

# **“You gotta try it!”**

## **A qualitative exploration of the role of communicative interactions in prescription stimulant misuse**

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### **Abstract**

*Grounded in a social cognitive theory, this qualitative study explored the role of social and communicative interactions in facilitating prescription stimulant (PS) misuse among college students. In-depth interviews with thirty-seven students on a college campus who misused PS uncovered three primary themes: interpersonal prompting by trusted friends, strategic negotiation of “hook ups”, and collective use and influence of PS. The study suggests that specific social and communicative interactions among students serve to create and reinforce norms of social acceptability, thereby providing an enabling environment for this dangerous pharmaceutical practice. The discussion elaborates upon the role of social interactions in producing environments which both prescribe and proscribe particular norms for PS misuse.*

**Keywords:** Prescription stimulants, Adderall, Ritalin, Social Cognitive Theory, College, Health, Students

The misuse of prescription stimulants (PS) is a serious problem on college campuses within the United States. The University of Michigan's annual survey placed prevalence at 9% among college students compared to 6.7% in non-college participants (Johnston, O'Malley, Bachman, & Schulenberg, 2013). PS misuse occurs when drugs such as Adderall, Ritalin, and Dexedrine are taken without a prescription or used in a manner not consistent with physician guidance (Lakhan & Kirchgessner, 2012). Students typically misuse PS for academic and recreational purposes (Teter, McCabe, Cranford, Boyd, & Guthrie, 2005). PS misuse is dangerous because it is associated with a high risk of psychological or physical dependence; the National Institute of Drug Abuse (NIDA) classifies PS as a Schedule II controlled substance, along with cocaine, methamphetamine, oxycodone, opium and morphine because of its elevated potential for abuse ("DrugFacts: Stimulant ADHD Medications – Methylphenidate and Amphetamines," 2009). PS are usually prescribed to patients diagnosed with Attention Deficit

Hyperactivity Disorder (ADHD), but can have adverse clinical effects when used incorrectly also leading to cardiovascular complications such as stroke, dysrhythmia, electrocardiograph change, and tachycardia (Westover, Nakonezny, & Haley, 2008).

There is much research that has documented the prevalence of PS misuse on college campuses within the United States as well as motives and characteristics of users (Advokat, Guidry, & Martino, 2008; Ford, 2008; Judson & Langdon, 2009; McCabe, Knight, Teter, & Wechsler, 2005); however, there is limited qualitative research that has explored the role of communication and social interaction in facilitating this pharmaceutical practice. Drawing on social cognitive theory (SCT), the goal of this study is to examine the brief and commonplace verbal and nonverbal interactions that occur in interpersonal, group, and mediated settings that facilitate this risky behavior. The specific research question under investigation is this: *What is the role of communication and social interaction in facilitating PS misuse?* Qualitative methods for data collection and analysis were used to answer the research question. In-depth interviews were conducted with thirty

seven college students who misuse PS and a modified version of grounded theory was employed to analyze the data. Culture is constituted in the day-to-day practices of its members and provides the communicative framework for understanding discourses of health and medicine (Dutta & Basu 2011). Understanding the social and communicative interactions is critical to understanding the culture and norms that govern this unsafe pharmaceutical practice. Identifying the ways in which students communicate about PS misuse can further our understanding of the social patterns that give rise to this behavior, as well as provide researchers insight for the design of health campaigns. College students are an important group to study because they tend to lead changes in drug use patterns that later influence the general population (Johnston, O'Malley, & Bachman, 2000).

#### **PS Misuse of College Campuses in the United States**

Prevalence of PS misuse among college students in the United States varies by region and campus. One of the largest studies, a multisite study surveying 10,904 students across 119 nationally representative four-year U.S. colleges, found that 6.9 percent of American undergraduate students had used PS illicitly in their lifetimes (McCabe et al., 2005). Some studies have found the number of students using PS illicitly to be much higher. For example, a study of 150 undergraduates at a small competitive college found that one-third (35.5%) of the students who were convenience sampled had taken PS illicitly (Low & Gendaszek, 2002). A 2008 study of 1,550 respondents at Louisiana State University found that as many as 43 percent of students had used PS without a prescription (Advokat et al., 2008). A study of 1253 first-year college students aged 17–20 years found that of the 1208 students who did not have a legal prescription, 218 (18.0%) engaged in PS misuse (Arria et al., 2008). Recent research has found that college students in health care fields have a higher susceptibility to PS misuse with a prevalence of 11.3 percent in the academic health sciences (Bossauer et al., 2013) and 12.4 percent in dental college students (McNiel et al., 2011).

