

“I’ve Thought About This, Trust Me”: Understanding the Values and Assumptions Underlying Prescription Stimulant Misuse Among College Students

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Grounded in a social constructionist perspective of biomedicine, this qualitative study explored the meanings and practices associated with prescription stimulant (PS) misuse among college students. In-depth interviews uncovered four primary themes: using and manipulating PS for increased productivity, basic knowledge about PS and risks, learning about the effects of PS through experimentation, and locating resistance and addiction within the realm of individual control. The study provides one instance of how biomedical technologies are appropriated by lay people in the absence of medical supervision to achieve nonmedical goals. The study also reveals the declining authority of the medical provider and the increased role of biomedicine in everyday life. The discussion elaborates on the modernist assumptions of individualism and control embedded in the biomedical model of medicine that provide the ideological framework for this potentially dangerous pharmaceutical practice.

Keywords: prescription stimulants, prescription drugs, biomedicine, modern medicine, culture

The misuse of prescription stimulants is a serious issue on college campuses in the United States because of its high prevalence and associated health risks. PS misuse occurs when drugs such as Adderall, Ritalin, and Dexedrine are taken without the supervision of a physician or a legal prescription (Lakhan & Kirchgessner, 2012). The University of Michigan’s annual survey placed the absolute prevalence of PS misuse at 9% among college students, compared to 6.7% in non-college respondents (Johnston, O’Malley, Bachman, & Schulenberg, 2013). According to the National Institute of Drug Abuse (NIDA), PS are prescribed to patients diagnosed with attention deficit hyperactivity disorder (ADHD) to improve symptoms of low attention span, hyperactivity, and the inability to focus (“DrugFacts: Stimulant ADHD

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Medications -- Methylphenidate and Amphetamines," 2009). NIDA classifies prescription stimulants as Schedule II controlled substances, along with cocaine, methamphetamine, and oxycodone because of the high potential for abuse and psychological or physical dependence; at high doses, PS misuse can lead to cardiovascular complications, psychotic episodes, and suicide.

There is much concern in contemporary American society about the widening influence of biomedicine in the lives of lay people (Conrad & Schneider, 1980). The biomedical model of medicine, also referred to as biomedicine, modern medicine, allopathic or orthodox medicine, is most closely associated with modernist assumptions of science and is defined by rational scientific stringency, Cartesian dualism, and germ theory (Lock & Gordon, 1988). Within this epistemological framework, science is seen as the best or most accurate way to know the world, and disease is considered a natural consequence of disease-producing agents, which can be controlled through scientific technologies. There is concern today that as a culture we use far too many pharmaceutical products to treat problems beyond the scope of the medical arena, a concern captured in the phrase "medicalization" (Conrad & Schneider, 1992). There is also concern that biomedicine has become the dominant or standard model for understanding the body, health, disease, and treatment (Foucault, 1963; Lupton, 2003). Within this hegemonic framework, alternative ways of knowing are undermined and discarded as primitive or unscientific because of their limited access to positions of power in the global order (Dutta, 2008).

The phenomenon of PS misuse among college students provides a useful platform for exploring the widening influence of biomedicine in the lives of lay people. College students are an important group to study because they are at the leading edge of changes in drug use patterns that later influence the general population (Johnston, O'Malley, & Bachman, 2000). The particular research question under investigation is this:

RQ: How are the values, assumptions, and beliefs embedded in the biomedical model of medicine negotiated in the practice of PS misuse?

In-depth interviews were conducted with 37 college students who misuse prescription stimulants and the data were analyzed using a modified grounded theory process. This study makes a contribution to the fields of health communication, medical anthropology, and social and behavioral pharmacy by advancing our understanding of the ideological frameworks that influence PS misuse. In particular, this study responds to the calls of communication scholars to question the hegemony of the biomedical model (e.g., Dutta & Basu, 2011) by presenting one instance of how biomedical discourses dominate the inter-subjective world of everyday life even for nonmedical problems. Culture is constituted in the communicative frameworks and day-to-day practices of its members, thus documenting the ways in which students understand and practice PS misuse will provide unique insight into social constructions of the body, health, illness, and treatment. Furthermore, given that communication is a morally and politically significant practice, as theorized by Craig and Tracy (1995), this study contributes to praxis by addressing the interpretative and moral dimensions of communication as constituted within the practice of PS misuse.

