

Pain, Opioids, and Addiction: An Urgent Problem for Doctors and Patients
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Adolescents' Nonmedical Use of Prescription Opioid Analgesics

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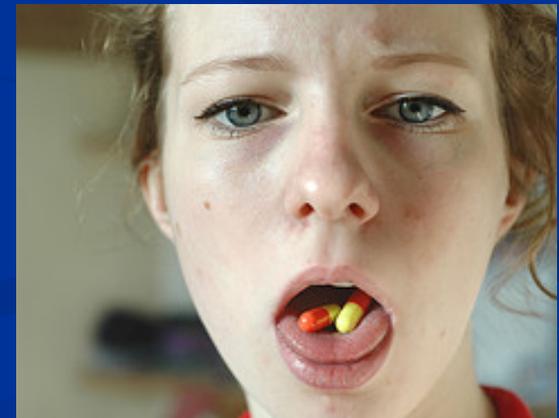
THE PURPOSE

- To consider the conceptual implications of the term *nonmedical use of prescription opioids*
- To review data from four different studies:
 - National Survey on Drug Use and Health (NSDUH);
Monitoring the Future (MTF), Student Life Survey (SLS) and
Secondary Student Life Survey (SSLS)
- To highlight characteristics of adolescent nonmedical users of opioid analgesics
 - Focus on motivation (to use) and diversion (to whom)

THE PROBLEM

- Studies indicate that the nonmedical use of prescription medications is increasing in the U.S. among adolescents and young adults. (See: Johnston et al., 2004, 2005; McCabe, et al., 2007; NSDUH, 2006)
- The nonmedical use of prescription medications is associated with higher rates of tobacco, alcohol and other drug use (See: Boyd, et al, 2004, 2006; McCabe, Boyd, et al 2005, 2006)
- The nonmedical use of opioid medication continues to dominate (See NSDUH, 2005):

5% of 12 to 17 year olds reported nonmedical use of scheduled pain medications*;
12% of 18 to 25 year olds reported nonmedical use of scheduled pain medications*.

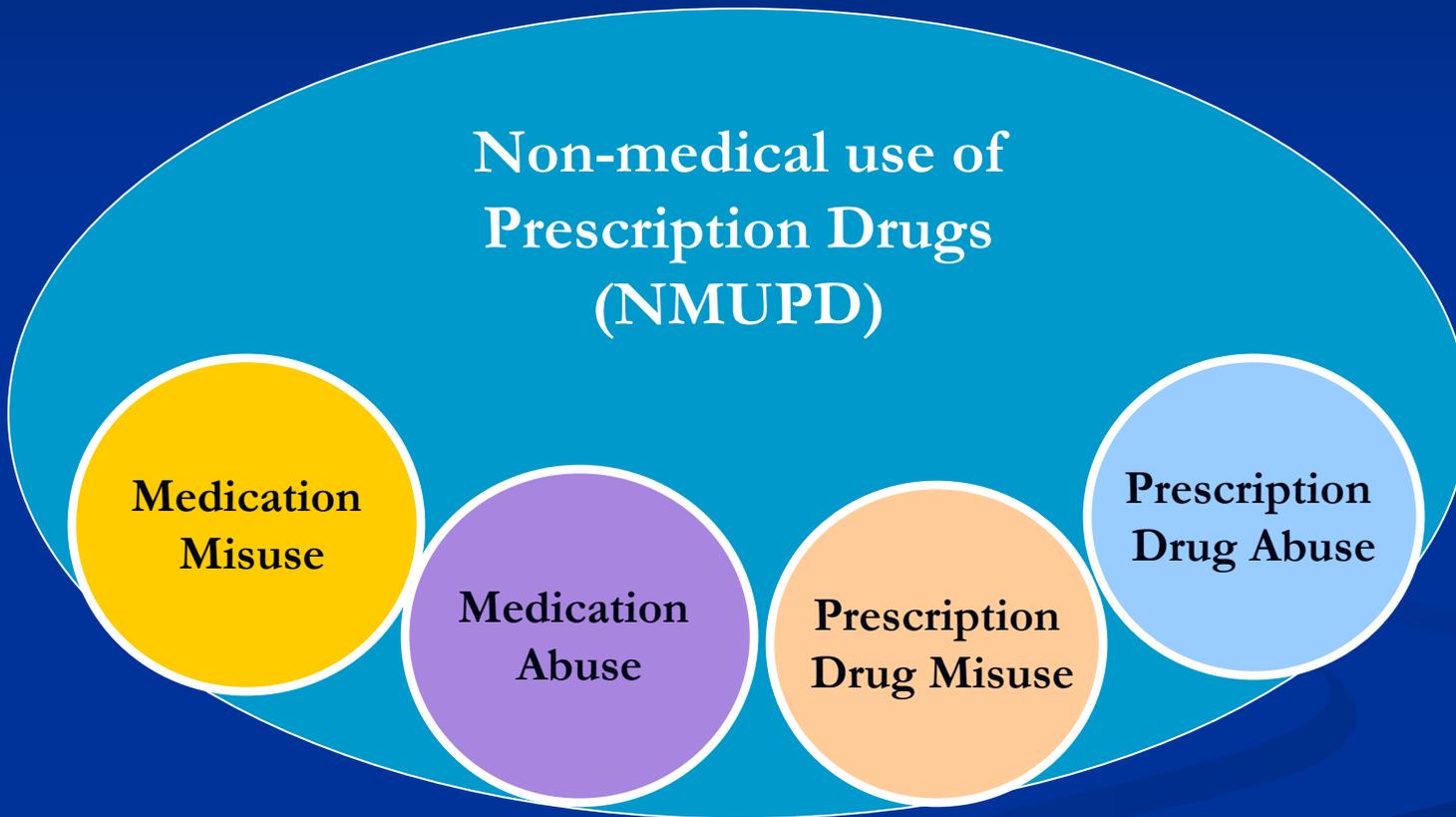


* lifetime

What is ...
**“NONMEDICAL USE OF
PRESCRIPTION OPIOIDS?”**

This is a term that has been used by researchers to include such varied behavior as medication misuse, medication abuse, prescription drug misuse and prescription drug abuse.