The studies show that PS misuse is more likely to occur among college students who are White, have higher rates of substance use and other risky behaviors, and belong to a fraternity or sorority; misuse is also less likely to occur among college students who attend colleges in the North Central region of the U.S. or historically black colleges and

universities (McCabe et al., 2005). Stimulant abusers are more likely to concomitantly use and abuse other drugs, such as alcohol, marijuana and nicotine (Advokat et al., 2008). Suggested predictors of PS misuse among students include: scoring high in the sensation-seeking trait (Low & Gendaszek, 2002); having less concern for ethics, safety, and having a greater perception of social acceptability (Judson & Langdon, 2009); a tendency to lack premeditation and having positive expectancies and evaluations (Lookatch, Dunne, & Katz 2012).

College students misuse PS for academic and non-academic reasons (deSantis, Webb, & Noar, 2008; Quintero, 2009; Teter et al., 2005; Teter, McCabe, LaGrange, Cranford, & Boyd, 2006). Academic motives include to: help with concentration, increase alertness, get good grades, stay awake, stay focused for longer periods of time, increase productivity, and make work more interesting. Many students used PS for the first time when they felt high levels of academic stress, pressure, and anxiety, for instance, when multiple exams fell on one day. While students believed that PS increased their intelligence, students who use PS are not likely to do better academically than those that do not (McCabe et al., 2005). With respect to recreational usage, PS have been used by students to stay awake all night “to party” and because they felt more outgoing and funny when using them (deSantis et al., 2008; Quintero, 2009; Teter et al., 2005; Teter et al., 2006). Adderall's ability to suppress appetite has led to the drug being used as a diet pill by women across college campuses (Bailey, 2009; Daley, 2004). Quintero (2009) found that students used prescription drugs including painkillers for numerous purposes such as experiencing pleasure, managing the duration or intensity of another drug's effects, and for socializing and recreational activities; he concluded that pharmaceuticals are well integrated into the recreational drug use practices of college students.

Broader social and cultural factors play an important role in facilitating PS misuse. Factors such as perceptions of social acceptability and notions of college being a time for experimentation with drugs contribute to misuse of prescription drugs in general (Quintero, Peterson, & Young, 2006). In the specific context of PS, research suggests that PS misuse is a prevalent, normative, and a salient part of college culture (deSantis, Noar, & Webb, 2009; deSantis et al., 2008). In terms of access to PS, students obtain PS in a number of ways, including lying about having symptoms to obtain PS from a physician (McCabe & Boyd, 2005); however, it is most common for students to obtain PS from friends, significant others or classmates who have a prescription for the drugs (deSantis, Anthony, & Cohen, 2013; deSantis et al., 2008).

### **Social Cognitive Theory (SCT) and Communication**

A fundamental assumption of social cognitive theory (SCT) is that learning and subsequent behavior occur within an interactional model of causation also known as triadic reciprocal causation, where the environment, personal factors, and behavior all operate as interacting determinants of each other (Bandura, 1976, 2001). Behavior is not simply the result of the environment, and the environment is not simply the result of the person and behavior, rather human behavior is influenced by the dynamic and reciprocal interaction of the individual with a set of learned experiences, and the physical and social environment. SCT articulates a number of relationships between environment, behavior, and the individual, but for the purpose of this study the role of observational learning in acquiring new behaviors and the role of communication in creating particular social environments are important.

SCT asserts that individuals model their behaviors by observing others; observational learning occurs because individuals observe, retain, and replicate the behavior of others (Bandura, 1976). The decision to exhibit the behavior depends on the outcome, which acts as a positive or negative reinforcement; in general, when individuals observe a particular behavior being punished, they are less likely to change their behavior (Bandura, 1976; Fryling, Johnston, & Hayes, 2011). Thus, it is through observational or vicarious learning that individuals are encouraged or discouraged from reproducing particular behaviors- including forbidden or deviant behaviors.

In addition to direct observation, communication plays an important role in shaping behavior directly or indirectly through normative influences (Rimal & Real, 2003). Communication creates and reinforces social norms or the codes of conduct that prescribe or proscribe behaviors for group members; these norms are not explicitly codified, but understood through social interaction (Lapinski & Rimal, 2005; Rimal & Real, 2003). Lapinski and Rimal (2005) argue that individuals model their behavior based on observing others, formulating perceptions of the norm, but also based on the communicative environment and support for their own actions that is communicated to them in a variety of ways. According to Rogers (2003), interpersonal communication can facilitate or inhibit processes that affect individuals' opinions and their willingness to accept ideas and new behaviors; interaction within a social network encourages or "diffuses" new behaviors or confirms

the decision to adopt a behavior. In short, "norms are constructed, understood, and disseminated among group members through communication" (Rimal & Real, 2003, p. 185) and can create environments that are more conducive for the production of the behavior.