Prescription Stimulant Misuse on College Campuses in the United States

The prevalence of prescription stimulant misuse is high across college campuses in the United States. A survey of 119 nationally representative four-year U.S. colleges found that 6.9% of undergraduate students had misused PS in their lifetimes (McCabe, Knight, Teter, & Wechsler, 2005). A study at a small competitive college found that more than one-third (35.5%) of students polled had misused PS (Low & Gendaszek, 2002), while another found that as many as 43% had done so (Advokat, Guidry, & Martino, 2008). College students in healthcare fields have a higher susceptibility to PS misuse, with a prevalence of 11.3% in the academic health sciences (Bossauer et al., 2013) and 12.4% in dental college students (McNiel et al., 2011). PS misuse tends to be higher among students who are white, those who also engage in supplemental drug behaviors such as binge drinking and using marijuana, ecstasy, or cocaine, and those who belong to a fraternity or sorority (Advokat et al., 2008; McCabe et al., 2005).

College students report misusing PS for academic and recreational purposes. Academic motives include increasing concentration, comprehension, motivation, reducing fatigue, and staying focused for longer periods (e.g., Arria et al., 2008). Students are typically unaware of the health risks associated with the drugs, underestimate the dangers of PS because they are prescribed by physicians, and minimize the severity of risks (deSantis & Hane, 2010). Prescription stimulants are also used to experience pleasure, to party, and to enhance socio-recreational activities (e.g., Quintero, Peterson, & Young, 2006). In fact, research suggests that the particular subculture of being in college, with its expectations for experimentation with identity and lifestyle and easy access to pharmaceutical drugs, facilitates drug misuse (Quintero, 2009). DeSantis, Webb, & Noar (2008) also found that stimulant use was a "salient part of university culture" and a morally acceptable practice because it was associated with academic performance.

Biomedicine: A Social and Cultural Enterprise

The biomedical model of medicine is most closely associated with the scientific revolution of the European Enlightenment; scholars note that within this modernist framework, biomedicine is seen as objective, universal, and beyond the realm of superstition, moral interpretations, values, and spiritual beliefs compared to other more traditional systems of medicine (Airhihenbuwa, 1995; Dutta, 2008). There is growing recognition, however, that even biomedical discourses operate against and through a background of shared cultural values and understandings (Lock & Gordon, 1988). The idea is grounded in social constructionism, which posits that reality is constructed through human action and does not exist apart from it (Berger & Luckmann, 1966). For instance, more than half a century ago, Parsons (1951) observed that just as we are conditioned to play certain roles in society, acting like a patient depends on a variety of personal and cultural factors, including a willingness to adopt the "sick role." Engel (1977) later theorized the need for a "biopsychosocial model of medicine" to explain why some people experienced conditions as illnesses, while others simply regarded them as problems of living. More recently, health communication scholars have found that the act of diagnosis and naming a problem has enormous implications for interpreting "what is real" and shaping the illness identities of patients (Harter, Japp, & Beck, 2005).

While it is true that culture is never static and cultural values cannot be generalized to all people within the culture (Dutta & Basu, 2011), research has consistently shown some values to be more significant in Western settings than in others. Biomedicine in the Western world has been associated with the values of individualism, control, and self-determination (Airhihenbuwa, 1995; Lupton, 2003), while the values of balance, harmony, social connectedness, and suffering are more commonly associated with an Eastern view of health and healing (e.g., Dutta, 2008). Gordon (1988) notes that individualism—a complex set of assumptions and values that asserts the primacy of the individual—is central to the fabric of Western society. She writes:

Naturalism and particularly biomedicine sustain the viability of the ideal modern identity: independent of society and culture, owner of his or her own symptoms, increasingly able now to detach from self and body to observe, cultivate and even contractually join the physician in rationally treating his or her own case. In general, medicine offers a strong sense that humans can overcome nature, no longer a victim, but in the omnipotent driver's seat (Gordon, 1988, p. 41).

In a similar vein, Baer et al. (2004) argue that in the United States biomedicine reflects broader cultural beliefs of self-reliance, individualism, and empiricism communicated to patients in a variety of ways, such as individual decision making.

Consistent with the modernist value of mastery over body and nature, research suggests that biomedicine, especially in the U.S., tends to rely primarily on the application of science and technology to manage risk (Payer, 1988). Media and rhetorical studies of health coverage have frequently documented the ubiquitous use of the war metaphor, where biomedicine is used to “fight” disease and the “body-as-machine” metaphor, where “faulty” parts of the body are replaced and resolved with quick fixes such as pharmaceutical products (Clarke & Binns, 2006). In clinical practice, research on childbirth has illuminated the hegemony of the medical model of childbirth, also referred to as the “American way of birth,” which conceives of the body in mechanistic terms and uses diagnostic tools and invasive procedures to manage childbirth (Davis-Floyd & Sargent, 1997).