CONCEPTUAL CONFUSION



TODAY WE WILL FOCUS ONLY ON PRESCRIPTION DRUG MISUSE AND ABUSE

Prescription Drug Misuse (PDM)

DEFINITION:

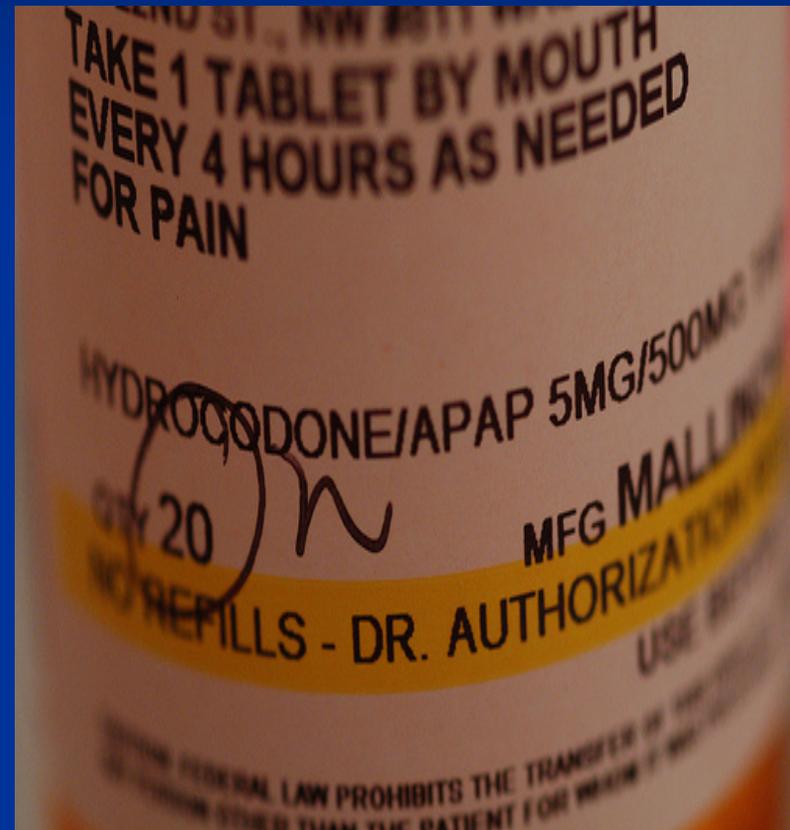
The intentional use of someone else's prescription medication for the purpose of alleviating symptoms that may be related to a health problem.

ATTRIBUTES:

- No legal prescription for the drug
- Use is intentional
- Perceived barriers to medical care (e.g. a prescription is not available to the person)
- Motive is to relieve a condition for which the medication, when prescribed, is generally intended (e.g. pain).

Case Example #1

A 21 year old is working full-time as a line-cook in a restaurant. He slices-off the tip of his finger. The manager* takes the young man (and his fingertip) to the nearest ED; on the drive to the hospital the manager gives him a Vicodin saying, “you will be waiting a long time, you will need this”. He takes the pill. The young man is treated in the ED. The ED physician gives the young man a prescription for Vicodin for pain and tells him to see his primary care provider in one week.**

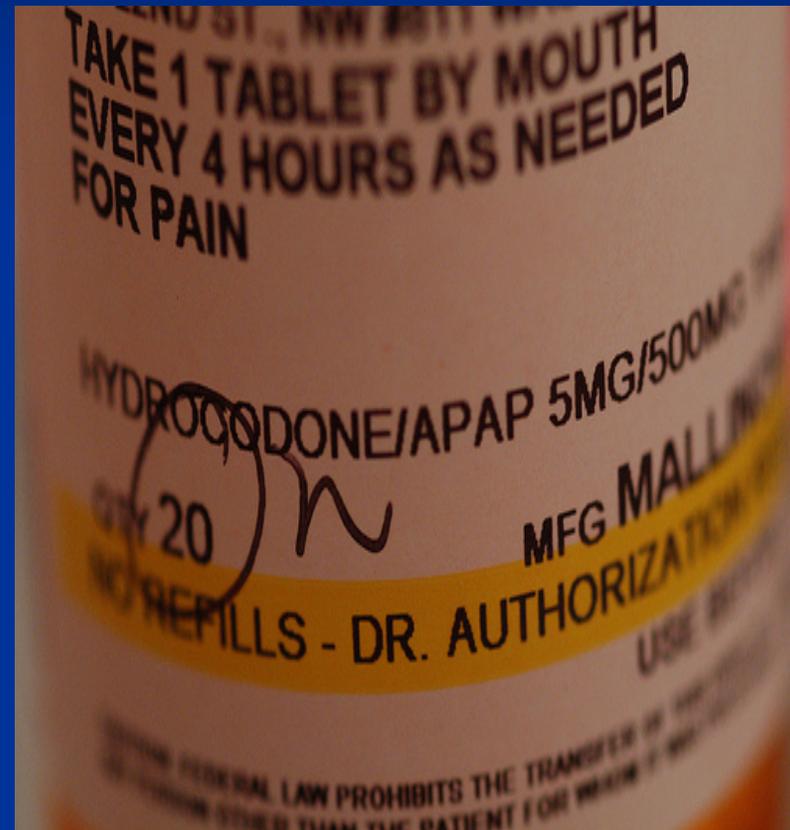


* The manager is engaging in the diversion of a scheduled medication, this is illegal.

