Yours and Mine: Adolescents Misuse Controlled Medications.

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Schools:
We thank the staff, parents, and students of the schools involved in this study
Conflict of Interest

No Conflict of Interest to Report
Objectives

- Briefly characterize the prevalence and trends in adolescents’ medical misuse, nonmedical use & diversion of scheduled medications (e.g. opioid analgesics, stimulants, sedative/anxiolytics).

- Identify the limitations of the current epidemiological studies relative to their measures of nonmedical use (e.g. NSDUH, NESARC, MTF).

- Review data from 6 studies and differentiate among the sub-types of medical & nonmedical users.
Coming to Terms...
What will we call it?

The terms:
1. prescription drug abuse
2. prescription drug misuse
3. nonmedical use of prescription medication
4. extra medical use
5. medical misuse

There is little consistency in the literature but all terms are directed at scheduled medications.
National Studies

• The *National Survey on Drug Use and Health (NSDUH)*, *Monitoring the Future (MTF)* and, *National Epidemiologic Survey on Alcohol and Related Conditions (NESARC)* are the three largest national studies focused on substance abuse; they rely on different survey questions to assess what people refer to as *prescription drug abuse*.
  • MTF stipulates it was taken without a doctor’s order.
  • NSDUH stipulates that the medication was not prescribed or only taken for the experience or feeling it caused.
  • NESARC adds that it was taken in greater amounts, more often or longer than prescribed.

• The MTF, NSDUH and NESARC surveys fail to distinguish between people who self-treat with their own medications versus those who use to get high or create an altered state.
Is it Mine or Yours?

Usually two distinctive groups are included in the studies:

- Those misusing own scheduled medications
- Those misusing someone else’s scheduled medicine.
  - This group usually involves two felonies
BACKGROUND
National Data

- National Survey on Drug Use and Health (SAMHSA)
  - Nonmedical use of prescription medications
    - U.S. population (lifetime = 20.4% and past year = 6.3%)
    - 12-17 years old (lifetime = 10.6% and past year = 7.4%)
    - 18-25 years old (lifetime = 28.7% and past year = 14.3%)
    - 26+ years old (lifetime = 20.1% and past year = 4.8%)

- Two classes that are of concern because of prevalence rates are: opioid analgesics and stimulant medications.
  - These drug classes will be my primary focus today

- Adolescents often engage in poly-pill use and the risk of injury, overdose and death is high with poly-substance use, particularly when mixing CNS depressants.
Main Reason for Using a Prescription Drug (without a prescription)

- To Help Me Relax: 18%
- To Have Fun: 16%
- Because Being High Feels Good: 14%
- To Help Me Forget My Troubles: 13%
- To Deal with Pressures and Stress of School: 11%
- My Friends Are Using: 11%
- To Help Deal with Problems at Home: 8%
- To Feel Better About Myself: 8%
- To Look Cool: 6%
- It's a Habit, I Can't Stop: 4%

N=3884 US High School Reporting Lifetime Use of Rx drugs w/o a prescription the last
time you used it.


12
Percentage of U.S. Youths Reporting How Long It Would Take Them to Get to Drugs in 2012

<table>
<thead>
<tr>
<th>Drug</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol</td>
<td>50</td>
</tr>
<tr>
<td>Cigarettes</td>
<td>31</td>
</tr>
<tr>
<td>Prescription Drugs</td>
<td>19</td>
</tr>
<tr>
<td>Marijuana</td>
<td>34</td>
</tr>
</tbody>
</table>

Within a Day or Less: 50%
Within a Week or Longer: 31%
Would Be Unable to Get: 14%
Don't Know/No Response: 6%

N=1,003 youth ages 12 to 17 years

NOTES: Data are from a random sample of households in the 48 continental states who had a person ages 12 to 17 living in the household. Computer-assisted telephone interviews were conducted between April 18 and May 17, 2012 with 1,003 youths who were randomly selected from the nationally representative household sample frame. The margin of error is +/-3.1 percent at a 95 percent confidence level (unadjusted for weighting).