In conclusion, the literature of prescription stimulant misuse among college students documents who misuses PS and the motivations for misuse; however, the assumptions and values that provide the ideological framework for this practice remain under-researched. Drawing on the social constructionist framework, which argues that biomedical knowledge and practice evolve through a number of social choices rather than natural inevitability, this study investigates how modernist values of individualism and control are negotiated in the practice of PS misuse.

Method

In-depth interviews were conducted over two years (2010-2012) with 19 male and 18 female students at a midsize public university campus in the upper Midwest. Interviewees were 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 approved by the university-affiliated IRB.

Recruitment

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

Peer-Peer Interviews

A total of eight undergraduate research assistants conducted the interviews with participants who were also undergraduate students, hereafter referred to as "peer-peer interviews." Previous research (e.g., deSantis et al., 2008) as well as our own informal inquiries suggested that students would feel more comfortable talking with peers. Participants filled out a demographic form and peer interviewers followed a precise script to introduce themselves and outline consent procedures. The peer interviewers used a semi-structured interview schedule developed in an iterative manner allowing for probes and follow-ups. Questions were related to first-time use, motivation for use, and method of drug use. Interviews lasted from 30 to 75 minutes.

Peer Interviewer Training

Each 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 8–10 hours of training with the principal investigator on qualitative in-depth interviewing, which included studying articles on qualitative methods, role playing, and discussion of research ethics. Peer interviewers were trained on how to use follow-ups and prompts; they hypothesized conflict scenarios and modeled appropriate responses. Peer interviewers received supervision and feedback on their performance; recorded interviews were evaluated for strengths and weaknesses, and meetings were held throughout the data collection process to discuss issues and concerns. Peer interviewers received course credits for their role in the project and were given the opportunity to co-author papers for publication by making meaningful contributions to the data analysis and writing.

Transcription and Data Analysis

The interviews were transcribed by a professional transcriptionist. The study called for "students who had used prescription stimulants illicitly." As such, there were two situations that arose: One

participant had taken PS illicitly at one point in his life, but now had a prescription, and three participants had taken PS illicitly in the past, but no longer used them. These transcripts were included to add richness to the analysis. All transcripts were analyzed by the principal investigator using a modified version of grounded theory (Charmaz, 2000). In the first step, transcripts were read sentence by sentence to annotate explicit meanings by making codes such as "snorting PS." Next, a more focused and analytic coding technique was used to flag codes for latent meanings and theoretical relevance (e.g., "addictive personality"). Finally, multiple codes were aggregated into broader themes representing a common set of ideas; for example, the codes "taking PS in the morning" and "snorting PS" were integrated into the theme "strategic use of PS to maximize productivity." 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 from the data to allow the reader to judge the credibility and trustworthiness of the analysis. Participant quotes were edited to remove linguistic hesitation phenomena and correct for grammar, syntax, and clarity where necessary.

Findings

The analysis identified four primary themes: using and manipulating prescription stimulants to maximize productivity, basic knowledge about PS and risks, learning about PS through experience and personal experimentation, and locating addiction within the realm of individual control.

Using and Manipulating PS to Maximize Productivity

The usefulness and functionality of PS provided the ideological and moral framework for participants to interpret their behaviors. The positive effects the drugs had on "getting stuff done" and completing tasks in a timely manner loomed large in the data. PS were associated with accomplishing productive tasks in contrast to street drugs used to "simply get high." One participant noted: "Adderall is normally used for people who need to stay up all night studying. I have never heard of someone who said, 'I am going to get ripped on Addy.' I mean, that's not really what Adderall is meant for." Another participant said that while "alcohol brings your level down, Adderall brings you up."

The positive effects the drugs had on participants' focus, motivation, and enjoyment was apparent. Prescription stimulants offered a way to be productive at work and experience pleasure at the same time. While participants had little control over the amount of time they had, they believed they could control intrinsic factors such as the lack of motivation through the use prescription stimulants. A few students referred to PS as the "pill of motivation" and some reported feeling that "time expanded" when they were on PS, as seen here: "You know, there's not enough time in the day, but with PS, there's so much time to do whatever you want, I mean, you can do a hundred different things at the same time and just love it." Another explained:

Well, I can concentrate on really boring subjects if I try really hard, but I would rather think about things that are entertaining. I'm a thinker and I like to think about things, so if I were prescribed Adderall or Ritalin, I could sit there and read what I need to read with less distraction.

Interestingly, most participants noted that PS did not make them smarter, more intelligent, or creative, but simply helped to manage time, as seen here: "So I guess condensing a week's worth into one sitting is really the only thing that comes out of it. I don't think it elevates my intelligence or creativity or anything like that."