### **Method**

In-depth interviews with 19 male and 18 female students were conducted over two years (2010-2012) at a mid-size public university campus in the upper-Midwest. Interviewees were all between the ages of 18 and 21 and represented various collegiate units. All participants were white, consistent with the disproportionately white (93%) student body. All research protocols were vetted and approved by the university affiliated IRB.

#### *Recruitment*

In-class announcements were made in ten large lecture halls and posters were displayed all across campus in designated posting areas. The criteria for inclusion included: 18 years of age or older, currently enrolled as a student, and current or past PS misuse, defined as "using or having used PS without a legal prescription". In classrooms where announcements were made, flyers were left on a desk in the back to allow students to read more about the study in private. The flyers contained a brief description of the goal of the study, the email ID of the research assistant (RA) who was responsible for scheduling interviews, and the criteria for inclusion. All recruitment materials noted the private and confidential nature of the interviews and the compensation of \$10. The posters had the same information as the flyers in addition to tear offs with the contact information for the RA.

#### *Peer-peer interviews*

A total of eight undergraduate research assistants (RA) conducted the interviews with participants in the study who were also undergraduate students, thereafter referred to as "peer-peer interviews". Previous documented research (see deSantis et al., 2008) as well as our own informal inquiries suggested that students would feel more comfortable talking about PS misuse with peers rather than non-peers especially with regards to drug patterns. Participants filled out a demographic form prior to the interview. Peer interviewers followed a precise script to introduce themselves and the informed consent procedures. The peer interviewers used a semi-structured interview schedule developed in an iterative manner and were free to use probes and follow-ups within the interviews. The schedule comprised of questions related to first time use, motivation for use, sources of knowledge about PS, and interactions with peers. Interviews lasted between 30 and 75 minutes.

#### *Peer interviewer training*

Each undergraduate RA who served as a peer interviewer was certified by the university's IRB and had

completed a basic social scientific research methods course as verified by their college transcript. In addition, peer interviewers received approximately 8-10 hours of training with the principal investigator on conducting in-depth interviews, including studying qualitative methods, role playing, and engaging in discussions about ethics. Peer interviewers were trained on how to use follow ups and prompts. Throughout the data collection process, peer interviewers received supervision and feedback on their performance; recorded interviews were also evaluated by the principle investigator for strengths and weaknesses. Peer interviewers received course credits for their role in the project and were given the opportunity to coauthor papers by making contributions to the data analysis and writing.

#### *Transcription and data analysis*

The interviews were transcribed by a professional transcriptionist hired by the principal investigator. Notably, since the study called for “students who had used PS illicitly”, there were two situations that arose, a participant who had taken PS illicitly at one point in his life, but now had a prescription, and three participants who had taken PS illicitly in the past, but no longer used them. These transcripts were included in the study to enhance the richness and texture of the analysis. All transcripts were analyzed by the principal investigator using a modified version of grounded theory (Charmaz, 2000). In the first step or open coding phase, transcripts were read sentence by sentence to annotate explicit meanings at the descriptive level, for example, “getting PS from friend” and “complaining about school work”. Next, a more focused and analytic coding technique was used where frequently appearing codes were highlighted, flagged for latent meanings, and theoretical relevance (e.g., “Strategic disclosures”). Finally, to represent the data in a coherent manner, multiple codes were aggregated or clustered into broader themes; for example, the codes “getting PS from friend” and “complaining about school work” were integrated into the theme “interpersonal prompt by trustworthy friends”. Memos were written by the principal investigator at every stage of the research to establish preliminary relationships between codes and clarify ideas. Throughout the findings section, attempts have been made to provide sufficient evidence (examples and excerpts from interviews) to allow the reader to judge the credibility and trustworthiness of the analysis. To allow for readability, participant quotes were edited to remove linguistic hesitation phenomena and correct for grammar, syntax, and clarity where necessary.

#### **Findings**

There were three findings centered on communicative interactions that emerged from the data: interpersonal prompting by trusted friends, negotiating a “hook up”, and collective use and influence of PS.

