover information about the drug; ADHD stimulants were a salient part of their university culture. Jill remembers, for instance, how “everyone was taking it” in all the “dorms her freshman year.” “It was just normal, you know, common.” When we asked Lauren, a second year accounting major, how she first heard of stimulants, she similarly told us that after arriving on campus, “everyone was talking about it, so it became no big deal.”

While discussions about ADHD drugs may have been both omnipresent and casual on campus, the first-time use of stimulants for most of the students in our study was almost always accompanied by periods of high academic stress and anxiety. It was, as Maggie claimed, “an emergency. I was stressed, overwhelmed, exhausted because I had to do a lot and there was no way I could do it. So I decided to see if it was like what everyone was saying.” For John, a junior architecture major, it was the anxiety produced by his “first big project that had to be completed by the morning” that “pushed him over the edge. . . . There was just no other choice.”
In well over two-thirds of all the interviews we conducted, however, it was the pressure-filled nature of finals that created the ideal situation for illegal stimulant use. “My first time was during my freshman finals,” Joe retells. “I had a lot of pressure to do well, and I just felt like I needed help.” It was also “first semester during finals week” for Lisa when she made the decision to try Adderall. “I had to cram for a really big test that next day. Pressure makes you do things like that [laughter].”

While everyone we spoke with acknowledged the stress of finals, many reported that it was not just end-of-the-year test taking that drove them to try stimulants, but having to take multiple final exams on the same day. This combination seems to create a “perfect storm” in which stress and exhaustion collide with the desperation of students. “I didn’t want to try it. I was even a little scared,” remembered Jackie. “But I had two other tests besides that one [her biology exam], so it was three tests on one day.” Similarly, Brian’s first use came on the eve of two business exams. “There was just no way I was gonna pull it out. I just could not focus. It saved me. Still does.”

The most disturbing aspect of these students’ first-time use was how little information they had about stimulants before trying them. In almost all cases, the only knowledge these students had about ADHD medication was what they had heard from other students. John told us that he heard that it was a “miracle!” and a “study drug” from his fraternity brothers. Janet was told that “it keeps you awake all night long and makes you not hungry” by her roommates. For Alan, Martin, and Chris, it was the repeated testimony from friends who “loved it,” “did well on tests on it,” and “got better grades” because of it. None of the 175 subjects that we interviewed, however, sought out information from health professionals, medical or pharmaceutical reference guides, or even Internet sites before taking their first dose.

**Motivations for taking illegal ADHD medications**

**Academic Motives**

Unlike most other illegal substances taken by these college students, stimulants were not primarily used for social or entertainment purposes. While our subjects told us that alcohol, marijuana, prescription barbiturates, and cocaine were used almost
exclusively to “get high” and to “have fun,” ADHD medications were used predominantly for the more serious pursuit of “getting good grades.”

Of the students who reported using illicit stimulants, 72% (n=420) claimed to do so to stay awake for the purposes of studying longer (see Table 2). “If I procrastinate,” explained Peter, a junior agriculture economics major, “then it helps me cram. If I need to stay up all night, then I kind of need it.” For Jason, procrastination is not the problem; it is finals. “They suck. That’s the only time I take it. Every year during finals week. But I don’t usually take it during the semester when my tests are spread out.”

The students’ use of amphetamines to stay awake, while disturbing, was not surprising. Fighting fatigue and increasing energy are the most obvious and well known effects of stimulants. As Justin told us, “that’s why they call it speed.” What did surprise us, however, were the illicit users who touted ADHD medications for their ability to help them concentrate and focus on academic tasks.

Of the 585 students who admitted using illicit stimulants on our survey, 66% (n=389) reported taking them “to help concentrate” on school work. After analyzing the interviews, however, we discovered that, below the surface of these statistical data, the students’ conception of “concentrating” has multiple and layered meanings. Specifically, these students claim that they can study longer, stay focused without distraction, and be more productive.