Source of Misused Prescription Opioids
Grade 12 Students Using in Past Year

Key Definitions

• **Medical misuse of controlled medications (prescription drugs):**
  • use of scheduled medications (II-V) by the person (and for the purpose) intended by the prescribing clinician; however, the medication is:
    • NOT used in the prescribed dose and/or not taken within a prescribed time interval.

• **Nonmedical use of controlled medications (prescription drugs):**
  • use of scheduled medications (II-V) by people other than what the prescribing clinician intended.

• **Diversion of controlled medications (prescription drugs):**
  • exchange of scheduled medications (II-V) that leads to the use of these:
    • by people other than whom the prescribing clinician intended or
    • under conditions associated with “doctor shopping” or misrepresentation
    • by theft or drug dealing.
DA018272 (PI: Boyd), DA024678 (PI: Boyd)
DA018239 ,DA019492, DA 031160 (PI: McCabe)

REVIEW OF 6 STUDIES
## Subtypes

<table>
<thead>
<tr>
<th>NONMEDICAL USE</th>
<th>MEDICAL MISUSE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person <strong>does not</strong> possess legal prescription</td>
<td>Person <strong>does</strong> possess legal prescription</td>
</tr>
</tbody>
</table>

**Sensation-seeking:**
get high, experiment, or create altered state (w/ someone else’s meds)

**Self-treating:**
self-treat symptoms of actual or perceived health condition (w/ someone else’s meds)

**Sensation-seeking:**
get high, experiment, or create altered state (w/ own meds)

**Self-treating:**
self-treat symptoms of actual or perceived health condition (w/ own meds)

Study Design: Mixed Method

- **3 public high schools** and **2 public middle schools** located in two communities in southeastern Michigan.

- The *Secondary Student Life Survey* (SSLS) was administered to all the students (7th – 12th grade) during the 2009-10, 2010-11, 2011-12 school years.

- The SSLS is a web-based survey administered to students on during school hours.

- Longitudinal sample created from cross-section.

- Panel cohort of 7th and 8th graders and their parents.

- The SSLS takes approximately 25-35 minutes.

- Includes standardized and/or valid measures (e.g. MTF, CRAFFT and DAST 10).

- Four waves of data, three will be included in these studies.
Procedure

- This study is part of a larger, mixed-method longitudinal study that has a Certificate of Confidentiality from NIH.
  - We administer annual web-based surveys for cross-sectional data;
  - We follow a panel of 1500 who have completed four surveys;
  - We interview a 7th-8th grade cohort (N=500) twice a year, and survey their parents once/year.

- These data reported here were collected over three, five month periods between December 2009 and April 2012.

- The Secondary Student Life Survey (SSLS) was administered via the web during one class period.
  - Computers were hooded
District 1

- **School District 1:** (1 high school and 1 middle school)

- Stable middle-class community (Census)
  - Median household income of $66,304 ($48,669 for all of Michigan).
  - 3.1% unemployment rate (7.7% for all of Michigan).
  - 3.5% of families living below the poverty line (11.1% for all of Michigan).

- School Characteristics (CCD)
  - The two schools from Salberg have 8% of the student body eligible for free or reduced price lunches.
  - 90% of the students who attended the two schools from Salberg are classified as White.
  - Both schools are considered low poverty schools (i.e. have below 25% of students eligible for free or reduced price lunches).
District 2

- **School District 2**: (1 high schools; 1 middle school; 1 grant supported charter school for Detroit students).

- Working-class community (Census)
  - Median household income of $50,174 ($48,669 for all of Michigan)
  - 8.1% unemployment rate (7.7% for all of Michigan)
  - 8.5% of families living below the poverty line (11.1% for all of Michigan)

- School Characteristics (CCD)
  - The three schools from Fernridge have roughly 67.5% of the student body eligible for free or reduced price lunches.
  - Approximately 70% of the students who attended the three schools from Fernberg are classified as Black.
  - All three schools are classified as mid-high poverty schools (i.e. have between 51% and 75% of the student body eligible for free or reduced price lunches).