##### *Interpersonal prompting by trusted friends*

Interpersonal prompting by trusted friends spurred first time use for many participants. Participants typically did not seek out PS, but were encouraged by well-intentioned friends to use them. In a typical scenario, the individual would disclose to the friend that they were stressed out because of academic pressure to which the friend would recommend using Adderall and even offer up some of their own pills. One participant noted how she was complaining to her friends about a big test she had the next day, to which the friend responded “Here, why don’t you try this?” Another participant described that she was in a panic mode about the multitude of exams that were coming up in the next week and was instantly offered PS as a remedy:

*I had three big tests that week and I was just kind of freaking out. I was talking to somebody about it and they told me I should just take Adderall as it helped them a lot, so they gave me a connection and I just took some.*

One participant was simply noting to his friend that he was tired to which his friend fired back “*Oh, just take this and it will help you feel better.*” His friend had a prescription for PS, so the participant accepted the offer saying “*Okay, I guess.*”

It is important to point out that even though the study queried college students about their PS misuse patterns, many had started misusing PS in high school. They told several stories about how and when they used PS for the first time, typically in high school, which followed a similar pattern of offers made by well-intentioned friends. One participant said: “*I was a junior in high school and once I had a whole bunch of papers and a kid I knew said to me, “hey we got some Adderall, do you want one? Take this before you write your paper.”*” Another participant recalled a friend saying to him in high school, “*Hey, Travis if you ever need a Ritalin or something, you know, if you’re really freaking out go ahead and grab one!*” A third participant stated that he no longer used PS, but his first experience was in high school where one of his friends with a prescription invited him to try it saying “*...it will make you zone out and study for like four hours. You gotta try it!*”

Importantly, when participants were asked during the course of the interview if they too would recommend the drug to others, they admitted that they would if their friends “really needed it”. One participant said “*Yeah. If they are bogged down with homework or if they needed to get some reading done, I’d say, here dude take this, of course if I could spare it.*” Participants perceived the behavior to be a kind gesture and even a token of generosity. Using PS for

academic purposes was even encouraged in their social networks as seen in the following quote:

*I know if I was to say "yeah I think I'm going to take Adderall and get a bunch of homework done tomorrow" my [fraternity] house wouldn't be like, "F\* you're taking Adderall?" They'd be more like "good dude, you probably need to do that".*

As seen above, friends and peers act as important socializing agents for each other; they teach each other when, how, and under what circumstances the misuse of PS is appropriate. Participants were offered PS when they were tired and needed to complete academic tasks and most participants were willing to do the same for others in similar circumstances.

A question that arises from this particular pattern is this: why are participants willing to put a dangerous chemical drug into their bodies without doing any prior research about risks? The analysis suggests that with respect to first time use in particular, academic pressure combined with the fact that the supplier was a friend provided the green light for the behavior. Since the supplier was a friend, participants trusted the individual and were easily able to sidestep the risks of misusing PS, thereby underscoring the role of the social environment in enabling the practice.

In addition, trust was enhanced because participants did not feel pressure to use PS. Many participants emphasized the point that the friends who offered the drugs were not forceful in their communication. They exclaimed: *"I mean it wasn't like the dare thing, like "take it chicken", none of that happened, no one was pushing it on me, it was like "if you think you need it, here."* Another participant clarified the difference between what she conceptualized as peer pressure and what was going on with the case of PS:

*Interviewee: I don't know, my friends just had it and I hadn't done it before and they were like, "do you want to try this?" and I was like, "Sure, why not?"*

*Interviewer: So do you think they influenced your actions?*

*Interviewee: I mean they weren't like, "You need to do this." But they were just like, "Hey, we have this, we are going to do this, and do you want to do it?" And I was like, "Sure"*

Participants were also able to avoid thinking about the risks of misusing PS because they did not associate their friends with street dealers as seen in this quote:

*No. I didn't think my buddy would hand me*

*something that I'm gonna be sitting there tweaking out in class like acid or anything. No I trusted him, he handed it to me and said take it and I was like sure.*

The fact that pills were being distributed in the day, in classrooms, offices, libraries, hallways, and in other places where they lived and worked and by friends enhanced the social acceptability of the drugs as seen here:

*Yeah, we didn't meet in a back alley or some shady place, it was in the office, not that it makes it better, but it wasn't this mysterious drug deal going on in someone's basement. I kind of trusted her judgment.*

PS were thus deemed acceptable because they were used not in isolation or in the back alleys, but used and exchanged in the company of friends and peers.

Finally, the fact that PS were being misused for academic purposes and not for "antisocial" activities provided another justification for use. PS misuse was seen as categorically different from street drugs, which they believed were used in a nonproductive manner by "addicts" and other out of control social miscreants as seen in the following excerpt:

*I think when people think of cocaine they think of the dude who works down his fingers to nubs because he thought the floor had treasure underneath it. They think of that crazy dude. But with Adderall they think of someone that did a lot of homework one night. It doesn't have that negative connotation.*

Thus, participants set up a crucial distinction between street drugs and PS averring that PS were not used to feed an addiction, but to achieve academic goals.