For many in our study, the most important part of concentrating was the ability to study for longer periods of time. Chris, for example, told us he “can stay focused for a lot longer. Instead of going for 45 minutes and getting distracted, I can study for three straight or four straight hours.” Lauren, who gets “easily distracted,” claimed that she can “work and read for like five hours straight without a break. I normally can’t make it more than like a half an hour without it [Adderall].” Even more remarkable, Brad “swears” he is able to “focus like ten times more. . . . Like instead of just reading like a little part, I can sit down and actually read like, you know, a lot of pages of a book. Like 50-60 pages of a book instead of reading like two pages.”

For others in our study, it was not necessarily their ability to study for longer periods of time, but their ability to focus on a single task without distraction. For example, John takes Adderall because he feels “like it blocks out outside noise. I
personally pick up on everything, distractions, you know, and things like that. So for me, it’s about focus and concentration.” “For me,” remarked Tara, “it just zones me in to what I’m doing. It zones me out to all the outside noises around me. It’s incredible.”

Most of the students we interviewed also claimed that stimulants made them more productive. For Nancy, in fact, it is her primary motivation for stimulant use: “I get everything done, quickly. I am like crazy on it that way. I can have so much work to do, and I can just sail through it.” Similarly, Cameron explained that, he is “so much more productive. I mean I’m generally productive. It’s just like a different level on Adderall.”

The most interesting, and unexpected, advantage that led students to use stimulants was not productivity, but increased intelligence and heightened cognitive aptitude. As Mitch simply, but succinctly, remarked, “the stuff is like an academic anabolic steroid.” This “steroid effect” can best be understood as the enhanced ability to memorize, grasp ideas, and recall information.

For 36% (n=213) of users in our study, “being smarter” is equated to the heightened facility to memorize and retain information. “Normally I’m slow,” explains Josie, “but on Adderall I can memorize anything. It just goes in and you got it.”

Similarly, John, a junior history major, told us of an exam where he “had to memorize like over 10 essays.” Without stimulants, “there is no way I could do it,” he confessed. “But it was just easy. I read it and I got it. It was crazy.”

For others, like Justin, a senior economics major, the claim is that stimulants dramatically increase the ability to “grasp ideas” that would “normally be too hard to get.” He told us that “stuff just registers better” when he is on it. “Reading or trying to figure out problems, it just comes easier.” Neil also notices a demonstrative difference in “grasping ideas.” “I can tell the difference,” he explains, “between when I am on it or not. I grasp everything so much easier. . . I feel like a genius on it.”

And still for others, like Caroline, it is the ability to “recall information quicker” that is the primary cognitive advantage of stimulants. “Information just comes to me,” she continues, “in a really easy way. I don’t have to search for it. I memorize it once and it is there.” In a similar vein, Nathan told us that he can better recall information during tests. “I feel like I get finished with it quicker” because “It’s automatic, like I recall things
quicker.” During his ACT, for example, Nathan was “able to zoom through it. I remembered everything that I think I would have forgotten.”

Finally, 12% (n=70) of users reported taking stimulants to “make academic work more interesting.” As Scott, a sophomore sociology major, told us, academics can be boring, but, “You pop that pill and that is all, you are really into that subject.” For Andrea, stimulants actually make work “enjoyable.” “It was about a week ago on a Sunday,” she describes, “and I had a lot of work to do and was really stressed.” After taking 20 milligrams, however, “work just became really fun, enjoyable. I actually enjoyed going to the library on it.”

In summary, our survey data showed that our subjects’ primary motive for taking ADHD medications was to earn better grades in school. With the augmentation of our qualitative data, we were also able to discover a myriad of more subtle motives defining when and why these students take stimulants. We know, for instance, that our subjects primarily take stimulants during finals week or during periods of high academic stress. We also know that these same students take stimulants, in order of importance, to 1) stay awake, 2) concentrate (e.g., focus longer, avoid distraction, be more productive), 3) increase cognitive aptitude (e.g., aid memorization, comprehension, and recall) and 4) make material more engaging. But academic improvement was not the only motive for stimulant abuse. In the following section, we will investigate the non-academic motives for taking ADHD medications.