*pseudonym*
Sample Characteristics Across the Three Waves

- **Sex**
  - 49.8% male
  - 50.2% female

- **Grade**
  - 14% 7th grade (12 years old)
  - 16% 8th grade (13 years old)
  - 19% 9th grade (14 years old)
  - 18% 10th grade (15 years old)
  - 17% 11th grade (16 years old)
  - 16% 12th grade (17 years old)

- **Race**
  - 64% White
  - 30% Black
  - 2% Hispanic
  - 3% Asian
  - 1% Other Race
Sample Sizes and Response Rates

Population versus Responders

- **2009-10 school year**
  - Population: 4,445
  - Responders: 2,744
  - Response Rate: 61.7%

- **2010-11 school year**
  - Population: 4,377
  - Responders: 3,072
  - Response Rate: 70.2%

- **2011-12 school year**
  - Population: 4,393
  - Responders: 3,111
  - Response Rate: 70.8%
Measures: Student Life Survey

- **Demographic information** (e.g., sex, race)
- **Health Behavior** (e.g. nutrition)
- **School involvement** (e.g., clubs, athletics)
- **Medical use** (e.g., Stimulant medication (Ritalin®, Dexedrine®, Adderall®, Concerta®, etc…for ADHD))
  - Key characteristics (e.g., diversion, use too much, get high)
- **Nonmedical use** (e.g., Pain medication (Vicodin®, OxyContin®, Percocet®, etc…not prescribed to you))
  - Key characteristics (e.g., motive, co-ingestion, administration route)
- **Drug use related problems** (e.g., DAST-10, CAGE)
- **Diversion** (e.g. selling, loaning, giving away drugs)
- **Problem behaviors** (e.g. gambling, sexual activity, etc.)
Scheduled Medications: ASH, Stimulants & Opioid Analgesics

1) Sleeping medication (e.g., Ambien®, Halcion®, Restoril®, temazepam, triazolam)

2) Sedative/anxiety medication (e.g., Ativan®, Xanax®, Valium®, Klonopin®, diazepam, lorazepam)

3) Stimulant medication (e.g., Ritalin®, Dexedrine®, Adderall®, Concerta®, methylyphenidate)

4) Pain medication (i.e., opioids such as Vicodin®, OxyContin®, Tylenol 3 with codeine®, Percocet®, Darvocet®, morphine, hydrocodone, oxycodone)
“The following questions are about the use of prescribed medicines. We are not interested in your use of over-the-counter medicines that can be bought in drug or grocery stores without a prescription, such as aspirin, Sominex®, Benadryl®, Tylenol PM®, cough medicine, etc. “
On how many occasions in your lifetime (past 12 months) has a doctor, dentist, or nurse prescribed the following types of medicine for you?

(a) Prescribed sleeping medication (e.g., Ambien®, Lunesta®, Restoril®, temazepam, triazolam);

(b) Prescribed anti-anxiety medication (e.g., Ativan®, Xanax®, Valium®, Klonopin®, diazepam, lorazepam);

(c) Prescribed stimulant medication (e.g., Ritalin®, Dexedrine®, Adderall®, Concerta®, methylphenidate);

(d) Prescribed pain medication (e.g., Vicodin®, OxyContin®, Tylenol 3® with codeine, Percocet®, Darvocet®, morphine, hydrocodone, oxycodone).
On how many occasions in your lifetime (past 12 months) have you used the following types of medicine, not prescribed to you?