In sum, a stressful academic situation combined with a direct verbal prompt by a trusted friend created ripe conditions for students to misuse PS. According to Rogers (2003), interpersonal communication plays an important role in diffusing new behaviors within a network by facilitating or inhibiting individuals willingness to accept ideas and new behaviors; this was certainly the case of PS misuse among college students within this study. Peers played an important role in socializing each other into misusing PS and for many the process started in high school. Participants did not dwell on the risks of using PS because they trusted their friends and perceived PS misuse to be normative within their networks, in particular when used for academic purposes.

*Strategic negotiation of "hook ups"*

Participants asserted that being on a college campus made it extremely easy for them to access PS. Most participants said that they knew "someone" in their close and/or extended college networks with legal prescriptions. Requests were typically forwarded through their social networks as described by one participant referring to PS as "speed":

*Well, I'll walk you through it. I was sitting at my*



*computer checking my email and I got this assignment and I was bitchin' about it. I was not happy so I made a joke that I need speed for this. My roommate came in and I said 'hey do you know anyone who could hook me up with some speed'. "Yeah I think I could get you some" this was 10:30 and by 10:45 I had speed. That's definitely one of the advantages, sure you live with one other person but technically you live with 2000.*

As seen above, access to PS was both easy and expedient. Being on a college campus meant that even if you did not personally know someone with a prescription, someone else in your networks did. A similar pattern was described by another participant:

*Well me and my roommate were going to a concert and she was like, "Oh, I want to get Adderall." And I was like, "Oh yeah that would be sweet. Do you know anyone who can get it?" She said, "I don't know, I'll see." And then she texted me a few days later, "Oh, I found someone who has it. Do you want me to get you some?" And I was like, "Yeah."*

Requests for PS were made in person, via phone calls, texting, and in some instances mass texting. Communication technologies in many instances allowed for the rapid exchange of information. For instance, one participant explained that his usual method of obtaining PS was to text "I have an exam, can I have an Adderall, hook me up?" Most participants said that they themselves did not send mass texts, but that they have indeed received mass text messages saying "Who wants Addy?" or "Who has Addy?" One participant showing off during the interview claimed that he could make a phone call at that very moment and have Adderall in ten minutes or less.

The casual manner in which requests for PS were described by participants suggests that they had little concern about the social risks involved; however, further scrutiny revealed that participants were not indiscriminate in their requests, but rather strategized about who to ask and how to ask. Most participants said they would only make requests of people they had personal connections with, such as friends, roommates, and friends of friends. One participant discussed how she felt more comfortable asking for Adderall if she knew the person she was getting it from. "Over the summer I knew people who would take Adderall, but I wasn't close to them so I didn't want to ask them. I would go to my friends and ask them and get it through someone else." Another participant explained that he would ask his friends, but he would never make a request to other people,

unless it came up in conversation:

*I'm not going to go up to them and initiate the conversation, but if they say "yeah I'm on Adderall", then I'll say would you consider selling them to me. So if they bring it up first, certainly I'll ask.*

The importance of knowing who they were getting their drugs from was reinforced by the fact that students who were new to campus or lived off campus had difficulties accessing PS. One participant explained that now that he lives on his own, it is a bit more difficult to access PS as seen here:

*It was very difficult for me simply because as I mentioned before I have friends, but I don't have a wide network and certainly not a wide network in which I would feel comfortable enough to ask if somebody had Adderall. So right now I have one supplier who lives two and a half hours away. That makes it very difficult to procure.*

Another participant clarified that he did not get his pills from "some guy", but rather from a friend or roommate or someone his friends know personally. He explained that he exhibited the same care with PS as he did with accessing marijuana.

*It's the same thing with pot- I don't buy pot from 'some guy'. It's my roommate or the guy my roommate introduced me to, who I know is a good guy. I hang out with these people. If I can hang out with my drug dealer (laughing) -and I hate saying that- but if I can hang out with my drug dealer when I'm not under the influence of any kind of drug, even if it is pot, then I feel I'm ok. But if it's someone I can only get drugs from, then I think that is on a crack head level and dangerous*

This is a particularly telling instance because the participant distinguishes his behavior from the use of street drugs based primarily on his close friendship with his supplier. He believes that the fact that the individual is a friend means that he has not crossed the line between what is socially acceptable and unacceptable.

This norm for social acceptability was seen in other instance through the discourse. For instance, participants averred that using PS was not cost-prohibitive in itself, but that there were social costs involved with accessing PS. Participants received the pills for free, paid anywhere between \$5-15 per pill, or exchanged pills for items or services (e.g., giving rides). However, participants were indeed careful about how *often* they made requests, as this had repercussions on interpersonal relationships. One participant discussed the time her roommate got irritable when she asked for PS, "The first time it was, "yah sure, like here." *But a few more times after, she rolled her eyes, but she'd still give it to me.*" Another participant referred to the unspoken rule: "do not make a habit of asking for pills from the same person and never ask for too

*much*". The blurred boundaries between friendship and a dealer-client relationship were also brought up by other participants. One participant explained that asking her friend for PS had made her start to view him as a supplier. She noted that this was the primary reason she was friends with the particular individual and found it somewhat problematic. She said "...I would want to stay friends with him partially for that reason but we're also like really close, I guess". Another participant used to pay a friend for PS, but one day his friend told him that he was upset because their relationship had turned into a friendship "based on drugs". This articulation validates the earlier claim made another participant that a deeper friendship with the supplier was necessary in order to maintain a semblance of social acceptability and remain within the bounds of what was normative.