**Non-Academic Motives**

It is clear from both our quantitative and qualitative data that students primarily use stimulants to earn “better grades” and to do “better in school.” At times, however, these students turned to stimulants for recreational purposes. Of the 585 students who admitted using illicit stimulants, 7% (n=39) also reported taking them “to have fun.” Inside these numbers, however, our interviewees detailed a number of ways stimulants are used to promote “fun.”

The primary social advantage for stimulant use is the additional energy it supplies to the users. “If you have a big night,” explained Jake, “and you are tired, you just take Adderall and you are set to go all night.” For John, it was “this big camping trip we [he] took last semester, in the Spring,” that convinced him to use stimulants. “We all decided
that we were going to drink all night and stay up until the sun rises, so we all just took like 25 milligrams of Adderall. It worked!” Stacy first decided to try Adderall on her prom night in high school: “I was 17, senior year, and everyone was gonna’ stay up all night after prom. So some of us took it. It was a pretty cool night.”

Along with staying awake, users also claim that stimulants make them more social and talkative during their marathon party sessions. Kevin, who confessed he is “naturally a little shy,” believes that he is “just funner and funnier.” He continues: “I am really good, or at least I think I am, when I am on it. I can really talk. People think I am funny on it.” Caroline similarly feels like she is “set to go.” “I go out and I am really outgoing. I am set to go. I can just go up to anybody and start conversations. And they are good ones. Not the drunken kind.”

For others, it was the interactive effects of combining alcohol and stimulants that were sought. Interestingly, our interviewees could not agree on what specifically happens when you combine alcohol and stimulants. Rebecca claims, for instance, that “people take it before they drink because it doesn’t get you as drunk. So you can drink more over a long period of time and not get ridiculous.” Just as many people we spoke with, however, claimed that “the best thing about it [stimulants] is that it gets you drunker” (Mason, sophomore business major). Francis told us that, since high school, she and her friends take it before they “drank because it gets you drunker, or at least that is what we think.” This same “advantage” was articulated by Cam, who also likes having the extra energy. “So, it is like this: We take it before we drink because we get drunker, quicker, and you can go forever. It’s like two for one.”

Some in our study, however, preferred the straight, unaltered effects of stimulants. Seven percent (n=39) of users admitted to taking stimulants because they are a cheap, easily accessible high. “It’s such a new craze,” elaborates Brad. “I don’t know if it is going to spread like pain killers, but people are snorting it like coke.” “The best way to do it,” Keith explained, “is to mash it up. It [Adderall capsules] is time released and if you mash it up, you get it all at once, like a rush. So you snort it.” “The best thing,” expands Matthew, “is that it is cheap coke. You know you get that same high but you can get it for like five bucks.”
For a disproportionate number of women in this study, stimulants were touted for their ability to suppress appetite. For some in our study, the loss of appetite was simply a beneficial side effect of stimulants. Nancy, for instance, tells us that while she only takes Adderall to study, “it is kind of cool that you also don’t want to eat either.” For other females in our study, however, suppressing appetite was the primary motive for stimulant use. “The first time I used it,” confessed Brenda, “was because one of my sorority sisters told me how great it was. She said you don’t want to eat and it is safe and everything.” Like the use of stimulants for academic reasons, however, most of the women claimed to be strategic about when and why they use ADHD medications for weight loss. “Spring break is a big one,” explained Jackie. “Most of the girls in my sorority will use it before spring break so they look thin, special occasions like that.” Fraternity formals were another recurring context inviting extreme dieting in many sorority houses: “Sometimes you need a little help [laughs]. You put on a little weight and you know you have to get in a tight dress. It really takes your hunger away for a few days. I don’t use it all the time though, no. But sometimes, you have no choice.”

For many of the subjects in our study, therefore, stimulants are also used for purposes other than academics. These students found great utility, for instance, in Adderall’s ability to fight fatigue (especially during extended periods of partying), increase sociability, heighten the effects of alcohol, decrease the depressant qualities of alcohol, simulate cocaine, and suppress appetite. The obvious question left unanswered, is how do so many students obtain such a popular, versatile, and highly controlled narcotic?