**At any point, had the cook taken more than his prescribed dose to relieve pain, this would have been medication misuse; if he had saved his prescribed medication for a later time, then taken it to get a “buzz”, this would be medication abuse.

Case Example #2

On a Friday afternoon, a 16-year-old teen, an honor student, is planning to attend “Homecoming” with her new boyfriend. Four hours before the event, she develops a severe migraine headache. In tears, she asks her mother for help. Her mother gives her a hydrocodone tablet (left over from her own surgery). The teen went to the event and “had a great time.”



Prescription Drug Abuse (PDA)

DEFINITION:

The use of a scheduled prescription medication to experiment, to get high or to create an altered state.

ATTRIBUTES:

- No legal prescription for the drug
- Use is intentional
- May involve use in combination with other drugs
- May involve delivering in a wrongful manner (e.g. IV, skin-popping, snorting or smoking).
- Motive to experiment, get high or to alleviate withdrawal symptoms

Case Example

A 22 year old girl with a history of alcohol abuse is given an oxycodone tablet by a friend; she wants to experiment to see “what it does”. She crushes the pill and snorts it. She continues to purchase the “Oxy” from a friend when she wants to party.



Epidemiological Sources: Adolescents and Young Adults

- National Survey on Drug Use and Health (NSDUH)
- Monitoring the Future (MTF)
- Student Life Survey (SLS)
- Secondary Student Life Survey (SSLS)

NSDUH

- Nationally representative sample (& by State)
- Civilian, non-institutional population, Age 12+
- Face-to-face interview
- Computer-assisted, self-administered
- 68,308 respondents in 2005
- Data comparable with 2002, 2003, and 2004, but not with data prior to 2002

National Survey of Drug Use and Health (NSDUH)

- Survey item:

Have you ever taken medication that was not prescribed for you, or that you took for the experience or feeling it caused?

(includes: any psychotherapeutics, pain relievers, sedatives, stimulants, tranquilizers)

