



Non-medical use of prescription drugs: perceptions of minority college students

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ABSTRACT

Objective: The goal of this study was to examine undergraduate minority students' perceptions toward the non-medical use of prescription drugs (NMUPD). **Methods:** Semi-structured interviews were conducted with 22 (68.2% female; 40.9% Asian; mean age = 20 years) minority students from a large Midwestern University in the US. **Results:** Four major themes were revealed: Motives for the NMUPD, sources for obtaining drugs, the influence of the college environment and areas surrounding the university, and suggested prevention programming. **Conclusion:** Findings revealed several problem areas among college students, especially among minorities. It is critical that programs and policies on college campuses increase efforts to address the misuse of prescription drugs. Prevention efforts should also incorporate cultural factors to address minority students on campus.

KEY WORDS: Drug use prevention, minority college students, motives, prescription drug use

INTRODUCTION

The non-medical use of prescription drugs (NMUPD) is recognized as a public health concern affecting university campuses nationwide [1,2]. National data from the Monitoring the Future study show an increased trend of NMUPD over the past decade, with 14.8% of young adults aged 18-25 years reporting use [1]. Regarding current use, national study results indicate 5.1% of 18-22 years old engaged in recent (past 30 days) prescription drug use for non-medical purposes [3]. This age group has the highest prevalence of NMUPD compared to other age groups, and similar reports have placed young adults at an increased risk for other drug use and polysubstance use [4,5]. Despite the rising concern surrounding the NMUPDs among college students and young adults, there is a paucity of studies that addresses the NMUPD among young adults of racial and ethnic groups.

Among studies that have examined racial and ethnic differences in the NMUPD, it has been suggested that Hispanics are more likely than other minorities to engage in the NMUPD [6-8]. Whereas Asians have been found to be less likely than all other racial and ethnic groups to engage in the NMUPD, African-Americans are more likely to engage in the non-medical use of pain medications than other minorities [6,9]. A recent study also found that African-Americans were more likely to misuse pain medications, further suggesting a need for additional

prevention and intervention programs targeted at racial and ethnic groups [10]. Thus, there is a need to further understand the perceptions of use within these groups.

Both qualitative and quantitative studies have investigated the motives for NMUPD and perceptions of NMUPD. For instance, the literature indicates that the primary motives for NMUPD among college students include experimentation, recreational purposes, and to increase their academic performance [11-14]. More specifically, common reasons college students reported engaging in the non-medical use of stimulants (i.e., Adderall, Vyvanse, and Ritalin) to increase performance during academic examination periods [15,16]. On the other hand, relaxation was the main reason for the non-medical use of opioids such as OxyContin and Vicodin [17,18]. Although there have been numerous studies exploring misperceptions of NMUPD among college students to inform innovative prevention strategies, these studies have yet to capture and place emphasis on minority students who are at risk for NMUPD.

Previous studies have explored the sources for obtaining prescription drugs for non-medical use [19-21]. In particular, one study consisting of 520 college students found that approximately 87% of students reported obtaining stimulants from peers [22]. Of this group, 30.4% reported that acquaintances were the source, followed by students utilizing their own prescriptions (26.4%) and obtaining prescriptions from family

members (11.9%) [22]. Research has found that college students possess limited knowledge of the side effects associated with NMUPD and they view non-medical use as harmless or safer than other illicit drug use [23-25].

To fully understand the NMUPD on college campuses, the objective of the present study was to use qualitative methods to examine the perceptions of the NMUPD among minority college students. The use of qualitative methods can enhance existing knowledge about the why and how of NMUPD [26]. Qualitative methods, including interviews, supplemented with additional probes have the ability to produce in-depth information on the perceptions and attitudes of participants [27-30]. Understanding minority students' perceptions of NMUPD is essential for developing effective prevention methods that are culturally acceptable to address the needs of racial and ethnic minorities on university campuses.

METHODS

Recruitment and Participants

Between June and September 2015, a poster campaign with details about this study and contact information were displayed in various academic buildings and residence halls on the university campus to recruit participants at a large Midwestern predominantly white university in the US. Fliers and announcements were also exclusively sent to various minority-centered organizations (i.e., sororities and fraternities) on campus. Snowball sampling was utilized to increase study recruitment, as participants informed their peers about the study and referred them to contact the principal investigator to be screened for eligibility [31]. Eligibility criteria included: Full-time undergraduate student, 18 years of age or older, and self-identified as a racial/ethnic minority. A total of 27 participants met eligibility; five students who met the eligibility criteria did not show up for their pre-assigned interview times. Following the principles of qualitative research, recruitment concluded at the point of saturation [32]. Therefore, a total of 22 students participated in the interviews. This study was approved by a university-based Institutional Review Board.