**Obtaining Illegal Stimulants**

The ADHD medicines investigated in this study are classified by the DEA as Schedule II drugs because of their high potential for abuse and risk of severe psychological and/or physical dependence, (United States Department of Justice Drug Enforcement Administration [USDOJ DEA]). Consequently, Adderall, Ritalin, and Dexedrine are legally available only through prescription, with a limit of thirty days’ worth of doses, and no refills. Additionally Schedule II drugs are subject to production quotas set by the DEA. Other often-discussed Schedule II drugs include cocaine (used as
a topical anesthetic), Morphine, Phencyclidine (PCP), short-acting barbiturates, injectable methamphetamine, and most pure opioid agonists such as opium and OxyContin, (USDOJ DEA).  

For most of the students in our study, however, the DEA’s Schedule II classification means little. As Mark, a senior marketing major, claims, “the stuff is everywhere. Just ask anybody and they will either have it or know somebody that has it. It’s really no biggie.” And Mark is not alone in his sentiments. When asked how difficult it is to obtain illegal stimulants, 39% (n=231) reported that it was “very easy.” Forty-three percent (n=250) of our subjects thought it was “somewhat easy.” Thirteen percent (n=76) claimed it was “somewhat difficult.” Less than 1% (n=3) of our subjects thought obtaining illegal stimulants was “very difficult.”

Disturbed that nearly 85% of our 1,811 subjects thought that obtaining illicit stimulants was either “very” or “somewhat easy,” we sought to find a richer understanding behind these numbers. We asked our subjects to expand on where they get their drugs and what procedures are involved in their procurement.

We discovered that the students in this study did not get their stimulants from shady-looking drug dealers standing on street corners. Instead, 89% (n=521) of users claimed to get their substances from “friends” (87%) or “significant others” (4%). Only eight percent (n=44) claimed that they procure their stimulants from “strangers,” or, as Leslie more aptly defined them, “friends of friends.” Only 4% (n=78) in our overall sample claimed to have a prescription from a doctor to treat their diagnosed ADHD. Apparently, this 4% is also the primarily distribution source that supplies stimulants to 34% of the general student population and 48% of the Greek population.

So where can this 4% be found? According to Margaret, “they seem to be everywhere. Somebody that you know personally has a prescription. It’s not like they hide it. Everyone knows. It’s cool.” “I think everyone knows a few people with it,” explained Beth. “Today it seems like everyone is ADHD, aren’t they? Everybody is medicated on something [laughs].” Jeremy told us that, “You know which of your friends have it; people aren’t really discrete that they have it. They become famous [laughter].”

For members of sororities and fraternities, gaining access to these stimulants is even more effortless. While an overwhelming 46% reported obtaining prescription
stimulants was “somewhat easy” and 43% claimed it was “very easy;” only two of the sorority and fraternity members surveyed reported obtaining prescription stimulants was “very difficult.” “In our house, there is always a few brothers with it. So we really turn to them, especially during finals. They are really good about hooking us up first. It’s easy. Except during finals when we all want it [laughter].” Lauren, a member of the Omegas, told us that in her house, “there are two sisters that are really great about helping us. They will always give us their extras.” The close proximity, according to Abby, is the key. “You are always there, so you just ask somebody. At dinner or just walking through the rooms. If you can’t find any, there is always somebody around that knows somebody, in a fraternity or somewhere.”

For those without such fraternal or sororal bonds, there is always the university’s library, the epicenter for stimulant-drug distribution. What makes this site so ideal is that it has open “core areas” ergonomically designed to facilitate human interaction. Most importantly, the library has also been collectively defined by the students as the open and safe site for obtaining ADHD medications. “You probably look for it at the library,” answered Brittney when asked where to find stimulants. “Believe it or not, that’s probably the hot spot. You go to the library if you want Adderall, cause that is where it is.” Supplying more detail, Christi claimed that, “Literally, each core of the library will have two or three people that have it. Literally each core. Like core 1 through 4 will have like three people with it. It really is kind of funny.”