Participants also seemed to suggest that they did not hide nor did they need to hide their PS misuse from their social networks because the practice was rampant and socially acceptable; however, the analysis revealed that they were indeed cautious and strategic about who they told about their PS misuse and who they used PS with. For the most part, participants only disclosed their pharmaceutical practices to friends and peers who they knew supported the practice and in fact it was fairly common to avoid disclosing PS misuse even to close friends as noted by one participant: "I will tell some friends, not all of them. Most of my friends are okay with that kind of stuff, but I have maybe one friend who I probably wouldn't tell because she wouldn't approve." Another participant explained:

*I'll tell the ones that I've been friends with for a while or who I've done it with before, but up here, like I said, a lot of my friends would never do something like that, so I don't even bring it up. The people I do tell, usually I've done it with them before.*

A third participant noted that she did not advertise her use of PS, but would disclose the behavior if asked. "I've told people. It wasn't like, 'Hey, like I used to do Adderall or whatever.' But, if someone has asked I've told them."

In short, while it was extremely easy to request and gain access to PS, participants typically did not ask for PS from people outside of their close social networks and even within the network, they were aware that asking for PS too often broke a norm and had the potential to damage interpersonal relationships. They displayed caution about who they told about their PS misuse and who they used PS with, such that it was quite possible for friends or even close friends to not know that the participant engaged

in PS misuse.

*The collective misuse and influence of PS*

The data reveal many instances where participants used PS while interacting with each other in small group contexts; in these settings PS were used to achieve academic or recreational goals. For example, one participant described how she and a good friend studied for math tests together.

*...we would take Adderall at night at 10:00 and then we would just stay up all night and go through every single chapter that was on our test the next morning. We had class at 9:00, so we would stay up all night till 9:00 and then go take our test and that was when I first started.*

She continued: "We usually did it in the study lounge. We just went out in the hallway and took the pill and took a drink from the water fountain and then went back in the study lounge and started studying." Another participant recalled a time when she and her friends used it for recreational purposes. They had been drinking all day and by the time they arrived at a party later that night they were so tired that they all went upstairs to a more private room and took Adderall to revive themselves. According to this participant, the Adderall worked for all five of them because they were physically able to stay up later that night.

These situations are important to illuminate because it is within group settings that norms are created, understood, and reinforced. By participating in PS misuse within group settings, the norm of social acceptability is reinforced. In each of these instances, participants are learning from each other how and in what situations the misuse of PS is socially acceptable.

PS were also used in group contexts for the specific purpose of making social interactions more enjoyable and because it felt more "normal" that way. One participant stated "...we were hanging out and we'd get high, we'd take it together with a group of friends and have great discussions". Another participant described the effect in the following manner:

*The studying aspect was really nice but it also made me really energetic and talkative. I don't know I liked it.*

Still another participant noted that it had a positive effect on his personality as seen in the following excerpt:

*There's a definite part of me that loves speed, for the mere fact that it brings out my personality when I'm down. Instead of being tired and taking a nap, I was great that whole day. It affected me in the way that I had a positive outlook and it made talking easier and brought my personality out...*

In the last two examples, participants felt that using PS enabled them to communicate and interact more meaningfully with their friends by bringing out the best in

them. Several participants felt using PS in group contexts was important because it felt more “normal” that way. Using PS alone made it seem like they had dependency issues or that they were social deviants, but using it with others made it seem more acceptable, as seen in the quote below:

*I've never done it alone. It's kind of one of those things like when someone's drinking. You don't want to drink alone; you seem like an alcoholic. You don't want to do other stuff alone because it's fun to have someone with you.*

In short, PS were used in a group setting for a variety of reasons including for studying and enhancing social interactions, and in each instance the norms for social acceptability were reinforced.