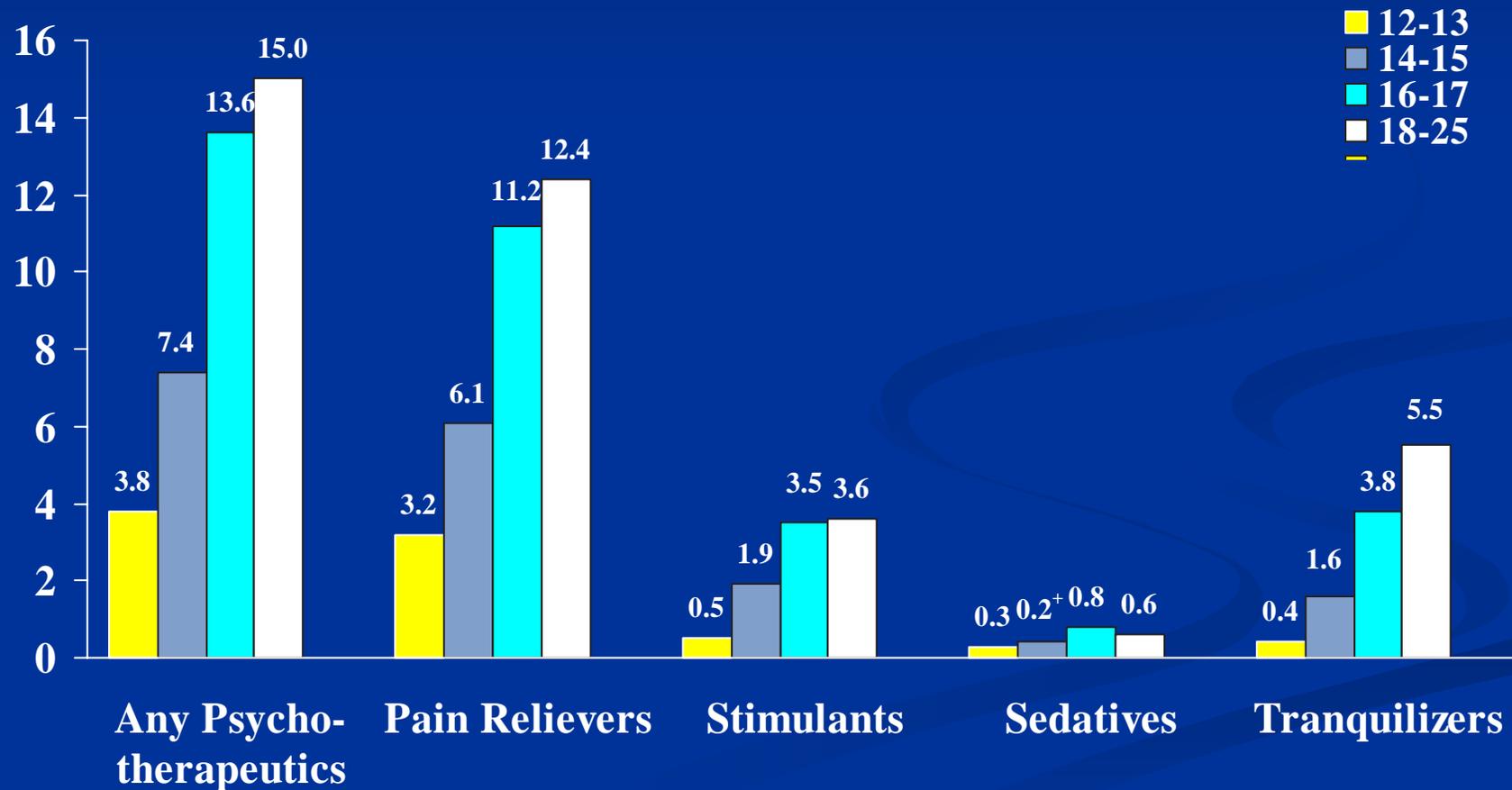
Prescription
Drug
Misuse

Prescription
Drug
Abuse

Medication
Abuse

Nonmedical Use of Prescription Medications, Ages 12-25

Percent Using in Past Year



NSDUH, 2005

Monitoring the Future (MTF)

- Cross-sectional, school-based survey of U.S (embedded panel for college and beyond)
- Middle, high school and college students, began in 1970's
- Nationally representative sample
- Questionnaire format, administered in class and through follow-up mail surveys
- 49, 347 respondents in 2005
- Began asking about specific Rx drugs in 2002

Monitoring the Future

■ Survey Item:

In the past year have you taken amphetamines, narcotics other than heroin, etc.... “without a doctor’s orders?”

(includes: amphetamines, tranquilizers, sedatives, narcotics other than heroin, OxyContin, Vicodin, Ritalin)