With such a high demand for the product and its restrictive Schedule II classification, one may assume that acquiring these stimulants would be expensive; It is not. Approximately 15% of the people we interviewed, in fact, claimed to get their stimulants for free from close friends who have prescriptions.

For paying customers, the going rate ranges from three to ten dollars per pill. William, a junior who often sells his prescribed surplus, has created his own pricing method: “I have 30 milligrams. My going rate is one dollar for every five milligrams. So I sell them for usually six dollars.” Robert, another seller, prices Adderall at “10s [milligrams] for three dollars, 20s for four dollars, and five dollars for the big 30s.” Buyer Caroline simply pays a flat rate of five dollars: “I don’t normally worry about the milligrams.
It is generally agreed by most buyers and sellers, however, that stimulant sales are not about the money. While there are a few exceptions, like Mark, who fills his prescription each month and sells “the whole bottle for $100 to $150,” most buyers perceive, and sellers claim, to do it as a service for their friends. As buyer Charles sees it, “I think they do it just to be good guys. I mean, come on, what’s a few bucks?” Seller Abraham explains his situation this way: “I don’t charge to make money really. But I charge five or so because of the inconvenience that it causes me.”

But how and why do these diagnosed ADHD students have surplus pills for sale if these stimulants are so highly regulated? The answer, as Patrick told us, is because “no one takes it everyday. That would kill your system and really screws up your body.” Similarly, Katie told us that she “does not think it is smart to put that sort of chemical in your body everyday.” So she gives her “body a break.” Some of the more common side effects mentioned, by both legal and illegal users, include the inability to sleep, sweating, increased heart rate, loss of appetite, and, for some men, the inability to get an erection. “To take it every day,” explains David, “would really mess you up. You would like never eat or sleep well. You just can’t do it, really.”

Consequently, every student with a prescription that we spoke with was strategic about their stimulant use. Many, for example, never take their medication on weekends. Others take it only on the days they have classes. And still others take it only when their work load demands a heightened level of attention and concentration. Gena, a diagnosed ADHD student, explains her decision-making process: “I don’t need it every day. You don’t need them on the weekends. Or maybe you might need it on a Sunday, but not on a Friday. So you always have extra to give to friends if they need them.”

For most prescribed students, therefore, having surplus stimulants at the end of each month is common. Selling their leftovers is simply seen as a morally inconsequential win/win decision. As James framed it, “What am I going to do with all those pills? So I figure, if I can help out some friends and make some beer money, life is good [laughs].”

COMMENT
The purpose of the current study was to gain a broader understanding of illicit ADHD stimulant use by students on a college campus using both quantitative and qualitative methods. The quantitative data suggest that the overall rate of use was a staggering 34%, which is higher than previous studies have reported.\textsuperscript{8,10,11} Although our sample was in many ways one of convenience, as reported in the methods section, it appears to be somewhat representative of the campus as a whole due to the surveying of an introductory class that is taken by a broad cross-section of students. Thus, there are at least three possible explanations for the higher overall rate of use found in this study. First, it may be that ADHD stimulant use is rising nationwide, as time passes and this phenomenon continues to grow. Or, it may be that use varies on different college campuses, and that the campus studied in the current investigation has higher prevalence rates. In fact, the state in which the current study took place has been ranked one of the top three states in the United States for ADHD diagnosis which may contribute to higher prevalence rates.\textsuperscript{18} Finally, it may be that the relatively high proportion of Greek students in our study contributed to the higher prevalence rates found here.