The data revealed forethought and strategy in how and when participants used prescription stimulants. Some used prescription stimulants a few times in the semester to get through rough segments, but others used PS every day. Some took PS in the morning for a boost of energy while others preferred to take them in the evening to stay up all night and study. Embedded in participants' behaviors was the notion of the "body as machine" in that they were manipulating their bodies with PS to obtain certain effects. Some participants even took small doses throughout the day to control the effects, as seen here:

I actually split mine in half. So, one, it's less medication that goes through my body and, two, I get to control it a lot more. I'm a big person on being in control. I want to know exactly what's in my body at what times and to be able to control it without killing myself.

Consistent with the idea of mechanical manipulation, a few snorted pills for increased effect:

I have snorted it before and it does work. It hits you a lot faster and it hits you better. I mean, you can't do it consistently because you're going to get your nose bloody. But if you need a little bit right there, it's sort of your dumbest smartest option. I mean it's dumb, but then again, your body is a wonderful tool and it will heal itself up.

In this instance, the participant uses the mechanical metaphor to compare the body to a tool; the suggestion here is that damage to the body is not such a big deal since the body has self-generative properties. Ironically, in saying that the body "will heal itself," the participant is in fact invoking the idea of the body as organic and creative, rather than mechanical, for as we well know, machines do not heal themselves.

In conclusion, it was clear from the data that participants were not trying to fix a faulty body or mind; they were not suffering from a disease or illness condition as defined and verified by the medical establishment. Instead, they were using PS to fix the problems of inadequate time and motivation—everyday problems of living in a hectic world.

Basic Knowledge About PS and Associated Risks

Participants had little scientific knowledge about prescription stimulants or the risks involved. They referred to PS by brand name (e.g., Adderall and Ritalin) or their colloquial diminutives—uppers, speed, and "Addy." Participants knew that PS were used to treat the medical problem of ADHD; one participant believed that he might indeed have ADHD, but the rest were confident that they did not need PS for medical reasons. A few participants offered biochemical explanations for how the drug worked,

albeit unclearly, as seen here: "I know that they affect serotonin receptors, dopamine, and all of that. You can get strung out, I know that much."

On the whole, there was a lack of concern about the health risks involved with using PS without medical supervision. Participants described a casual and nonchalant approach to their decision-making, as seen in this statement: "I wasn't really scared, I guess, I was just like, 'Whatever.'" A few participants were aware of cardiovascular risks in a general sense, as seen in the following excerpt: "I haven't really researched the health risks that extensively, but I can imagine that day to day use of PS wouldn't be the greatest on your heart." However, having this information did not deter them from using the stimulants. Another participant suffered from a heart condition and was initially nervous about using PS, but then came to terms with it. She explained: "I didn't really feel like it would be detrimental to me because so many people take Adderall and Ritalin. I didn't really think about it. I didn't think it was a harmful drug."

Interestingly, for many participants, it was only during the course of the interview that they realized how little they knew about prescription stimulants. It was within this setting that they were forced to reckon with the medical and health risks associated with misusing PS. Participants were surprised at themselves for not researching it more. Statements such as "I guess I should have looked into it more" or "I'm not sure why I did not research it more" were frequent in the data.

Paradoxically, the lack of concern for risks was tied both to a blind faith in the safety of pharmaceutical drugs as well as a general distrust of all chemical products. On the one hand, there was an assumption of safety associated with using prescription drugs as noted by one participant who said, "I feel like it is safe because it's prescribed by a doctor. ... Maybe it's just me comforting myself, but I feel like it's better for you than alcohol or other drugs." They also did not think pharmaceutical drugs could be risky enough to cause serious danger, reflected several times in declarations like "If it's a pill, it can't be that bad for you." On the other hand, participants simultaneously downplayed risks by asserting that all pills were dangerous. They argued that risk was embedded in the very nature of chemically manufactured drugs, rather than PS in particular as seen in the following statements: "Any substance that you put into your body to alter your mind's chemistry is probably not good for you," "There are definitely risks, but that's just every drug," and finally, "You never really know what's going to happen *even* if a doctor prescribes it to you." These statements betray a certain sense of fatalism in that no matter what the circumstance, there will always be an element of risk attached to using PS. Participants seem to be suggesting that legal prescriptions are mere technicalities, not a meaningful protection against risk.

Overall, the lack of concern for using a relatively unknown pharmaceutical substance affirms the taken-for-granted assumptions participants held about the safety and efficaciousness of biomedical technologies. The biomedical model of medicine was indeed the dominant model for understanding health and illness here. Participants engaged in the practice unreflectively, they never questioned whether the use of pharmaceutical drugs was the best course of action to solve the academic problem at hand, and they did not experience any dissonance with their decision to use PS. While participants offered a general critique of the dangers of chemical drugs, they did not believe that a valid prescription was necessary to protect them against risk.