Prescription
Drug
Misuse

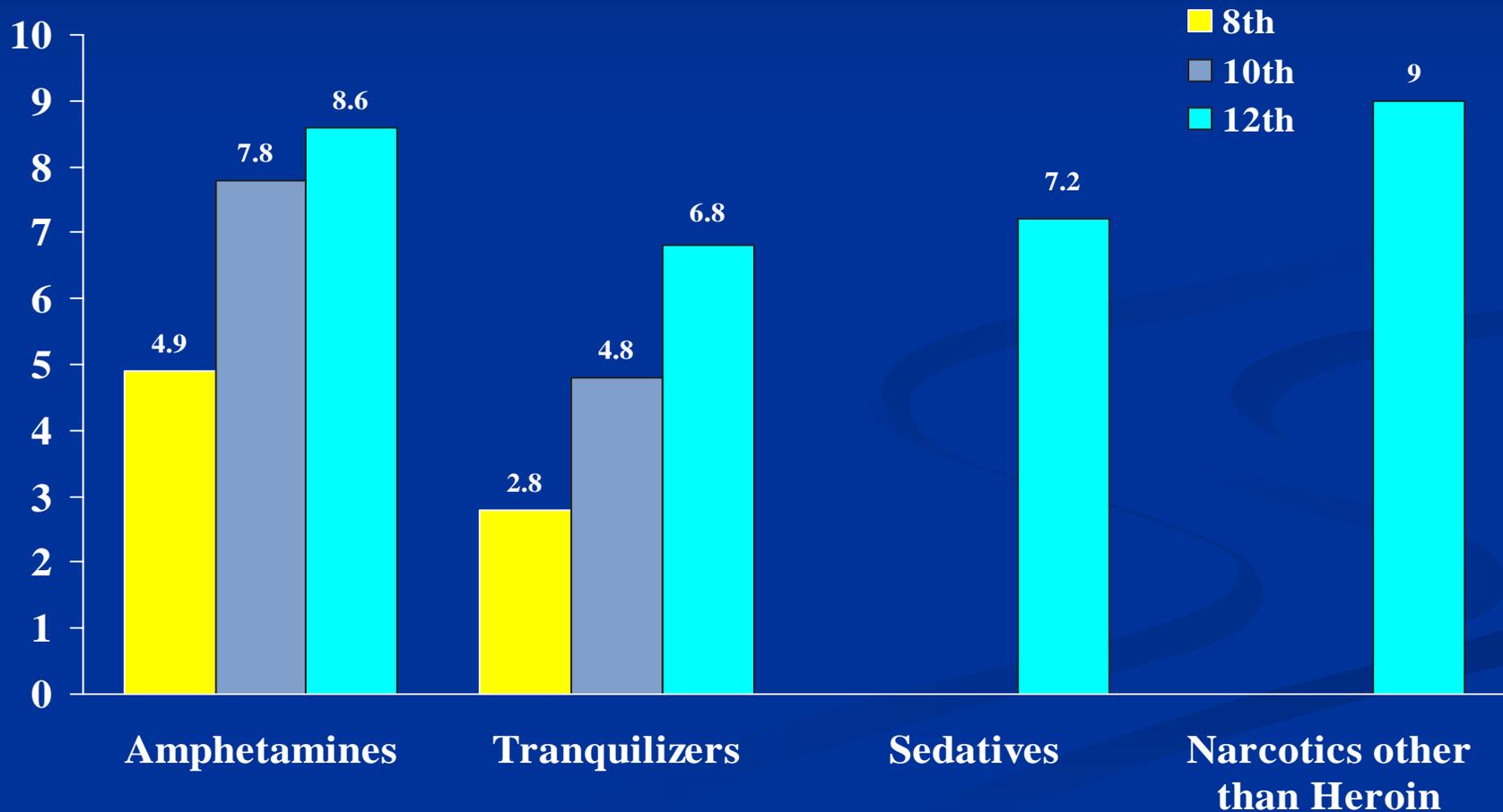
Prescription
Drug
Abuse

Medication
Misuse

Medication
Abuse

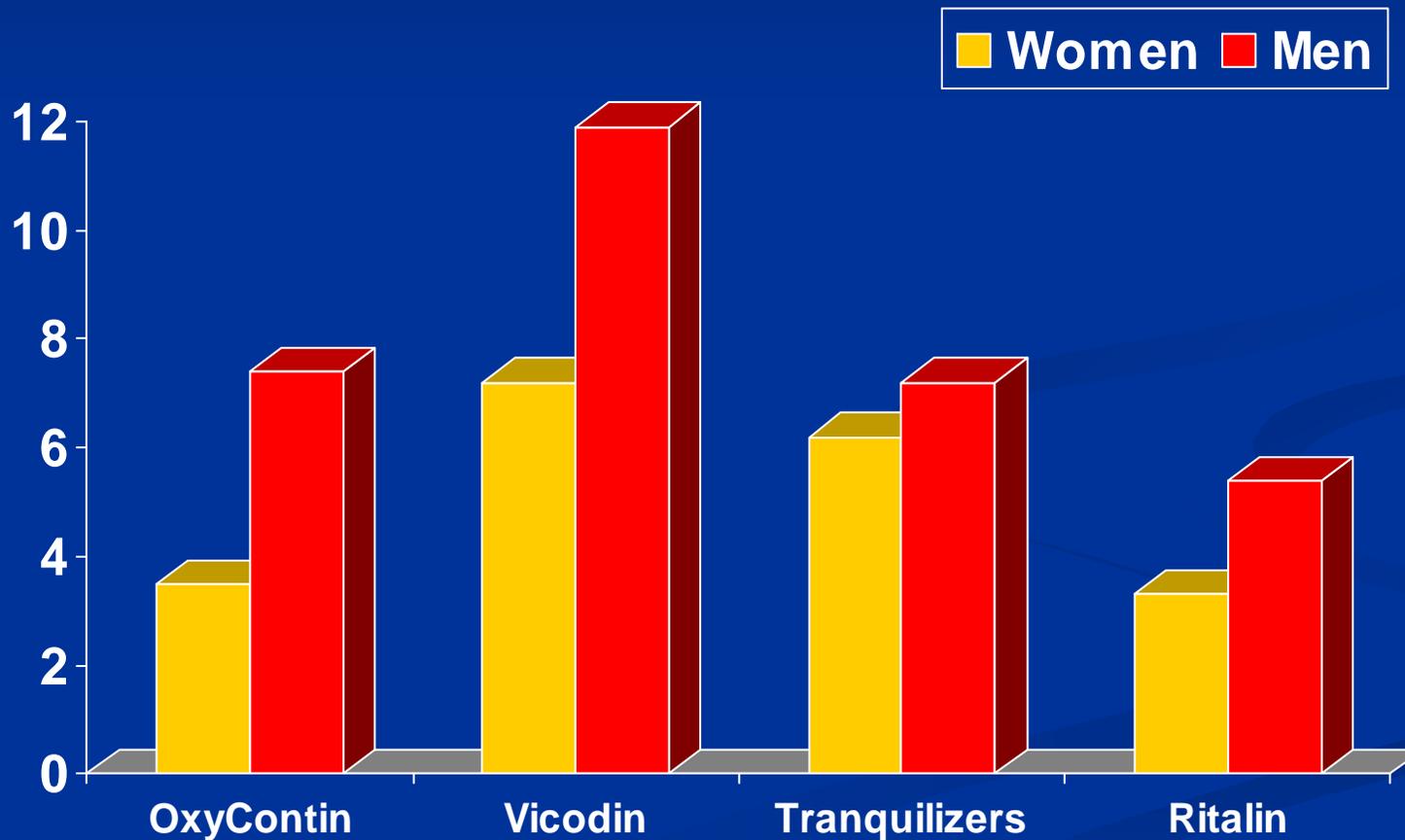
Nonmedical Use of Prescription Medications: Grades 8-12, 2005

Percent Using in Past Year



Please note that amphetamines are NOT just prescribed stimulants

Annual Prevalence by Gender



Monitoring the Future, 2005 12th grade

Student Life Survey

- Random sample from a large, Midwestern university (began in 1999)
- The entire sample received e-mail invitations describing the study; non-respondents were sent up to three e-mail reminders.
- Informed consent online before participation
 - Clicked on a link to access the Web survey using a password (PIN).
- 4,580 respondents in 2005; Response rate = 66%
- Includes questions on specific classes of prescription drugs
- Students received a token incentive (2005) and became eligible for sweepstakes prizes (2003 & 2005).

Student Life Survey

“On how many occasions in your lifetime (or 12 months) have you used the following types of drugs, not prescribed to you?”