Procedures

All participants were informed of the study purpose, procedures, confidentiality of their responses, and potential risks and benefits of this study. Participants were also informed that they would receive a \$10 gift card after the completion of the interview session. Participants provided informed consent, acknowledge that they understood study details and that participation was voluntary before the commencement of the recorded interview session. The principal investigator and a research assistant conducted the semi-structured interviews in a private office located on the university campus. Each interview was 15-30 min in length, aided by the use of an interview guide with open-ended questions and additional probes. Interview questions asked students about their perceptions concerning NMUPD on campus (e.g. "do you think that the misuse

of prescription medications is a problem on this campus?;" "what is the perception or attitude among students in general about the non-medical use of prescription medications?;" and "which prescription medications do you think are used most on campus for the purpose of getting high?"). Questions inquired about NMUPD and co-use of NMUPD and other drug use (e.g., "which drugs are most commonly used with prescription medications?;" "which prescription medications do you think are mixed with alcohol to get high?;" and "are there specific times during the semester when you see the most misuse of prescription medications and drugs?"). Further, questions concerning prevention methods (e.g., "how can college students be taught about the dangers of misusing prescription medications?;" and "what steps do you think the university needs to take to address the non-medical use of prescription medications?"). All interviews were audio recorded.

Data Analysis

Audio-recorded interviews were transcribed after each interview session to compare each interview and based on the concept of saturation that new information obtained from participants does not add to information already collected from participants and information becomes repetitive [32,33]. Once saturation had been determined by the authors, each transcript was coded and analyzed using NVivo, a qualitative data analysis computer software program developed by QSR International [34]. Consistent with the consent comparative approach [32,35], interviews were coded utilizing a memoing and content coding technique to evaluate identified themes in the data. Emerging themes in the data were identified, and key quotes were used to exemplify the meaning of key themes and subthemes for each interview question. A research assistant and two study authors coded the transcriptions independently and developed a list of representative themes and quotes. Following the independent coding, the research team held four meetings to discuss coding and triangulation. Coding consensus was reached on the labeling of themes and subthemes during meetings. The team also reached consensus on key quotes to illustrate the meaning of representative themes in the data during the final meeting. Quotes were edited for grammatical errors and pauses in speech; terms such as "like" and "umm" were removed from original quotes.

RESULTS

Sample Demographics and Emerged Themes

Of the 22 participants interviewed, 15 (68.2%) were female. Ages range from 18 to 22 years for all participants and the mean age was 20.0 years [Table 1]. The majority (41%) of participants were Asian. Three-fourths (77.3%) of participants resided off-campus, and the majority had roommates or lived with family members.

Four prominent themes emerged after the analysis of the interview transcripts: (1) Motives for NMUPDs, (2) the influence of the college environment, (3) sources for obtaining prescription drugs, and (4) suggested prevention programming. Quotes from participants were used to illustrate each subtheme.

Motives for NMUPD

The three subthemes for motives for NMUPDs while attending college were: (1) For academic purposes, (2) to alleviate stress, and (3) for recreational use, as shown in Table 2. Students expressed that the main use of stimulants, such as Adderall and Ritalin, was for academic purposes. Students ($n = 16$) credited the use of Adderall and Ritalin as a way to improve focus, increase concentration, and to stay awake for longer periods of time. For example, one participant (20-year-old Asian female) stated, “increases concentration and it would increase energy to keep them awake in the night or even throughout the day.” Moreover, students highlighted that the pressure to succeed may contribute to the current non-medical use of stimulants among college students. Half of the students ($n = 11$) discussed using stimulants to improve one’s focus on coursework. For example, an 18-year-old Hispanic female participant said, “there is a lot of pressure on kids to do well so that can lead to the use of

Ritalin or Adderall to help focus.” A 22-year-old Hispanic female participant stated, “I’ve taken science classes where the field that I’m in, is very hard and it is very fast paced. I’ve heard of people taking Ritalin to help them focus and to get their jitters out.” In addition, individuals described Xanax and OxyContin as prescription medications that students use to alleviate stress and anxiety. Participants also suggested that their college student peers used depressant medications to relieve stress and anxiety.

