

Considering the Non-Medical Use of Prescription Stimulants on College Campuses: Implications for Prevention

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For today....

- Big thanks to Karen Miller and Eric Davidson
- Explore factors surrounding non-medical use of prescription stimulants
- Discuss prevention implications and opportunities

Non-medical use of prescription drugs...

Rates of Use

• Past year rates from Monitoring the Future (Schulenberg, et al., 2017):

- Adderall: 9.9%
- Amphetamines: 9.8%
- Tranquilizers: 4.9%
- Ritalin: 2.4%
- Sedatives: 2.1%
- Oxycontin: 1.9%
- Vicodin: 1.3%

Prescription Drugs

• The most commonly used drugs fall into three classes

- Opioids
 - for pain...things like codeine, OxyContin, Vicodin, etc.
- CNS depressants
 - for anxiety and sleep...things like Valium, Xanax, etc.
- Stimulants
 - for ADHD or narcolepsy... things like Adderall or Ritalin

Prescription Drugs

• Opioids

- Effects of short-term use
 - Alleviates pain
 - Drowsiness
 - Constipation
 - Depressed respiration (dose-dependent)
- Effects of long-term use
 - Potential for physical dependence and addiction
- Possible negative effects.
 - Severe respiratory depression or death following a large single dose



Prescription Drugs

- **CNS Depressants**



- Effects of short-term use
 - A sleepy and uncoordinated feeling
- Effects of long-term use
 - Potential for physical dependence and addiction
- Possible negative effects
 - Seizures following a rebound in brain activity after reducing or discontinuing use

Prescription Drugs

- **Stimulants**



- Effects of short-term use
 - Elevated blood pressure
 - Increased heart rate
 - Increased respiration
 - Suppressed appetite
 - Sleep deprivation

Prescription Drugs



- **Stimulants**

- Effects of long-term use
 - Potential for physical dependence and addiction
- Possible negative effects
 - Dangerously high temperatures or an irregular heartbeat after taking high doses
 - Cardiovascular failure or lethal seizures
 - For some stimulants, hostility or feelings of paranoia after taking high doses repeatedly over a short period of time

Personalized Health Assessment Related to Medication (PHARM):

• Thank you to...

- NASPA
 - Amelia Parnell
 - Stephanie Gordon
 - Brian Sponsler
 - David Arnold
- CPAMM
- Our partnering institutions
- Jeff Linkenbach, The Montana Institute
- UW PHARM Team
 - Nicole Fossos-Wong
 - Irene Geisner
 - Jack Yeh
 - Mary Larimer



Collecting the data

- Partnered with 7 colleges/universities
- During 2015-2016 academic year, received random sample of students from Registrar at each school
- Email to students from each institution before survey launch announcing partnership and survey
- Sent email invitations to complete online survey
- Reminder emails were sent during recruitment time period designated by each school



The sample

- n=2,989 undergraduates between 18-25 years of age
- Average age: 20.34 years
- Gender identity
 - 60.3% Female
 - 38.2% Male
 - 1.3% Gender identity not listed here
 - 0.2% Transgender
- Class Standing
 - 20.2% Freshman
 - 22.1% Sophomore
 - 29.2% Junior
 - 28.5% Senior



The sample

- **Ethnic background**
 - 90.1% Non-Hispanic/Non-Latino/a
 - 9.9% Hispanic Latino/a
- **Racial background**
 - 65.5% White/Caucasian
 - 20.3% Asian/Asian American
 - 6.3% More than one race
 - 4.3% Black/African American
 - 2.9% Other
 - 0.4% Native Hawaiian/Other Pacific Islander
 - 0.3% Alaskan Native/American Indian



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The sample

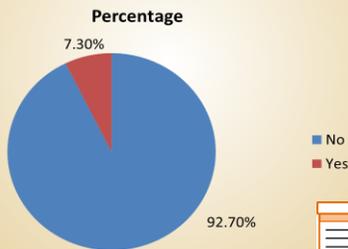
- **Cumulative GPA: 3.39**
- **Previous quarter's/semester's GPA: 3.42**
- **Residence**
 - 41.9% Apartment/house/residence hall off-campus
 - 34.0% On-campus/school residence hall
 - 11.6% At home, with my parents
 - 9.3% Fraternity/sorority
 - 2.2% Off-campus residence hall owned by the college
 - 1.0% Somewhere else



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ADHD current or past diagnosis

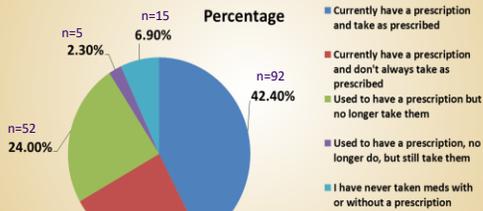
“Do you currently or have you ever had a diagnosis of Attention Deficit Hyperactivity Disorder (ADHD)?”