Learning About the Effects of PS Through Experience and Experimentation

Given that participants did not receive medical supervision, how exactly did they decide how much of the prescription stimulants to take? The data suggest that prior experience with pharmaceutical drugs and other substances provided participants with a sense of familiarity and comfort with pharmaceutical drugs. This familiarity allowed them to draw particular conclusions about optimal dosing. Another common rationale used to determine the right dose was drawing comparisons between the supplier and themselves. One participant explained her reasoning as follows:

Interviewer: How did you know it was OK to take 40 then?

Respondent: I didn't really know until I took it and it was alright, so I thought I'll just stick to this and not move up anymore.

Interviewer: Did you ever ask her [the supplier] how much she was prescribed to take at a time?

Respondent: Well, it said on her prescription bottle 40 mg, so I knew that she took 40 every day and I was just like, well, she's my age and female too, so it's probably the same for me is my reasoning.

In this instance, through a basic process of analytic induction, the participant arrived at an "educated" guess about what the right dose might be for her and actual experience confirmed the decision. Another participant commented that his supplier had told him to take a whole pill, but since the supplier had been doing it for a while and he had not, he figured he would have low tolerance, so decided to take half a pill. He compared it to drinking, "... Kind of like drinking, when you have your first three beers you are drunk off your ass, but then two years down the road you need about 12 to get the same effect." This participant thus showed a high level of familiarity with using other substances and used this prior knowledge to make a decision about dosage.

A key technique many participants used to determine the correct dose for themselves was personal experimentation. Participants kept track of their experiences and learned to balance the positive and negative effects of PS to arrive at an optimal dose. One participant learned that the 40 mg pill made him feel "edgy, jittery, and not something I want to do." Another noted that at a higher dose he was "jumping around from thing to thing," but a smaller dose allowed him to focus on his tasks. Some participants adjusted the dose by cutting pills in half or opening up capsules, as explained by a participant:

There are two different types the capsules and the pill. If you do not want to take the whole pill, just cut the pill in half and save the rest for later. Also with the capsule, pop it open, and take half the little bits of beads, close it and save the rest.

The physical act of removing beads from a capsule demonstrates a high level of ease with pharmaceutical products and a low sense of danger in toying with them. A few participants also talked about raising the dose in increments to make it work for them: "If I took a 10 and it didn't do anything, I would take another one. If I took a 20 and it did something, then I'd stick to it." Thus, participants made logical

inferences about what would work for them based on experiential learning. There were only a few participants who were cautious about experimenting, as seen in the excerpt below:

I just heard from other people, don't take too much because you could get, I don't know, your heart could beat fast and you could get all paranoid or something, so I just stuck to what I knew. I never really wanted to risk having heart palpitations, so I didn't take more than 40 mg.

The stories participants told during the interviews indicated that they were exposed to a high level of danger as a result of misusing prescription stimulants, but this did not deter them. While participants pointed to the desirable effects of increased motivation, focus, and euphoria, they also talked in great length about the negative effects, which ranged from loss of appetite and sleep to hallucinations, heart palpitations, and even being compelled to engage in risky activities like jumping out of windows.

One participant described her first experience with PS: "I felt like I bounced from thought to thought and it was almost paranoia because I couldn't control my thought process. I remember I got shaky and really hyperactive, like I needed to do something or move around."

Another participant recounted the following experience: "Last semester I had this experience where I downed two energy drinks while I was on 30, maybe more, mgs of Adderall and my heart was racing. I could feel it and I was like, "Oh, jeez, this isn't good." Surprisingly, even though participants felt unnerved by these experiences, they did not stop using PS. They did not connect these negative experiences with severe life-threatening situations; instead, they rationalized that they were taking the pills incorrectly and needed to adjust the dosage to have a better experience. This is another instance where the primacy of biomedicine as the unquestioned and "safe" solution is highlighted.

It is important to point out that experimenting with prescription drugs is not an uncommon behavior in itself. The literature on medical adherence suggests that people *with* prescriptions misuse biomedicine all the time by using it in a manner not necessarily recommended by the doctor (Pound et al., 2005). Siegel, Schrimshaw, and Dean (1999) refer to patients as "naive scientists," who formulate hypotheses about medicines then test these hypotheses by altering the dose or stopping the medicine to observe the effects. In this study, however, participants did not have a diagnosis or a valid prescription. Participants operated their experiments completely outside the purview of the medical establishment, thereby exposing themselves to even greater calamity. Furthermore, unlike those suffering from the pain and uncertainties of illness (e.g., Frank, 1995), participants in this study showed themselves as being in the driver's seat, confident, and in control of their actions and the outcomes of those actions.