On several occasions, students described 3,4-methylenedioxy methamphetamine (MDMA), although not a prescription drug, as “fun” and as a way to “have a good time over the weekend.” For example, one 19-year-old Asian male participant stated, “It’s basically just like for fun. I heard a lot about MDMA and that it gives you a rush in your body. So people just want to feel pumped up.” The use of MDMA (i.e., ecstasy and molly) was mentioned in correspondence to students attending concerts on campus and in surrounding areas.

Influence of the College Environment and Surroundings

The first subtheme that emerged was the time of during the academic year NMUPD occurred. Overall, students described specific instances during the year when heavy NMUPD occurred and places on and off campus where students engaged in such activity. As previously mentioned, college students primarily used stimulants for academic purposes. As such, the majority of students stated that the non-medical use of stimulants occurred more frequently leading up to the commencement of the fall and spring semester and surrounding midterm and final examinations. Breaks from school (i.e., spring break and summer break) were also prominent times for NMUPD among students. When asked if there were certain times during the year that NMUPDs were more visible, the majority of students ($n = 13$) presented similar comments to the following 22-year-old Asian female’s statement, “definitely during examination times, midterms, and finals, those two periods” whereas another 19-year-old Asian female participant stated, “I would say the beginning of the semester and the end of the semester. I think between

Table 1: Participant characteristics

Item	n (%)
Sex	
Female	15 (68.2)
Male	7 (31.8)
College class	
Freshman	1 (4.5)
Sophomore	7 (31.8)
Junior	8 (36.4)
Senior	6 (27.3)
Race	
African-American	8 (36.4)
Asian	9 (40.9)
Hispanic	5 (22.7)
Living arrangements	
On-campus	5 (22.7)
Off-campus	17 (77.3)
Extracurricular activities	
Sorority	3 (13.6)
Honor societies	2 (9.1)
Student government	2 (9.1)
Clubs/associations	11 (50.0)
Not involved	4 (18.2)

Table 2: Motives for the non-medical use of prescription drugs

Emergent theme	Subtheme	Selected interviewee quotes/comments
Motives for NMUPD	Academic purposes	<ul style="list-style-type: none"> • Adderall! Oh yeah, I do have some friends, I guess who take Adderall to stay up all night because they can’t work. Their justification will be, “Oh I can’t wake up for my class tomorrow morning” • To study, to focus, and to like on it because we have a lot of information that we have to know weekly that at a normal pace, it takes a lot of your time, so they do it (Adderall) to condense studying time • Yeah so Adderall, people tend to use them to study. The main aim is to stay awake and study
	Anxiety reduction/stress relief	<ul style="list-style-type: none"> • Some people do not have anxiety problems and use it as a downer basically, just makes you real calm, real relaxed, and real chill • Like afterward, when they feel like they need to release some stress or something (OxyContin) • Xanax, people use that as a way to calm down, stuff to feel less anxious. Like as a form to come down, I know people do that taking something so that you are not so jittery
	Recreational use	<ul style="list-style-type: none"> • Prescribed medications just like for fun • I feel like college students do that (use prescription drugs without a doctor) a lot. Like when they (college students) go to concerts and things like that • People have different reasons for doing it but mostly I would say just (to) get all in the mood at that particular time. Just to have fun

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Table 3: Suggested prevention programing to inform students

Emergent theme	Subtheme	Selected interviewee quotes/comments
Prevention programing	Use of media	<ul style="list-style-type: none"> • A documentary, especially a short film. You see people you know in them, it's easier and you can play them on campus • Pictures are very effective and influential
	Peers	<ul style="list-style-type: none"> • I know different organizations have programs touching on drug use and what to do, but it would be nice to have an organization of students, who are actually there to talk to students • If it were coming from peers, then people would gravitate toward stuff
	University	<ul style="list-style-type: none"> • Mentioning it (awareness about NMUPDs) in the beginning of a lecture they (college students) have to pay attention anyway. Mentioning it regardless of what classes are being taught • Mentioning it during Freshman orientation. Freshmen come in and they do not know a lot of things, so it is probably the best time to inject a little knowledge • A small training course, it does not have to be long. It could be 5 or 6 weeks on prescription drugs

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whenever there are breaks that we have.” Fraternity and sorority parties and “rush” weeks were also mentioned as venues for drug use. The second subtheme was the transition from a high school environment to college environment. Students suggested that drug use occurred in college because of students’ sense of freedom to experiment while at college. Similar sentiments were expressed by six students, for example, a 19-year-old Hispanic male participant said, “A lot of people are watched over very strictly in high school. You have this big freedom (coming to college), then you start experimenting with things.” Reinforcing the topic of freedom, a 21-year-old Asian female participant mentioned, “I think people come in with the mentality ‘I can do whatever’ and they just need to get it out of their system mentality.” Similar comments were made by other participants (*n* = 4) further suggesting that students view the transition from high school to college as a time to indulge in their “curiosity” about what will happen when they use different drugs.