In addition to basic statistical data on use, user demographics, and motivations for use, the current study also aimed to obtain a richer understanding of illegal stimulant use through qualitative methodologies, an approach that has been neglected in previous research. Through the augmentation of 175 in-depth interviews, it has been discovered, for example, that most users possessed limited knowledge of prescription stimulants, appropriate doses, physiological or psychological side effects, or legal consequences of illicit use. It has also been discovered that first-time use almost exclusively took place during periods of high academic stress. In particular, finals week was reported to produce a context of anxiety and desperation that made students exceptionally vulnerable to the highly publicized promises of stimulants. Additionally, most students reported that procuring illegal stimulants was an easy, unobtrusive act. In interview after interview, we were told not only how stimulants had become part of the campus culture, being openly and positively discussed in public settings, but how, as Robert, an undeclared freshman, confessed, “Anybody really can get it just about anytime they want it. It is easier than beer to get.”
The qualitative data also reveal a general perception among illegal users that non-prescribed ADHD medications enhance cognitive abilities. In fact, the statements of some interviewees almost advertise this prescription drug misuse as a miracle for any student striving for academic success. The current study, however, did not attempt to measure if prescription stimulants actually improved non-ADHD students’ abilities in the classroom. The proliferation of research examining how ADHD medications affect cognitive functioning focuses on individuals diagnosed with ADHD; thus, we know little about how these medications actually work on a physiological level among non-ADHD users. Future research should investigate these claims of enhanced cognitive aptitude in order to better understand and assess such claims.

Perhaps the most disturbing finding that was mined from our qualitative investigation was the general lack of guilt or dissonance expressed by many of these students over taking illegal stimulants. Most viewed its use as not only physically and psychologically harmless, but as morally acceptable since it was used for academic purposes and not for social entertainment. “We’re not getting high off it,” explained Nancy, “we are doing it to do better in school. So no, I don’t feel bad or anything.” The fact that these stimulants are also prescribed pharmaceuticals that can be purchased at any local pharmacy and not street drugs sold by felonious drug dealers has also shown to supply moral solace to many users. In short, the illegal use of ADHD medication seems to be stigma free in the conceptions of the overwhelming majority of our subjects. This finding does not bode well for traditional intervention efforts.

There were a number of limitations of this study that should be taken into account when interpreting the results. As discussed throughout this paper, the quantitative sample was a convenience sample that did exhibit many characteristics of the campus as a whole. However, given that it is a convenience sample, there is no guarantee that it represents the population from which it was drawn. Also mentioned above was the fact that our sample appears to have had more Greek students in it than the campus population as a whole. Moreover, all of the data from this study come from one large public university in the southeast region of the United States. There is evidence that stimulant use varies according to factors such as region of the country and school competitiveness. Thus,
the rates of stimulant use found here may be different than at other universities, and the reasons for use and issues related to access of stimulants may also differ.

**Implications for Interventions/Campaigns**

What can be done to stem the tide of this growing problem of ADHD stimulant use on college campuses? This current research has illuminated at least three possible answers to this question. The first, and perhaps most efficient, answer is to target the student “suppliers” of the stimulants. Given that only a small segment of college students have legal prescriptions for ADHD medications, but apparently supply the entire campus with these stimulants, focusing on this small group may be an efficient intervention strategy. Specifically, we discovered that prescribed users almost never take their ADHD medication every day. Many reported only taking their medication on heavy work days, days when they have classes, or weekdays. Consequently, at the end of each month, most prescribed users have a surplus of stimulants that become the basis for illegal exchanges on campus. The medical community, therefore, may consider limiting the monthly allotment of pills to 20 – except in cases where patients can clearly show the need for daily use.

The need for educating the illegal “consumers” of ADHD stimulants must also be part of any intervention strategy. As our qualitative data highlighted, these individuals have a dearth of salient information regarding the physical and psychological dangers of stimulant use and even less information about the legal ramifications of obtaining a Schedule II controlled substance. Many, in fact, were surprised to discover that it was a crime. Mass communication campaigns across a variety of health behaviors have been successful in improving health knowledge, attitudes, and behaviors. Additionally, campus-wide campaigns might be considered to educate the student population about the health risks and legal penalties associated with illegal stimulant use. The use of existing structures such as freshman-orientation programs, campus-speaker series, and classroom discussions incorporated in appropriate curricula (e.g., chemistry, biology, and psychology classes) could be utilized for educating students about the potential dangers of these prescription drugs.