(a) Prescribed sleeping medication (e.g., Ambien®, Lunesta®, Restoril®, temazepam, triazolam);

(b) Prescribed anti-anxiety medication (e.g., Ativan®, Xanax®, Valium®, Klonopin®, diazepam, lorazepam);

(c) Prescribed stimulant medication (e.g., Ritalin®, Dexedrine®, Adderall®, Concerta®, methylphenidate);

(d) Prescribed pain medication (e.g., Vicodin®, OxyContin®, Tylenol 3® with codeine, Percocet®, Darvocet®, morphine, hydrocodone, oxycodone).
Measures: Diversion (4 Questions)

“On how many occasions (if any) in your lifetime have you ever... 1) ...sold any of your prescription medication to someone?” 2) “...given or loaned your prescription medication to someone?” 3) “…traded your prescription medication for something else (e.g., other medications, other drugs, clothes, etc.)? 4) “...been approached to sell, trade, or give away your prescription medication?”

These questions were asked for each of the four drug classes.
General Analyses

- **Past 12-months nonmedical use of prescription medications (NUPM):** A binary variable was created from items asking about frequency of nonmedical use of sleeping, anti-anxiety, stimulant, pain, addiction medication, asthma inhaler and antidepressants.

- **Past 12-months excessive medical use of prescription medications (EXPM):** A binary variable was created indicating if excessive medical use occurred.

- **Alcohol, Tobacco, Marijuana, and Illicit Drug Use** were measured with items from the Monitoring the Future study (Johnston et al., 2012). Participants were asked about their frequency during the past 12 months and binary variables were created.
Generally…

- Girls were more likely to have a prescription for an opioid;
- Girls were more likely to engage in prescription drug abuse to self-treat;
- Girls were more likely to give away medications so as to “help.”

- Boys were more likely to have a prescription for a stimulant;
- Boys were more likely to engage in prescription drug abuse for purposes other than self-treatment (experiment, “get high”);
- Boys were more likely to sell medications.

- Relatively few racial differences, although African American youth were at greater odds of giving away, and not selling.
Study 1

• What is the extent of medical misuse of scheduled medications by adolescents?

• How is misuse associated with other types of substance use behaviors?


DA018272 (PI: Boyd), DA024678 (PI: Boyd)
Medical Misuse

16% had a Controlled Medication Prescribed in the Past Year

Any Medical Misuse
- Any (18% of the sample (n = 468))
- Pain (14.2% of the sample (n = 369))
- Stimulant (3.5% of the sample (n = 91))
- Sleeping (1.6% of the sample (n = 41))
- Antianxiety (2.2% of the sample (n = 57))

Took Too Much
- 22% (103)
- 20% (74)
- 22% (20)
- 44% (18)
- 30% (17)

Intentionally Got High or Used to Increase Alcohol or Other Drug Effects
- 21% (96)
- 18% (67)
- 22% (20)
- 42% (17)
- 28% (16)

n = 2,957
Substance Use, Medical Use & Medical Misuse

- Past-Month Cigarette Smoking: 26% (26) Medically Misusers, 8% (28) Medical Users, 5% (103) Non Users
- Past 2 week binge drinking: 18% (18) Medically Misusers, 6% (21) Medical Users, 3% (54) Non Users
- Past-Year CRAFFT Positive Screening Result: 36% (36) Medically Misusers, 16% (55) Medical Users, 10% (210) Non Users
- Past-Year Use of Marijuana: 37% (37) Medically Misusers, 15% (52) Medical Users, 10% (198) Non Users
- Past-Year Use of Other Illicit Drugs: 26% (25) Medically Misusers, 4% (13) Medical Users, 1% (30) Non Users
- Past-Year Nonmedical Use of Prescription Medications: 14% (47) Medically Misusers, 5% (111) Medical Users, 5% (97) Non Users
- Past-Year DAST Positive Screening Result: 35% (36) Medically Misusers, 9% (33) Medical Users, 5% (97) Non Users

*p<.001 for all comparisons*
Study 2

• What is the prevalence of diverting controlled medications?

• Is diversion associated with other types of substance abuse behaviors?