The analysis revealed that the group setting did indeed exert an influence on participants' behavior. On the one hand, participants rejected the assertion that peer pressure motivated them to use PS as seen earlier, but a closer examination of the data revealed that the group setting wielded a direct and indirect influence on their practices. For instance, participants often used PS in group contexts simply because others in the group were taking them. One participant noted that the first time she misused Adderall she was at her friend's house studying with a group of four people. When she arrived at the house, the other students had already taken Adderall, so she too took it and began studying with them. Another participant recounted an instance in high school where he used Adderall to party:

*Twelfth grade graduation party- there's a good example. The whole 700 kids that graduated had a party in the school. A lot of kids took ecstasy and stuff and I just took Adderall to kind of keep up with them I guess.*

Some participants noted that they started misusing PS not because of comments made directly to them, but because they heard “rumors” about the positive effects of PS bandied about in their social environments, as seen in the following excerpt:

*The only reason was that I was tired and I just wanted to try it. I heard from other people “Oh, this kid took a Ritalin or Adderall drug, and he had to get this paper done and he wrote like 8 pages in an hour.”*

Another participant affirmed that positive recommendations for PS were indeed common in his social environment:

*Well I had heard about people talking about using it. I mean I had never tried it in high school or anything, but people said it was awesome and they could concentrate so much better on their homework and any other work. I kind of had that in*

*the back of my mind when I was running out of time to get my work done, so I started asking around and found a guy who had some.*

In sum, participants used PS in groups settings for a variety of personal and social reasons. They were directly influenced to use PS by the actions and communication patterns of their peer groups, as well as indirectly influenced to use PS through the realm of the social environment and positive support communicated for this particular pharmaceutical practice.

### Discussion

This study explored the social and communicative interactions associated with PS misuse among college students; there were three themes relevant to the role of communication: interpersonal prompting by trusted friends, strategic negotiation of “hook ups”, and collective use and influence of PS. Extant literature has found the high prevalence of PS misuse on college campuses to be related to perceptions of college life being a time of experimentation, where using drugs and prescription drugs are seen as socially acceptable (Quintero et al., 2006). This study asserts that particular patterns of social and communicative interactions within the college context play an important role in the production of that particular social context and behaviors, such as PS misuse, within it. Social interactions are constitutive of culture and play an important role in shaping university culture. Drawing on social cognitive theory (Bandura, 1976, 2001), this discussion examines the interplay between the individual, social environment, and behavior with respect to PS misuse and the role of social and communicative interactions in facilitating this particular practice.

The findings from this study suggest that communication patterns promote, sustain, and reinforce PS misuse. Lapinski and Rimal (2005) argue that individuals model their behavior based on the communicative environment and support for their own actions communicated to them in a variety of ways. In this study, support for the particular act of misusing PS was communicated to participants on several different occasions. With first time use, a communicative prompt played an important role in encouraging participants to misuse PS. Participants were persuaded by trusted friends who encouraged them to “try it out”. Persuasive utterances highlighting the effectiveness of the drug were made such as “you gotta try it, you gotta try it!” The interaction occurred in a social, even prosocial manner such that recommending PS was viewed as a voluntary empathic behavior intended to benefit the recipient, not harm them. An air of friendly informality governed the interaction as seen in the casual manner PS were offered “go ahead and grab one” or “just take one”. Participants took PS in group settings for recreational or academic purposes, which



reinforced the social acceptability of the particular practice; after all it couldn't be so bad if groups were doing it together. These patterns of interpersonal communication among students grounded in trust, friendship, and perceived benevolence played an important role in communicating support for PS misuse. Participants learn through these interactions that misusing PS in particular circumstances and to achieve particular outcomes was indeed legitimate and valid.

This study reveals that not only did particular patterns of interaction communicate direct support for the misuse of PS, but there was the simultaneous absence of discourse about the risks or negative outcomes of PS misuse. In this social environment, the primary messages participants received from their social environment were centered on the benefits of PS misuse; in terms of social cognitive theory, participants were not exposed to "punishments" associated with the activity. Positive communicative interactions in interpersonal and group settings promoted the benefits of using PS noting in particular how effective they were in "getting stuff done". However, while messages about the benefits of PS were bandied across the social network, noticeably absent from the discourse were messages about the health, legal, or social risks associated with the behavior. There were no warnings or cautionary notes provided alongside the positive messages. There was no talk of the negative physiological effects as such participants did not experience any dissonance in misusing PS. It is possible to suspect that continuous exposure to these positive messages in the social environment serves to strengthen the notion of PS misuse as a low-risk and high-reward behavior thereby reinforcing the norm of social acceptability. In short, this study suggests that PS misuse garners social acceptability because of the positive nature of the communication messages that engulf social interactions among students and the simultaneous absence of negative communication about PS within these social networks.