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Of the 217 students with a past or current diagnosis of ADHD...

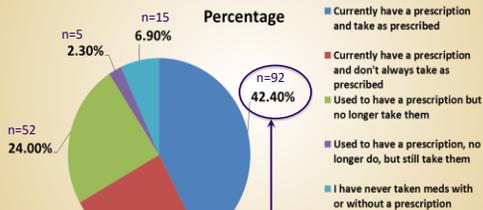
"Please describe your use of ADHD prescription stimulant medications (including Ritalin, Dexedrine, Adderall, Concerta, methylphenidate):



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Of the 217 students with a past or current diagnosis of ADHD...

"Please describe your use of ADHD prescription stimulant medications (including Ritalin, Dexedrine, Adderall, Concerta, methylphenidate):



Of the 145 with a current prescription, 63.4% always take as prescribed



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Diversion

(n=193 with valid data who ever had a prescription)

- "On how many occasions in the past year have you been approached by a friend or other student asking to have or buy some of your ADHD prescription stimulant medication?"
 - 39.9% 0 times
 - 8.3% 1 time
 - 11.4% 2 times
 - 7.3% 3 times
 - 2.6% 4 times
 - 5.7% 5 times
 - 13.5% 6-10 times
 - 5.2% 11-20 times
 - 6.2% More than 20 times



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Diversion

- “Did you feel pressured to do so even though you didn’t want to?” (n=145 participants with a current prescription, whether they’ve been approached or not)
 - 74.3% No
 - 25.7% Yes
- “Did you feel pressured to do so even though you didn’t want to?” (n=116 participants who (a) have had a past or current prescription and (b) were approached by someone in the past year)
 - 64.7% No
 - 35.3% Yes



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Diversion

- “Do you want these friends to get help if they need it by seeing a doctor for diagnosis and/or treatment?” (n=145 participants with a current prescription, whether they’ve been approached or not)
 - 26.5% No
 - 73.5% Yes
- “Do you want these friends to get help if they need it by seeing a doctor for diagnosis and/or treatment?” (n=116 participants who (a) have had a past or current prescription and (b) were approached by someone in the past year)
 - 29.3% No
 - 70.7% Yes



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Past 12 month non-medical use

- “In the past 12 months, on how many days have you used an ADHD prescription stimulant non-medically?”
 - 82.8% 0 times
 - 3.3% 1 time
 - 3.1% 2 times
 - 1.9% 3 times
 - 1.3% 4 times
 - 3.3% 5-10 times
 - 2.1% 11-20 times
 - 1.5% 21-40 times
 - 0.8% 41-300 times



This is a low frequency behavior: 55.4% of the students with any non-medical use in the past 12 months did it 1 to 4 times



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Normative misperceptions

- Although most (82.8%) students have not used stimulants for non-medical reasons in the past year, the perception is that non-medical use is much higher
 - Actual rate: 17.2%
 - Perceived rate: 30.0% (range is 0% to 98%)
 - 21% of students think half or more of the undergrads on their campus use at least once per year



A sample of potential high-risk groups

Non-medical use by Greek status

- Non-fraternity and non-sorority members (n=2,135)
 - Past year non-medical use of prescription stimulants: 12.9%
- Greek System fraternity and sorority members (n=598)
 - Past year non-medical use of prescription stimulants: 32.4%



Non-medical use by major, excluding any majors with less than 75 people (i.e., only including majors with at least 2.5% of the sample or higher)

• Communications, Advertising, & Public Relations (n=75)	22.7%
• Business (n=328)	20.1%
• Social Sciences (n=165)	18.8%
• Psychology (n=201)	18.4%
-----OVERALL PREVALENCE OF 17.2%-----	
• Computer and Information Sciences (n=157)	17.2%
• Biological and Biomedical Sciences (n=353)	17.0%
• Other (n=288)	17.0%
• Health Professions and Related Programs (n=198)	15.7%
• Physical Sciences & Science Technologies (n=75)	14.7%
• Nursing (n=77)	13.0%
• Engineering & Engineering Technologies (n=271)	12.2%

Relationship to academics

Motives for use over past six months (among those with use over the past six months)