Locating Resistance and Addiction Within the Realm of Individual Control

There were only two dangers that were salient to participants: "building up resistance" and becoming addicted, both of which had negative connotations and were associated with a loss of control. Participants described "building up resistance" as having to use more PS to get the same effect; it was viewed in a negative light because it somehow meant that the body had lost its innocence or purity. One

participant lamented that she had built up a tolerance for PS because she had undergone a number of surgeries and used multiple painkillers.

The data revealed a strong concern about addiction, but unlike the problem of resistance, addiction was always attributed to others, but not to themselves. Addiction was defined by participants as a "loss of control" and "needing" PS as opposed to "choosing" to take them. Participants did not discuss the physiological aspects of addiction (i.e., the increased dopamine in the brain, which results in disrupted communication between brain cells), but rather addiction was framed in terms of personal weakness, poor choices, and a lack of "mental control." Participants typically viewed themselves as beyond the reach of addiction because of their own self-control, as seen here:

Interviewer: Have you ever feared getting addicted to them?

Respondent: In the grand scheme of things. I don't think I would get addicted. I don't need it to function. I can never imagine using it to function.

Interviewer: So have you ever feared getting addicted to prescription stimulants?

Respondent: No. I pride myself on being mentally strong enough to know when I need to quit something. I smoked cigarettes and cigars for maybe a year and it's something that I just threw away, cold turkey. Aside from alcohol, I could see myself giving up anything.

In this instance, the participant uses his past experience to assert his identity as a strong-willed individual in control of his behaviors. This is deeply resonant of the notion of the "ideal modern identity" infused with a strong sense of ownership over nature and one's symptoms and behavior (Gordon, 1988).

While misusing prescription stimulants was seen as acceptable within the college environment, becoming addicted to PS was not seen as "cool." Using PS was associated with achieving academic or social goals, so participants indeed saw it as problematic when addiction set in. There were several checks and indicators participants used to assess addiction in themselves and others, including taking PS too often, taking too high a dose, snorting PS, and not being able to control, moderate, or stop using PS. If participants did not exhibit any of these behaviors, they did not believe themselves to be addicted, and seeing these "signs" of addiction in others was frowned upon, as seen in the following excerpt.

Well, I have some friends that take it three or four times a day. I was in a room one time where my friend walked in and he goes to our other friend, "Hey, do you have Adderall I can take?" And we looked at him and go, "You've taken three today. I've seen you take two and you told me you've taken one or two before you got here." That's not OK.

A few participants noted that snorting was a red flag for addiction because it was "dirty" and "not studious." This was further explained by one participant, "Yeah, if you had a friend and you walked into a room and caught them snorting Adderall, what would you think of them? It's just dirty." Cutting back, regulating, or moderating intake were seen as effective techniques to protect against addiction, as seen in the excerpt below:

I never liked to do more than two or three days in a row because for me it ran the risk of losing that feeling. When I said my friend had gained absolute tolerance, you could tell there were mood issues. He got very angry and very pessimistic. I know that won't happen to me in the long run if I take it for a week straight, but I don't want the down periods to become more influential than the highs. I've thought about this, trust me.

In short, so long as students did not demonstrate any signs of addiction, using PS was deemed socially acceptable. For all participants, including this one, maintaining control (or an illusion of control) over mind, body, and behavior was crucial to the practice of PS misuse. Participants depicted themselves as being able to objectively observe and control their behaviors through careful management of their medicine.

Many participants believed they could not get addicted because they did not have "addictive personalities," a phrase that appeared repeatedly in the discourse. Participants relied on past experiences to support this assessment of themselves, as seen here:

I think with me, I just really don't have a very addicting personality. I know a friend who one day picked up smoking and, you know, started smoking three packs a day. And me, I had a cigarette and I was like, "Oh, eww." When I did coke I was like "Oh, alright." All the stuff I do I say, "OK, I'll try it," but I'm just not really an addictive person.

Participants also tended to compare themselves favorably to other presumably more gullible individuals, as seen here: "The same kid that had the prescription speed later becomes a stoner and he still is. That just proves his personality. I don't have that addictive personality." Another participant declared, "Yeah, I'm pretty headstrong about things and I don't have an addictive personality, which makes me really lucky."

It is relevant to point out that the phrase "addictive personality" is a psychological concept that refers to a preexisting set of traits such as low impulse control and compulsiveness believed to make individuals more susceptible to addiction ("Behavioral pharmacology of human drug dependence," 1981). For participants, not having this personality meant there was something innate in their makeup that served as a protective factor. In placing such confidence in their individual competencies and strong personalities, students show themselves as self-contained units separate from society and context. This is despite the argument from behavioral experts that a predisposition to addiction may actually be a combination of biological, psychological, and environmental factors ("Behavioral pharmacology of human drug dependence," 1981).