Consistent with previous literature (deSantis et al., 2008; Quintero et al., 2006), participants ascertained that misusing PS was a socially acceptable practice; however, this study revealed that despite this perception, there were in fact strict limits and boundaries regarding what was socially acceptable. Communication creates and reinforces social norms, which prescribe and proscribe parameters for what is acceptable behavior for the group (Lapinski & Rimal, 2005; Rimal & Real, 2003). Participants in the study had to strike a delicate balance so as to stay within the norms of what was

deemed socially acceptable. On the one hand, PS misuse was deemed socially acceptable because it was rampant on college campus, but on the other hand, PS misuse was deemed socially acceptable only if its use and function was distinguishable from the use of street drugs- or at least stereotypes participants held about users of street drugs. While the "rules of conduct" were not formally coded anywhere, they learned through the process of socialization when the lines were crossed. For instance, using it with other people and in groups was important because it lent normalcy to the practice as opposed to using it alone, which was associated with drugs considered more deviant. Participants also exhibited care in how they asked for drugs, whom they asked, and how often they asked for PS for fear of seeming out of control.

The social codes surrounding the practice of PS misuse were highlighted within the interview setting as well. Participants walked a tight rope during the interview; they struggled discursively to present their actions as "normal" or at least fitting within the boundaries of what was deemed normal. For instance, participants drew a distinction between their own behaviors misusing PS and the use of street drugs in an attempt to show that they were not addicts. It was important to their sense of identity that they were not forced to use the drugs because of peer pressure as this showed them to be in control of their actions. Each of these instances provides an indication that while the use of PS may be acceptable in the college environment; this is true only so long as use remained within particular parameters of acceptability, where individuals did not show signs of physiological dependency.

This study has some recommendations for practitioners and researchers involved in the design of communication prevention campaigns. For instance, campaigns targeting students who misuse PS should create messages that highlight the severity of the legal and health risks associated with misusing PS. This is important since the only source of information for students are their peers, who while they promote the benefits, do not disclose the risks and consequences of misusing PS to their friends. In addition, campaigns should also target students with valid prescriptions who distribute PS. Messages should focus on the dangers of distributing their drugs- that in trying to help their friends, they may actually hurt them. Messages should inform these students about the health risks associated with abusing PS, as well as instructions for how to safely dispose of unutilized medication.

The study has limitations that are common to most qualitative evaluations. First, while the study provides "thick description" about a small group of individuals, the findings cannot be generalized to the larger population as they are specific to this particular site and context. The uniqueness of the study in terms the particular sample of students who responded to the call for interviews and the study context

may also mean that findings may not be replicated reliably. Finally, while the study is able to parse through patterns in the data and offer possible explanations, it is unable to show direction of effects. So, while the study comments on the interplay between the social environment and behavior, it cannot speak to the direction of effects among these factors or the extent to which each of these factors influence each other.

To conclude, this study has offered a glimpse of the social and communicative interactions associated with PS misuse on a college campus. The study identifies the various ways in which communication patterns serve to influence norms of social acceptability as well as create social environments conducive for PS misuse. Cultures, including those subcultures found of college campuses, are not static, but shifting; cultures are kept alive through everyday social and communicative practices, processes, patterns, and interactions. In this study, messages promoting the benefits of misusing PS were promoted vigorously within student networks, although the consequences remained hidden; students acquiesced to each other's recommendations and requests, and played a key role in influencing each other, directly and indirectly, one-on-one and in group settings. These patterns may play a key role legitimizing the production of the behavior. Importantly however, not all behaviors were acceptable; rather there were informal norms and rules of conduct that prescribed and proscribed the appropriate use and exchange of PS drugs, which students learned through the informal socialization process.

The practice of misusing PS provides a rich site of study for researchers interested in social interaction, social norms, and social networks research in a health related context. Future scholarship should seek to clarify the manner in which students evaluate perceived benefits and consequences of using PS. While a lot is known about the perceived benefits of using PS, not much is known about the particular, yet hidden, calculus students use to weigh benefits against the risks and consequences, be it social, health, or legal. For instance, this study shows that participants reveal a strong desire for their own actions to be seen as normal, but what are the experiences, sources of knowledge, and deeper socio-cultural processes that allow students to associate PS with fewer physical, legal, and social risks than street drugs? Answers to these questions may be contingent on how meanings of risk, normalcy, and addiction are constructed by students in a college environment. Another important arena of study would be the role of social networking sites and communication technologies in enabling such drug related interactions and exerting normative influence. This study found that cell phones, smart phones, and social networking sites allowed students to maintain active contacts with their expanded networks on campus. They initiate requests for PS, arrange and negotiate access to PS, and provide feedback and reviews about their positive experiences interpersonally, as well as via communication technologies. So, how do these technologies, notorious for "miscommunication" influence norms and practices in a college context with respect to illicit behaviors? These studies will serve to enhance the findings of this study that suggest that communication patterns promote, sustain, and reinforce PS misuse.

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