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Prevalence of Diversion by Drug Class

- 33% reported having a prescription during their lifetime (n = 848)

- Any Lifetime Prescribed Controlled Medication
- Pain Medication (Lifetime)
- Stimulant Medication (Lifetime)
- Anti-Anxiety Medication (Lifetime)
- Sleeping Medication (Lifetime)

n = 2,625

33% reported having a prescription during their lifetime (n = 848)
Substance Use as a Function of Diversion

- Diverted Prescribed Medications
- Never Diverted Prescribed Medications
- Never Been Prescribed Medications

$p<.05$ for all comparisons

$n = 2,625$
Study 3

• What are the substance use characteristics of nonmedical users of opioid analgesics?

• Who gives nonmedical users their opioid analgesics?


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Motives for Nonmedical Use of Prescription Opioids

Bar chart showing the percentage of respondents who reported different motives for nonmedical use of prescription opioids. The motives include:
- Because it relieves pain
- Because it gives me a high
- Because of experimentation
- Because it helps me sleep
- Because it helps decrease anxiety

The chart includes past-year nonmedical user of opioids, nonmedical user +CRAFFT, and nonmedical user -CRAFFT categories.

Legend:
- **p<.01
- ***p<.001

To Five Motives for Nonmedical Opioid Use
Sources for Nonmedical Use of Opioids and CRAFFT scores

Top Five Diversion Sources

- Given the medicine from a family member (for free) - 29%
- Obtained prescriptions from the medicine from one doctor - 20%
- Given the medicine from a same sex friend (for free) - 17%
- Took the medicine from a family member - 17%
- Given the medicine from an opposite sex friend (for free) - 7%

Past-Year Nonmedical User of Opioids

Nonmedical User +CRAFFT

Nonmedical User -CRAFFT

***p<.001
Does misuse of prescription opioids lead to future misuse and other substance abuse?

McCabe SE, West BT, Boyd CJ. Medical use, medical misuse, and nonmedical use of prescription opioids: Results from a longitudinal study. *Pain*. 2013;154:708-713.

DA018272 (PI: Boyd), DA024678 (PI: Boyd)
## Gender Differences in Past Year Opioid Use

<table>
<thead>
<tr>
<th>Past-year use of prescription opioids in Year 1 (2009-2010)</th>
<th>Overall</th>
<th>Female</th>
<th>Male</th>
<th>Sex difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups:</td>
<td>% (n)</td>
<td>% (n)</td>
<td>% (n)</td>
<td>$\chi^2$ test, df, p-value</td>
</tr>
<tr>
<td>No medical or nonmedical use</td>
<td>83.9% (n = 1,618)</td>
<td>78.0 (n = 757)</td>
<td>90.0 (n = 861)</td>
<td>51.5, df = 1, p &lt; 0.001</td>
</tr>
<tr>
<td>Medical use only</td>
<td>9.1% (n = 175)</td>
<td>12.9 (n = 125)</td>
<td>5.2 (n = 50)</td>
<td>34.2, df = 1, p &lt; 0.001</td>
</tr>
<tr>
<td>Medical misuse only</td>
<td>2.1% (n = 40)</td>
<td>2.4 (n = 23)</td>
<td>1.8 (n = 17)</td>
<td>0.8, df = 1, p = 0.362</td>
</tr>
<tr>
<td>Nonmedical use for pain relief only^a</td>
<td>3.7% (n = 72)</td>
<td>5.3 (n = 51)</td>
<td>2.2 (n = 21)</td>
<td>12.5, df = 1, p &lt; 0.001</td>
</tr>
<tr>
<td>Nonmedical use for non-pain relief^b</td>
<td>1.2% (n = 23)</td>
<td>1.5 (n = 15)</td>
<td>0.8 (n = 8)</td>
<td>2.1, df = 1, p = 0.152</td>
</tr>
</tbody>
</table>
Medical Use, Medical Misuse, and Nonmedical Use of Prescription Opioids Over Time

- Any Past-Year Medical Misuse (time 2): 22% (15)
- Any Past-Year Nonmedical Use For Pain Relief (time 2): 14% (3)
- Any Past-Year Nonmedical Use For Non-Pain Relief (time 2): 9% (2)

p < .01 for all comparisons

n = 2,050
Substance Abuse at Year 2 as a Function of Medical Use, Misuse and Nonmedical Use of Prescription Opioids in Year 1

n = 2,050

- Past-year positive DAST-10 screen (time 2)
- Lifetime positive CRAFFT screen (time 2)
- Past-year other nonmedical drug use (time 2)

***p<.001
All comparisons are made to No Medical or Nonmedical Use
Are there subtypes of nonmedical users of opioid medications?