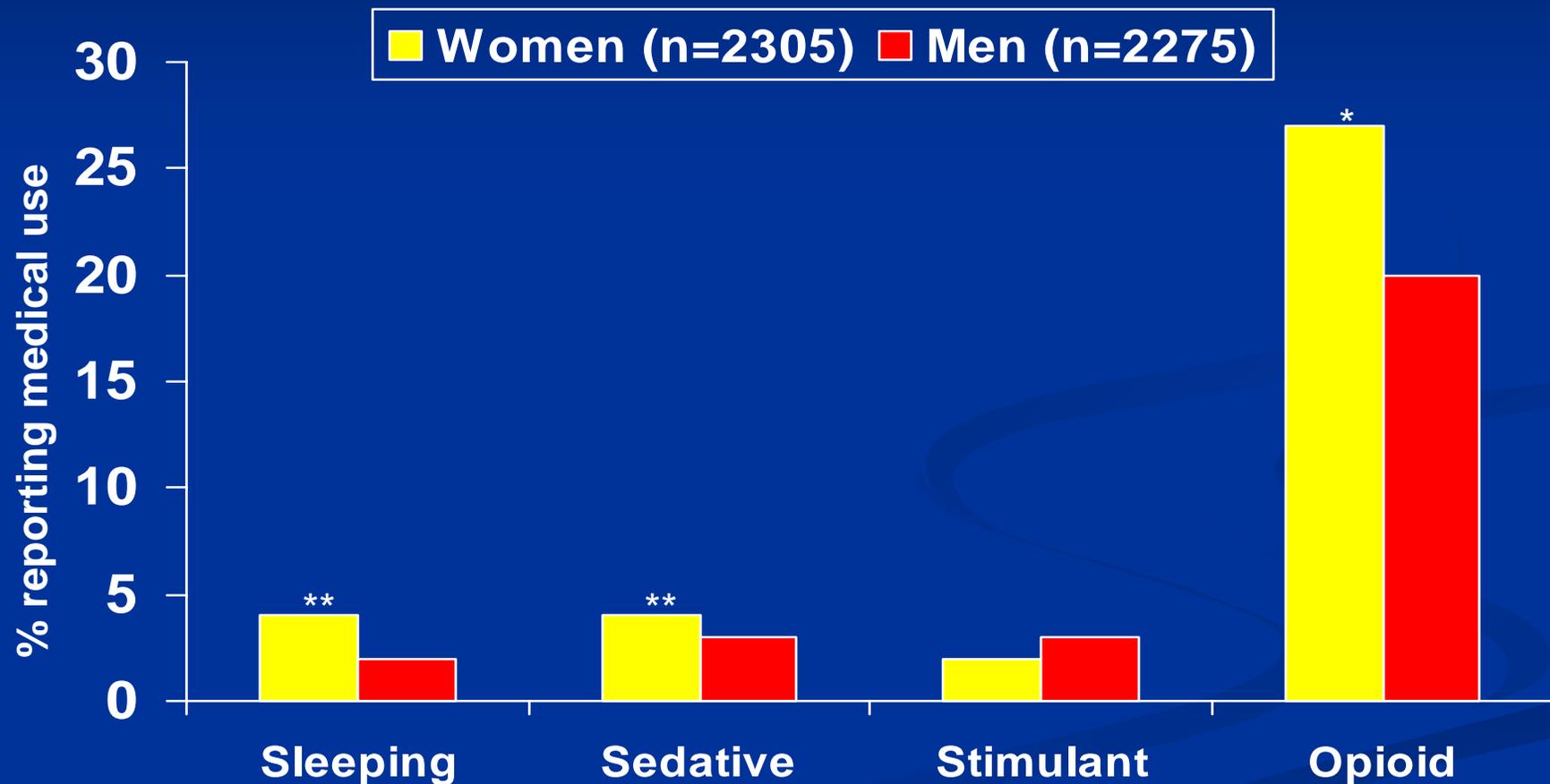
(SKIP PATTERNS, EMBEDDED)

Sleep (e.g., *Ambien, Halcion, Restoril*, temazepam, triazolam), sedative/anxiety medication (e.g., *Ativan, Xanax, Valium, Klonopin*, diazepam, lorazepam), stimulant medication (e.g., *Ritalin, Dexedrine, Adderall, Concerta*, methylphenidate) and pain medication (e.g., opioids *Vicodin, OxyContin, Percocet, Darvocet*, morphine, hydrocodone, oxycodone).