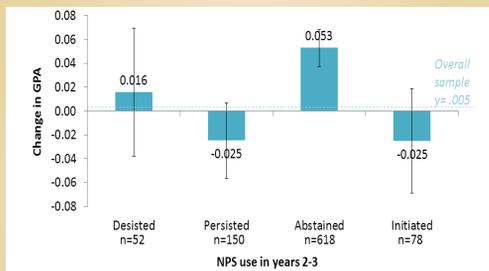
- Percentage endorsing "sometimes/half the time," "often/most of the time," or "always/almost always"
 - 54.0% To concentrate better while studying
 - 52.8% To be able to study longer
 - 35.0% To feel less restless while studying
 - 28.9% Because it helps increase my alertness
 - 18.7% To concentrate better in class
 - 13.9% To keep better track of assignments
 - 11.2% To feel less restless in class
 - 10.7% To feel better
 - 9.4% To prevent others from having an academic edge
 - 9.1% To get high
 - 8.6% To prolong the intoxicating effects of alcohol/substances
 - 8.6% Curiosity and experimentation
 - 6.4% Because it is safer than street drugs
 - 5.9% To lose weight
 - 5.1% Other
 - 4.3% To counteract the effects of other drugs
 - 2.1% Because I'm addicted



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Arria, A.M., Caldeira, K.M., Vincent, K.B., O'Grady, K.E., Cimini, M.D., Geisner, I.M., Fossos-Wong, N., Kilmer, J.R., Larimer, M.E. (2017). Do college students improve their grades by using prescription stimulants nonmedically? *Addictive Behaviors*, 65, 245-249.

Marijuana use

- Amelia Arria's model (shown at NASPA AODV plenary in January 2016):



Marijuana Use

- Overall sample:
 - Past year marijuana use: 45.9%
 - Past 30-day marijuana use: 29.6%
- Among those with **no** past year non-medical use of prescription stimulants:
 - Past year marijuana use: 38.8%
 - Past 30-day marijuana use: 23.0%
- Among those with past year non-medical use of prescription stimulants:
 - Past year marijuana use: 86.0%
 - Past 30-day marijuana use: 66.2%



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Skipping Class

- Among those with **no** past year non-medical use of prescription stimulants:
 - % skipping at least one class: 34.9%
 - Of those with at least 1 skipped class, % reporting they skipped because of use of alcohol/other substances: 8.9%
- Among those with past year non-medical use of prescription stimulants:
 - % skipping at least one class: 54.1%
 - Of those with at least 1 skipped class, % reporting they skipped because of use of alcohol/other substances: 39.6%



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Relationship to alcohol use

Heavy Episodic Alcohol Use

(4+ drinks at least once in past 30 days for women, 5+ drinks at least once in past 30 days for men)

- Among those with **no** past year non-medical use of prescription stimulants:
 - Women (4+ drinks at least once in past 30 days): 47.1%
 - Men (5+ drinks at least once in past 30 days): 47.0%
- Among those with past year non-medical use of prescription stimulants:
 - Women (4+ drinks at least once in past 30 days): 88.4%
 - Men (5+ drinks at least once in past 30 days): 85.6%



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*Exploring possible normative messages:
Focus Groups*

Focus Groups

- Groups were conducted at 4 of the 7 colleges
- A total of 70 students participated in 11 focus groups
 - 44 women
 - 26 men
- Met with available administrators/staff at each site during visit



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Focus Groups

- **Group content:**
 - Solicited input on what students liked, didn't like, ways to make messages better, & ideas for new messages
 - Asked for focus on message content, rather than graphical display and presentation
 - Students were shown potential taglines/messages and provided their input, feedback, and suggestions
- **Based on student feedback, content was changed after every group**



Norms Clarification

- **Examines people's perceptions about:**
 - **Injunctive Norms:**
 - Attitudes
 - Acceptability of behaviors
 - **Descriptive norms**
 - Perceptions about the prevalence of substance use among peers
 - Perception about the rate of substance use by peers



Descriptive Norms

Describing rates of non-medical use of prescription stimulants

Sticking with naps and coffee?
 So are your classmates – **83%** of _____ students have **not taken** prescription stimulants that were not prescribed to them.



Data are based on past 12-month non-medical use of prescription stimulants and come from a 2016 study of 2,989 college students

83% of _____ students have not taken prescription stimulants that were not prescribed to them.

Here's what **other college undergrads** suggested as tips to boost your focus:

- Talk to people
- Exercise
- Study in a group
- Take a power nap
- Break up your studying in pieces
- Treat yourself after each piece
- Take a 15 minute break



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Describing rates of appropriate medical use of prescription stimulants

Follow the “script.”

Most (63.4%) ___ students with a valid prescription **always** take their medication as prescribed.



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Discussion of harms/experiences/effects

Educate before you medicate.*

Most (83%) _____ students have **not taken** prescription stimulants that were not prescribed to them.