Sources for Obtaining Prescription Drugs

Participants reported that students obtained prescription drugs for non-medical use and other substances from parents and peers. A 19-year-old Hispanic female participant mentioned, “Some college students buy Ritalin from people that are prescribed it, like they need it but they sell it too.” Several other participants stated that college students typically seek out individuals on campus that are prescribed medications to obtain them in exchange for monetary payment. However, some students share their medications with friends for free as indicated by a 20-year-old African-American student who described it as a “group thing, college students all share.” Participants also reported having stockpiled prescription medications, so they could use them for reasons other than those prescribed by their physicians. Two students indicated that they obtained prescription medications from medical professionals and were “given opiates for pain and have leftover (medication).”

Attitudes

Fifty percent (*n* = 11) of students expressed attitudes of indifference, suggesting that they did not care if people engaged in the NMUPD. However, unlike the students

previously mentioned, several students (*n* = 3) expressed clear disapproval of NMUPD among peers and purposefully decided to not associate with individuals who engaged in drug use and all three participants identified as Asian. For instance, a 20-year-old Asian female stated, “I don’t surround myself with people who do that (use drugs).” Five students also felt that it was necessary for students to know their limits and use in moderation when engaging in either alcohol or drug use, as expressed by a 22-year-old Hispanic male, “I think everything should be used in moderation. Even if you are not prescribed it, no more than the prescribed dose.” Several other participants (*n* = 3) thought that it was acceptable for students to use illicit substances with the stipulation that it had no effect on health.

Prevention Programing to Inform Students of Risks

A large majority (*n* = 21) of students provided detailed suggestions for prevention programing [Table 3]. Ideas focused on ways to increase student knowledge about side effects for misusing prescription medications and improve student awareness of consequences for mixing substances. Utilizing various forms of media, such as posters and short films, were suggestions. For instance, a 21-year-old African-American female mentioned the use of popular social media applications to reach students, “with this being a college you have to really think about what students use ... Instagram, Twitter, Facebook, and other platforms.” Student organizations and the interaction with peers were favored among participants. A 22-year-old African-American female suggested a “student organization that holds programs and provides advice because it is different when it is student to student.” In addition to the development of peer organizations centered on increasing awareness and knowledge of prescription drugs and other substances, students (*n* = 12) suggested that university programs should be used as a platform to engage students. A 19-year-old African-American male suggested having someone talk to students that has had negative experiences from NMUPD would have an impact because, “until something actually bad happens to them (students), until they fall off the horse they would not be like this is ruining my life.”

Freshman orientation was suggested as the most effective way to increase knowledge and awareness as expressed by a 22-year-

old African-American female, “during Freshman orientation, during breakout sessions, on things that you should be aware of.” A 20-year-old Asian female described the use of classes as a venue to talk to students about drug use stating, “someone can come into class for 5 or 10 min to talk about it.” Another 22-year-old Asian female reported several ways to enhance and extend students’ awareness using statistics to convey drug use and comparing prescription drugs to other drugs such as cocaine or heroin. Other methods were informing students of consequences of drug use and promoting healthier habits, for instance, “mental health and yoga.”

In response to questions concerning polysubstance use, the responses from student participants were noteworthy. The use of alcohol and marijuana was suggested substances used simultaneously with prescription drugs. In reference to attention deficit hyperactivity disorder medications, a 20-year-old Asian female participant expressed that college students, “usually down it with alcohol, you can down it with anything but they usually down it with alcohol.” A 22-year-old Asian female summarized the use of marijuana and OxyContin, “I just heard people say they mix them together, they said that it makes it better.” Students who are prescribed medications unintentionally could combine substances by consuming alcohol 3-5 h after ingesting medications described by a male participant as “naturally mixing.” Other drugs such as cocaine and marijuana were frequently mentioned as substances used with prescription drugs at parties or concerts.