Prescription
Drug
Misuse

Prescription
Drug Abuse

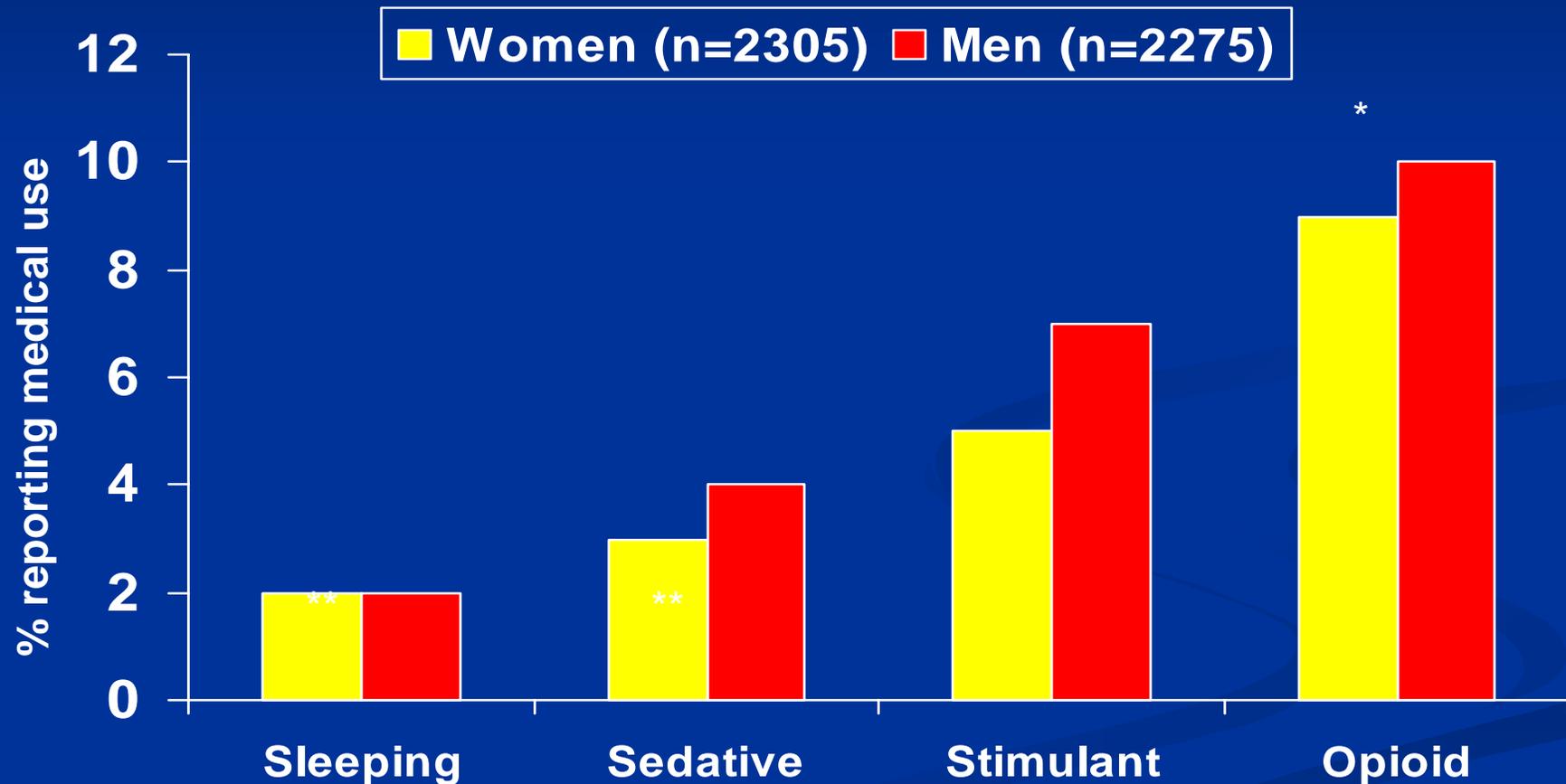
Past Year Medical Use



•*p < 0.05, ** p < 0.01 based on Pearson chi-square tests

Source: McCabe, Teter, Boyd, 2006

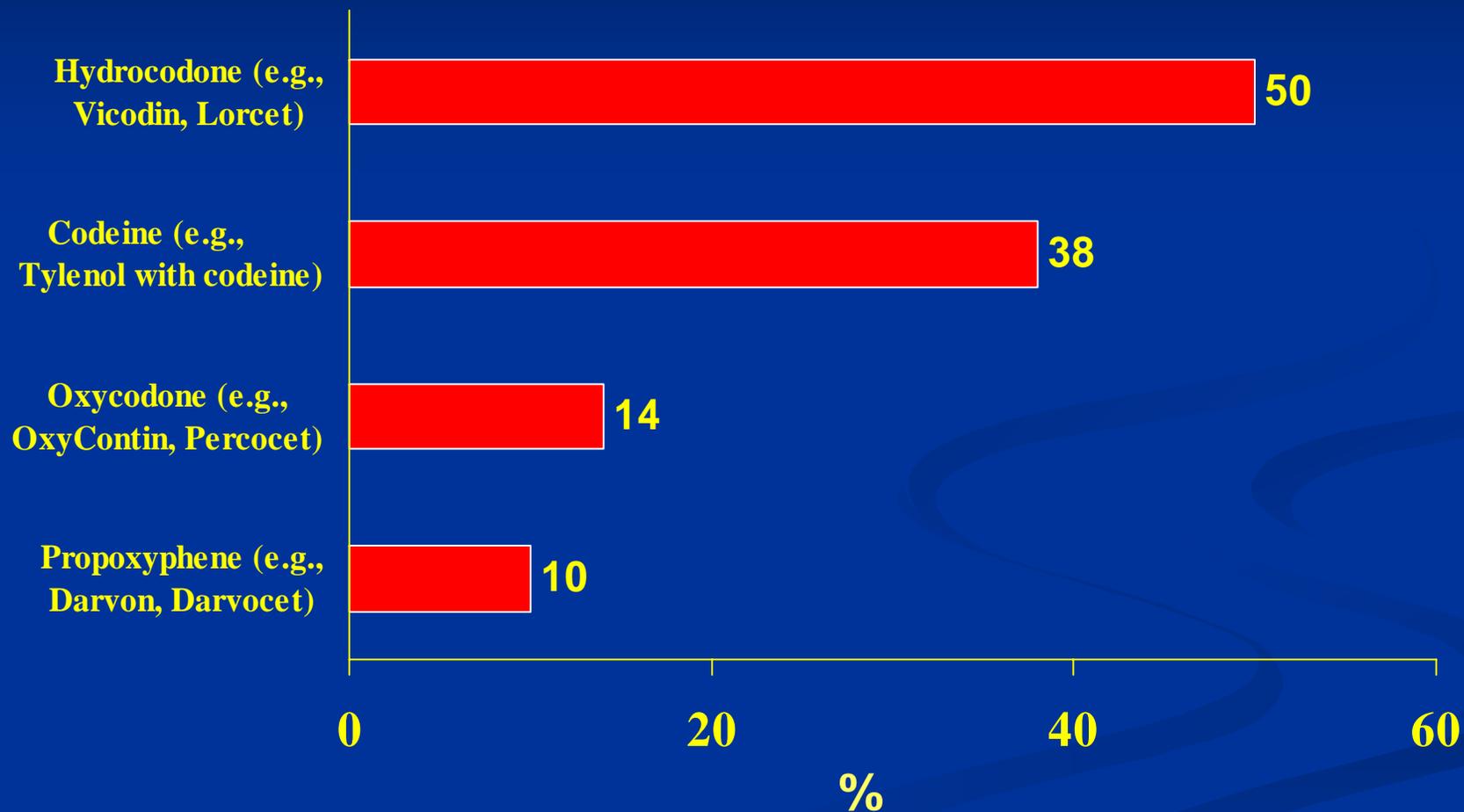