Finally, colleges and universities may consider reducing the demands placed on students during finals week. As discussed above, an overwhelming majority of illegal
users claimed to have started, and continue to use, during their highly stressful finals week. They reported that the amount of work that is asked from them in such a limited time frame necessitates the use of illegal stimulants. Consequently, extending finals over a two-week period or managing student schedules to guarantee that only one final can be taken per day may help reduce the contextual factors that give rise to illicit stimulant use.

The biggest barrier to prevention efforts, however, may be the professed effectiveness of the drug itself. Nearly every one of our subjects claimed that ADHD medications were highly effective in increasing their attention span, making work more interesting, improving their cognitive abilities, and fighting fatigue. With the multifaceted demands placed on college students (e.g., grades, social life, finance, etc.) and the increasingly competitive work force that awaits them after graduation, these students believe they have found the “magic bullet.” “It works!” explains Lisa, a senior pre-med major. “Why wouldn’t you use it if it works? The stuff is great. Great!” We are left to wonder, therefore, how to persuade students not to take stimulants that are so soundly praised for their effectiveness in a culture that increasingly justifies the means by the ends.
REFERENCES


23. Derzon JH, Lipsey MW. A meta-analysis of the effectiveness of mass-communication for changing substance-use knowledge, attitudes, and behavior. In: Crano
Table 1

Illicit Use of Prescription ADHD Medications in Various Demographic Subgroups

<table>
<thead>
<tr>
<th>Demographic Category</th>
<th>Using</th>
<th></th>
<th>Not Using</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td>585</td>
<td>34%</td>
<td>1,148</td>
<td>66%</td>
</tr>
<tr>
<td><strong>Gender</strong>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>278</td>
<td>39%</td>
<td>430</td>
<td>61%</td>
</tr>
<tr>
<td>Female</td>
<td>266</td>
<td>30%</td>
<td>629</td>
<td>70%</td>
</tr>
<tr>
<td><strong>Race</strong>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>547</td>
<td>35%</td>
<td>1,032</td>
<td>65%</td>
</tr>
<tr>
<td>Other race/ethnicity</td>
<td>34</td>
<td>25%</td>
<td>101</td>
<td>75%</td>
</tr>
<tr>
<td><strong>Year in School</strong>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshman</td>
<td>101</td>
<td>18%</td>
<td>473</td>
<td>82%</td>
</tr>
<tr>
<td>Sophomore</td>
<td>127</td>
<td>31%</td>
<td>288</td>
<td>69%</td>
</tr>
<tr>
<td>Junior</td>
<td>144</td>
<td>49%</td>
<td>150</td>
<td>51%</td>
</tr>
<tr>
<td>Senior</td>
<td>137</td>
<td>55%</td>
<td>112</td>
<td>45%</td>
</tr>
<tr>
<td><strong>Greek Status</strong>*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>228</td>
<td>23%</td>
<td>747</td>
<td>77%</td>
</tr>
<tr>
<td>Yes</td>
<td>357</td>
<td>48%</td>
<td>389</td>
<td>52%</td>
</tr>
</tbody>
</table>

Note: Chi-square is significant at * $p<.05$; ** $p<.01$; *** $p<.001$
Table 2

*Reasons for Illegal Use of Prescription ADHD Medications (N = 585)*

<table>
<thead>
<tr>
<th>Reason for Use</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>To stay awake to study</td>
<td>420</td>
<td>72</td>
</tr>
<tr>
<td>To concentrate on your work</td>
<td>389</td>
<td>66</td>
</tr>
<tr>
<td>To help memorize</td>
<td>213</td>
<td>36</td>
</tr>
<tr>
<td>To stay awake and have fun</td>
<td>127</td>
<td>22</td>
</tr>
<tr>
<td>To make work more interesting</td>
<td>70</td>
<td>12</td>
</tr>
<tr>
<td>For the high (the good feeling)</td>
<td>39</td>
<td>7</td>
</tr>
<tr>
<td>To suppress your appetite</td>
<td>32</td>
<td>5</td>
</tr>
<tr>
<td>To self medicate your ADHD</td>
<td>22</td>
<td>4</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>2</td>
</tr>
</tbody>
</table>

665  670