Discussion

This qualitative study has documented the ways in which college students navigate the meanings and practices associated with PS misuse. The analysis identified four themes: using and manipulating PS for increased productivity, basic knowledge about PS and associated risks, learning about PS through experience and experimentation, and locating resistance and addiction within the realm of individual

control. This study contributes to the literature by showing that the biomedical model with its modernist assumptions of the body, health, illness, and treatment are central to the practice of PS misuse among college students. The findings of this study resonate with what Babrow and Mattson (2011) refer to as one of the distinctive and generative characteristics of health communication—the tension between scientific and humanistic assumptions or the tension between the “power and potentialities of science and the desire to recognize and actualize our human being” (p. 21). Situated within this tension, the discussion elaborates upon the powerful influence of biomedicine and its embedded modernist assumptions as negotiated within the practice of PS.

In this study, pharmaceutical drugs were not used to cure disease—its traditional function—but rather to alleviate everyday problems of living. For example, participants in this study do not define themselves as ill, they do not experience their condition as illness, and they do not take on the “sick role” or any other illness identity (e.g., Geist-Martin, Ray, & Sharf, 2003). Participants do not suffer from a legitimate disorder as verified by the medical establishment, but use medication to complete mundane academic tasks of reading, writing papers, and studying for tests. This phenomenon provides a glimpse of how biomedicine now occupies a central role in traditionally nonmedical arenas of life, redefining and blurring the boundaries between sickness, wellness, and cure.

This study illuminates a particular paradox: On the one hand, the role of the medical expert is declining in authority, yet at the same time, biomedicine is itself becoming an increasingly normal and natural response to challenging life situations—at least for a certain segment of the population. It is clear from this study that students reject the authority and legitimacy of the medical establishment. To legally obtain or possess a prescription, the individual must have access to the healthcare system, maintain a relationship with a licensed physician, and receive a diagnosis. In this case, participants bypass the medical establishment and rely on peers and personal experimentation to learn how to use prescription stimulants. In a way, pharmaceutical drugs have become decoupled from the institution of medicine, a free-floating cultural technology delinked from its source and available for use and appropriation by all those who can afford it. This may seem empowering—the idea that biomedical technology is freed from organizational and institutional control, an “open source” model of medicine, if you will. However, the use of medicine in the absence of a medical problem and a medical provider is perhaps the most extreme form of hegemonic power—the power to wield influence even in the absence of authority; an intangible all-pervasive influence that unobtrusively engulfs everyday modes of thinking and practice, or culture.

There are many reasons we could attribute for biomedicine becoming the normalized response to medical and nonmedical problems in the United States. At the macro-level, deregulatory state policies and a consumer choice/market-based economy are criticized for enabling the process of medicalization and pharmaceuticalization (Abraham, 2010). Research suggests that the current generation of youth is one of the most medicated generations in history (Kessler et al., 2005), which might explain the familiarity participants in this study showed with using drugs. Perhaps the use of prescribed pharmaceuticals has become so commonplace that people are comfortable appropriating them even in the absence of medical supervision. Institutionally, the medical establishment has been critiqued for engineering social control by sponsoring the definition of disease, medicalizing normal life problems, and normalizing uncommon medical disorders through avenues such as direct-to-consumer advertising of drugs (e.g., Moynihan,

Heath, & Henry, 2002). More than half a century ago, Parsons (1951) argued that individuals were socialized into the sick role; today individuals are also being socialized into the roles of pseudo-doctors and pharmacists. Expanded social networks and the proliferation of medical websites have given lay audiences an entrée into the world of medicine. These media serve as socializing agents teaching lay people how to think about, act upon, and manipulate the body through biomedicine.

For participants in this particular study, biomedical discourses dominated their thinking about solutions to life's problems. Culture provides the resources and communicative frameworks to make sense of problems of living (Obeyesekere, 1985); however, for these participants, the body-as-machine metaphor appeared to be the only cultural framework available to interpret the varied problems of college life. A hidden assumption of pharmaceutical drugs is that the problem is one of individual pathology and should be fixed at the individual level; this was certainly the feeling among students. They conceptualized the mind as recalcitrant, but something that could be harnessed through pharmaceutical drugs. The opportunity for a quick fix provided an almost taken-for-granted quality to this practice, so much so that the prevailing question was not "Why do you use PS?" but rather "Why wouldn't you use PS?" Instead of viewing problems such as the lack of time, focus, or motivation as normal problems to be managed using nonmedical resources, medical resources were posited as the solution to the nonmedical problem. Time management strategies, no-device zones, cutting down on Facebook time, and conversations with faculty were seen as subpar remedies to the pharmaceutical fix.