Of those who have, **80%** of students experienced at least one or more potentially unwanted/undesirable effect, including:

- Sleep difficulties (66.2%)
- Increased heart rate (52.7%)
- Made me irritable (30.6%)
- Headaches (27.1%)
- Stomachaches (22.0%)
- Made me sad (21.2%)
- Dizzy/light-headed (19.3%)
- Irregular heartbeat (18.2%)



Data are based on a 2016 study of 2,989 college students

What goes up must come down...

Most (83%) _____ students have **not taken** prescription stimulants that were not prescribed to them.

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- Irregular heartbeat (18.2%)



Data are based on a 2016 study of 2,989 college students

Injunctive norms



Norms to address diversion

You wouldn't go to a friend for an antibiotic...

74% of ____ students with an ADHD prescription said they'd want friends who are asking for their medication to get help if they need it by seeing a doctor.

Consider the following on-campus resources:

**** CAMPUS SPECIFIC RESOURCES HERE ****



Data are based on past 12-month non-medical use of prescription stimulants and come from a 2016 study of 2,989 college students

Your friend's not a doctor.

74% of ____ students with an ADHD prescription said they'd want friends who are asking for their medication to get help if they need it by seeing a doctor.

Consider the following on-campus resources:

**** CAMPUS SPECIFIC RESOURCES HERE ****



Data are based on past 12-month non-medical use of prescription stimulants and come from a 2016 study of 2,989 college students



Competitive edge? No.

70% of ___ students don't think misusing prescription stimulants will help get better grades.

They are right.

Research shows no increase in GPA when people start or keep taking ADHD prescription stimulants that aren't prescribed to them.



Data are based on past 12-month non-medical use of prescription stimulants and come from a 2016 study of 2,989 college students

Saving your GPA?

Not with these: 

70% of _____ students don't think misusing prescription stimulants will help get better grades.

They are right.

Research shows no increase in GPA when people start or keep taking ADHD prescription stimulants that aren't prescribed to them.



Data are based on past 12-month non-medical use of prescription stimulants and come from a 2016 study of 2,989 college students

Messages that tested well but would need further examination to consider impact

Let's not put friends in this position.

26% of ____ students with a prescription for their ADHD said they felt pressured by friends or classmates to sell/give their medication to others.



Data are based on past 12-month non-medical use of prescription stimulants and come from a 2016 study of 2,989 college students

Under pressure.

26% of ____ students with a prescription for their ADHD said they felt pressured by friends or classmates to sell/give their medication to others.



Data are based on past 12-month non-medical use of prescription stimulants and come from a 2016 study of 2,989 college students

The goal: Take someone else's prescription stimulant and get a paper written

The outcome: Cleaned the kitchen for 8 hours

80% of students who have used an ADHD stimulant medication that wasn't prescribed to them experienced at least one potentially unwanted/unintended side effect

It might not be what you expected...



Data are based on past 12-month non-medical use of prescription stimulants and come from a 2016 study of 2,989 college students.

Message that tested well but is typically introduced into a well-established social norms campaign

What's "everyone" doing during finals?

Maybe not what you think.

____ Students believe 30% of their ____ classmates have used an ADHD stimulant medication not prescribed to them at least once in the past year.

Only 17% have done so.



Data are based on past 12-month non-medical use of prescription stimulants and come from a 2016 study of 2,989 college students.



Next steps

Next steps

- Opportunity for campuses that participated to work with CPAMM to develop school-specific norms-based campaign
- Test impact of school-specific reference group vs. "college students" if we want to inform prevention efforts across the country



Next steps

- Partner with BACCHUS Initiatives of NASPA to implement content in peer-delivered programs
 - Peers could address...
 - Normative misperceptions
 - Skills-training related to time management and study skills
 - Promotion of on-campus resources for those who could benefit from support
 - Co-occurring alcohol and/or marijuana use
- If any new content is used as part of a prevention campaign, evaluate as best as possible



Next steps

- Utilize and evaluate normative statements/messages in personalized feedback interventions
 - U01 with Irene Geisner, Jason Kilmer, Mary Larimer, Amelia Arria, and Dolores Cimini
- Further examine impact of marijuana use (i.e., if marijuana use decreases, will non-medical use of stimulants decrease)?



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On your campus...

- Collect data to monitor rates of medical misuse, non-medical use, and diversion
- Consider prescription practices on or near campus (e.g., implications from Sean McCabe's research)
- Examine motives for use and consider ways to connect students to healthy, substance-free alternatives for achieving those
- Keep in mind that what you do could/should be a complement to other prevention efforts, not in lieu of these approaches



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- IHEC
- NASPA
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