DISCUSSION

According to the participants, students and peers engage in the NMUPD to enhance academic performance, socialize, and relieve stress. Minority students revealed several sources for obtaining prescription drugs including friends and the use of previously prescribed drugs (i.e., “leftover”) that were saved for other purposes. The use of qualitative methods in this study provided an in-depth exploration of NMUPD among minority students; a population that is underrepresented in many larger studies [4,20,25]. The ideas for improving existing prevention and educational messages on college campuses that have the potential to improve knowledge and health. Thus, this study contributes to existing literature by addressing several factors associated with NMPUD among college students and highlights the perceptions of misuse among minority students.

Over 60% of students participating in the current study revealed that stimulants improved several tasks (i.e., concentration and focus) to improve academic performance. The motives discussed may be a characteristic of demanding universities and programs where pressure to perform are more likely to be observed academically. The findings were consistent with previous literature that examined college students’ motives for NMUPD [12,17]. Similar to our findings, a quantitative study conducted among college students found that stimulants were primarily used for studying for examinations periods such as

midterms and finals [16]. In addition to the non-medical use of stimulants, several students discussed the use of opioids and depressants (i.e., OxyContin, Xanax) to reduce stress or anxiety caused by academic coursework. These findings contribute to the potential development of prevention and intervention programming at the university level. Highlighting the differences in the motives for misuse different types of prescription drugs among college students’ is essential to tailoring invention programs. Further, prevention strategies should target specific times during the academic school year when NMUPD rates are disproportionately high such as during examination weeks.

Multiple minority participants revealed sources for obtaining prescription medications for non-medical use. These findings were similar to previous studies, which have found college students obtain prescription drugs from parents and peers [20,22]. Other research has found that black market sources are a frequently used avenue to obtain drugs [21]. Furthermore, the findings from this study differed from those of previous studies [15-17], as additional insights about how students obtained prescription medications from peers were revealed. Thus, this study provided necessary information on the diversion of prescription medications from individuals who obtained prescription drugs from a medical professional to individuals who use them for non-medical purposes. An increased effort is needed to educate college students about using prescription drugs as prescribed in addition to the legal ramifications associated with sharing or selling prescription drugs.

Alarming, several students within this sample discussed polysubstance use involving alcohol and prescription medications among college students, which is consistent with findings from other studies [5,14]. However, minority students also revealed that the NMUPD and marijuana are substances that are regularly mixed together for recreational purposes. This can be dangerous as prescription drugs may enhance or change the mood-altering impact of marijuana use. In addition, polysubstance use can pose health-related risks due to the potential increase in risky behaviors by young adults [5]. It is not surprising that alcohol and marijuana are substances used in conjunction with prescription medications due to the individual prevalence of these substances among college students. For instance, Arria *et al.* [24] found that by the second year in college, roughly all students were exposed and had the opportunity to try alcohol and marijuana, whereas nearly 50% had the opportunity to try prescription stimulants.

Minority students were informed about some of the dangers of misuse of medications, and they often underestimated the risks of misuse of these drugs. Similar to previous research, students felt that NMUPD was safer than using other illicit substances [23,25]. Further, involvement of students in the development of prevention strategies could effectively increase students’ awareness of drugs, surroundings, and knowledge concerning the dangers associated with NMUPD and mixing substances. College campuses should consider NMUPD

campaigns utilizing social media platforms (i.e., Twitter and Instagram) that would reach all students campuswide. More importantly, campus organizations led by students that address NMUPD, and other drug uses were highly favored among students.

Limitations

Although this study had several strengths, interpretations of our findings are restricted due to several limitations. Utilizing qualitative interview methods is accompanied by certain limitations. Due to the relatively small sample size of this study and being conducted at one university, the results may not be generalizable and represent the perceptions and attitudes of all minority students at different universities. However, saturation of themes and information provided by students were reached with the 22 students who participated in interviews. In addition, this study targeted students in the general population and did not specifically aim for students who previously or currently used prescription drugs for non-medical use. The future studies recruiting students who have engaged in NMUPD will yield more information to inform interventions to reduce NMUPD on campuses. Finally, the use of an interview guide and probes could have influenced participants' responses, resulting in answers that were socially desirable. Conversely, additional probing could have yielded more information concerning interventions and health messages provided by students.

CONCLUSION

This study demonstrates that minority students' perceptions concerning NMUPD are valuable and can further aid prevention strategies at the collegiate level. Minority college students from this study provided valuable insight concerning the methods students undertake in obtaining prescription drugs, along with suggestions to increase knowledge and awareness among college students, specifically minorities. This study contributes to a growing body of literature surrounding the NMUPD among minority students.

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