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<table>
<thead>
<tr>
<th>variable</th>
<th>Function 1a</th>
<th>Function 2b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rule Breaking Behavior</td>
<td>.80*</td>
<td>-.09</td>
</tr>
<tr>
<td>CRAFFT score</td>
<td>.70*</td>
<td>-.05</td>
</tr>
<tr>
<td>Illicit Drug Use</td>
<td>.58*</td>
<td>-.14</td>
</tr>
<tr>
<td>Aggressive Behavior (YSR)</td>
<td>.54*</td>
<td>.07</td>
</tr>
<tr>
<td>Physical Symptoms</td>
<td>.50*</td>
<td>.42</td>
</tr>
<tr>
<td>Marijuana Use</td>
<td>.43*</td>
<td>-.15</td>
</tr>
<tr>
<td>Binge Drinking</td>
<td>.39*</td>
<td>.03</td>
</tr>
<tr>
<td>Withdrawn/Depressed (YSR)</td>
<td>.38*</td>
<td>.30</td>
</tr>
<tr>
<td>Social Victimization</td>
<td>.36*</td>
<td>-.06</td>
</tr>
<tr>
<td>Physical Victimization</td>
<td>.20*</td>
<td>.06</td>
</tr>
<tr>
<td>Somatic Complaints (YSR)</td>
<td>.34</td>
<td>.78*</td>
</tr>
<tr>
<td>Anxious/Depressed (YSR)</td>
<td>.42</td>
<td>.49*</td>
</tr>
<tr>
<td>Sexual Victimization</td>
<td>.17</td>
<td>.25*</td>
</tr>
<tr>
<td>Early Sexual Activity</td>
<td>.23</td>
<td>-.26</td>
</tr>
</tbody>
</table>

Correlations between discriminating variables and discriminant functions (i.e. function 1a and 2b)
Plotting the Group Centroids of Different Types of Users on Function 1a and 2b

Nonusers (n = 2158)
Medical Users (n = 323)
Nonmedical Self-Treaters (n = 70)
Nonmedical Sensation Seekers (n = 66)
In additional analyses:

<table>
<thead>
<tr>
<th>Behavioral Disorders (YSR)</th>
<th>Never Used</th>
<th>Medical Use</th>
<th>Non-med Pain</th>
<th>Non-medical Non-pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective</td>
<td>5.2%</td>
<td>9.9%</td>
<td>8.7%</td>
<td>36.6%</td>
</tr>
<tr>
<td>Anxiety</td>
<td>3.0%</td>
<td>3.9%</td>
<td>3.3%</td>
<td>14.6%</td>
</tr>
<tr>
<td>ADHD</td>
<td>2.5%</td>
<td>2.6%</td>
<td>2.2%</td>
<td>19.5%</td>
</tr>
<tr>
<td>Conduct</td>
<td>3.4%</td>
<td>4.7%</td>
<td>8.7%</td>
<td>46.3%</td>
</tr>
<tr>
<td>Somatic</td>
<td>4.3%</td>
<td>9.3%</td>
<td><strong>41.2%</strong></td>
<td>31.7%</td>
</tr>
</tbody>
</table>

Non-medical sensations seekers were significantly different from other groups at p<.01 based on multi-nomial logistic regression w/ this gp as reference category.
The objective of this descriptive study was to determine adolescents’ access to their own medications at home, specifically prescription pain, stimulant, anti-anxiety, and sedative medications.