The desire for control over the mind and body loomed large in the data. Participants made assertive statements such as "I'm big on control" and "Trust me, I've thought about this." Participants did not see themselves as personally susceptible to addiction because they had self-control and lacked addictive personalities. Pharmaceutical drugs were malleable, flexible, and capable of being molded to meet their nonmedical goals. They were confident that by controlling their drug intake, they could prevent addiction. In placing such confidence in their abilities and self-control, participants revealed themselves to be self-contained units separate from culture, society, and the environment; this is also reminiscent of the modernist assumptions of biomedicine where mastery over self and nature are of premium value.

From a public health perspective, there is much to be concerned about. Participants showed a surprisingly low level of awareness of the medical risks associated with unsupervised use of prescription stimulants. PS were seen as relatively safe compared to street drugs and participants believed that they could stay in control of their behaviors. The findings from this study offer some recommendations for public health campaigns. First, given that addiction is negatively perceived by students health messages should address the faulty assumptions students hold about their own susceptibility to addiction, in particular the incomplete understanding of the "addictive personality." Next, since many students do experience negative side effects from misusing PS, but engage in avoidance strategies, messages should reinforce the severity of those experiences. Finally, students must be educated that PS are not "pills of motivation" available for all to use, but rather these pills contain dangerous chemical substances such as dextroamphetamine saccharate and dextroamphetamine sulfate that carry very specific risks when used in an unsupervised manner and cannot be generalized to "all chemical drugs."

It is important to point out that while a public health campaign or intervention will be beneficial in preventing PS misuse, it will not necessarily challenge the hegemony of biomedicine. We can imagine a time when it will be routine for physicians to prescribe prescription stimulants for nonmedical use and soon a new hegemony in which a "legitimate" practice of using the drugs to solve problems of living will be pitted against the illegitimate use of PS. So, it seems that a different kind of a social campaign is required: one that involves the inclusion of alternative worldviews and cultural discourses to challenge the rational-scientific discourses of the body and mind.

There is a poster from the National Civil Rights Museum in Alabama, which hangs across from my office. It depicts the great American leader Dr. Martin Luther King, Jr. sitting in the Jefferson County jail in Birmingham in 1963. Beneath King's picture is the quote: "Your self-sacrificing devotion to your purpose in life and your unwavering faith will carry you through times of difficulty." The quote reflects a particular ideal—a purposeful life, where purpose emerges from a deep inner life, a disciplined life, an adherence to a set of principles, and spiritual beliefs. Human will and the mind are positioned at the center of desire, belonging, society, and justice. It is a stark contrast to the students in this study, for whom the mind was a tool, a thing to be manipulated not by intrinsic factors such as devotion to a cause or even a concern for academic excellence, but by pharmaceutical drugs. Their goals were not social or political, or even creative and intellectual. Their activities were not centered on the common good, but designed to produce short bursts of motivation and attention to complete rather mundane tasks directed toward individual success. Their "rational" behavior, seemingly detached from self and society, is captured rather astutely in the assertion by Lock and Gordon (1988) that "The moral dilemmas regularly encountered in contemporary medicine may best be understood in the context of the denial of shared values and the reframing of values in terms of rationality and the individual instead of culture and society" (p. 40).

The study has limitations common to most qualitative evaluations. On the one hand, it provides rich information about a small group of individuals, but it cannot offer generalizable conclusions. The study is able to identify patterns in the data and offer explanations, but is unable to show causality. Furthermore, given the uniqueness of the study in terms of the particular sample of students, findings may not be replicated in other contexts.

Another methodological limitation that is important to point out is that the interview did not ask participants about their experiences with *valid* prescriptions and diagnoses—this would have provided a useful point of comparison for their misuse of PS. A future area of research might investigate how students' experiences with legitimate prescriptions influence their perceptions of the biomedical model of medicine and medical practices. For instance, it is possible that students who suffer from valid mental disorders strategize about how to use prescribed drugs in much the same way as those without valid prescriptions.

Future research should also investigate the role that students' perceptions of healthcare providers play in influencing illegal medical practices. For instance, if students believe that doctors are mere "prescription writers" whose expertise is technical rather than organic and linked to deep knowledge and experience, they may believe that a prescription is indeed a mere technicality, which, in turn, could fuel prescription drug misuse. This notion is, of course, not so far-fetched in the current healthcare

system, where the average time a doctor spends with a patient is 15 minutes or less (Rabin, 2014), which not only detracts from the credibility of doctors, but limits opportunities to build trust, trustworthiness, and relationship with patients.

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