Procedure

• Students who began the study in the 7th and 8th grades at Year 1 were interviewed twice a year for four years.
• These adolescents were interviewed in school by a trained researcher;
• They were asked in-depth questions about the medications they had, where they were stored, if they had been asked to divert and if yes, to provide details, etc.
• Their parents completed the Child Behavior Checklist each year.
• Parents and adolescents received Target gift cards as an incentive.
## Sample (Cohort Study)

<table>
<thead>
<tr>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>n= 246 (49%)</td>
<td>Girls n=255 (51%)</td>
</tr>
<tr>
<td>White: 194 (38.7%)</td>
<td>White: 171 (34.1%)</td>
</tr>
<tr>
<td>Black: 52 (10.4%)</td>
<td>Black: 56 (11.2%)</td>
</tr>
<tr>
<td>Other: 9 (1.8%)</td>
<td>Other: 19 (3.8%)</td>
</tr>
<tr>
<td>Mean age: 14.1 years</td>
<td>Mean age: 14 years</td>
</tr>
</tbody>
</table>
Controlled medications (opioids, anxiolytic, stimulants & sedatives)

<table>
<thead>
<tr>
<th></th>
<th>Overall sample</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>57/240 (24.8%)</td>
<td>33/57 (57.9%)</td>
<td>24/57 (42.1%)</td>
</tr>
<tr>
<td>Supervised Storage</td>
<td>7/33 (21.2%)</td>
<td>8/24 (33.3%)</td>
<td></td>
</tr>
<tr>
<td>Unsupervised Storage</td>
<td>26/33 (78.8%)</td>
<td></td>
<td>16/24 (66.7%)</td>
</tr>
</tbody>
</table>

1.05 (df=1) NS

DA018272 (PI: Boyd), DA024678 (PI: Boyd)
We found that …

- Youth did not know the name of their medications, although they knew the purpose;
- Youth had easy access to their medications;
- Even when supervised, access was easy;
- Family members and friends had easy access to the controlled medications (often on kitchen counters, medicine cabinets);
- Girls were more likely to know where medications were stored in their households;
- Youth were often approached to divert their medications.
Summary of Studies 1-6

- Medical misuse is prevalent, highest with sleep and anti-anxiety medications but certainly high with opioids and stimulants. (Study 1)
- Medical misuse is associated with significantly higher rates of SA (Study 1)
- Diversion is associated with substance use and higher scores on screening measures (Study 2).
- Stimulants are most likely drug to be diverted (Study 2).
- Nonmedical users of opioids usually get controlled medications free from family and same-sex friends (Study 3).
- Substance use differs by motivation to use, with using “to get high” or experiment being associated with higher CRAFFT scores and self-treatment with lower scores (Study 3).
- CRAFFT can be used to identify a subgroup of nonmedical users at the highest risk for a substance use disorder as well as a subgroup who would benefit from better pain management. (Study 3)
Summary of Studies 1-6

• Nonmedical use for non-pain relief (e.g. experimentation) at Time 1 is associated with positive CRAFFT scores and 22% continue nonmedical use at Time 2 (Study 4).

• Approximately 1 in 5 nonmedical users of opioids at Time 1 will continue at Time 2, endorsing their motivation as pain relief (Study 4).

• Approximately 1 in 10 medical misusers of opioids at Time 1 will engage in nonmedical use at Time 2, endorsing the motivation as pain relief (Study 4).

• There appear to be subtypes of nonmedical users with self-treaters having somatic complaints, being anxious and depressed and sexual victims (Study 5).
Summary of Studies 1-6

• Approximately 3 out of 4 adolescents, recently prescribed medications in controlled categories, reported unsupervised access to them at home. (Study 6)

• Appears to be a need for clinicians to educate adolescent patients and parents about the proper storage, disposal, and supervision of medications with abuse liability. (Study 6)
References Used for this Presentation

For More Information…

THANK YOU...