Past Year Nonmedical Use



* $p < 0.05$, ** $p < 0.01$ based on Pearson chi-square tests

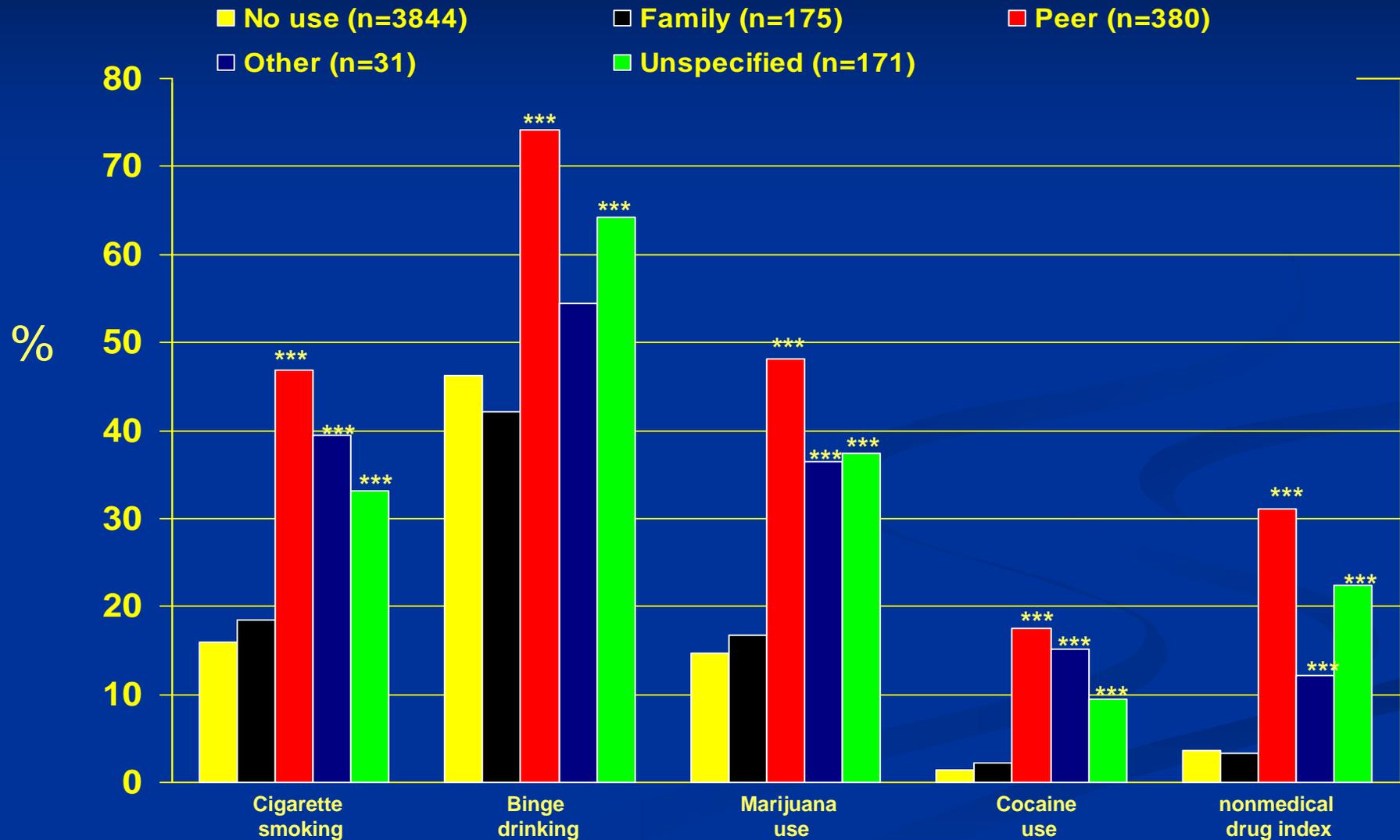
Source: McCabe, Teter, Boyd, 2006

Specific Prescription Opioids Used Nonmedically (Past Year)



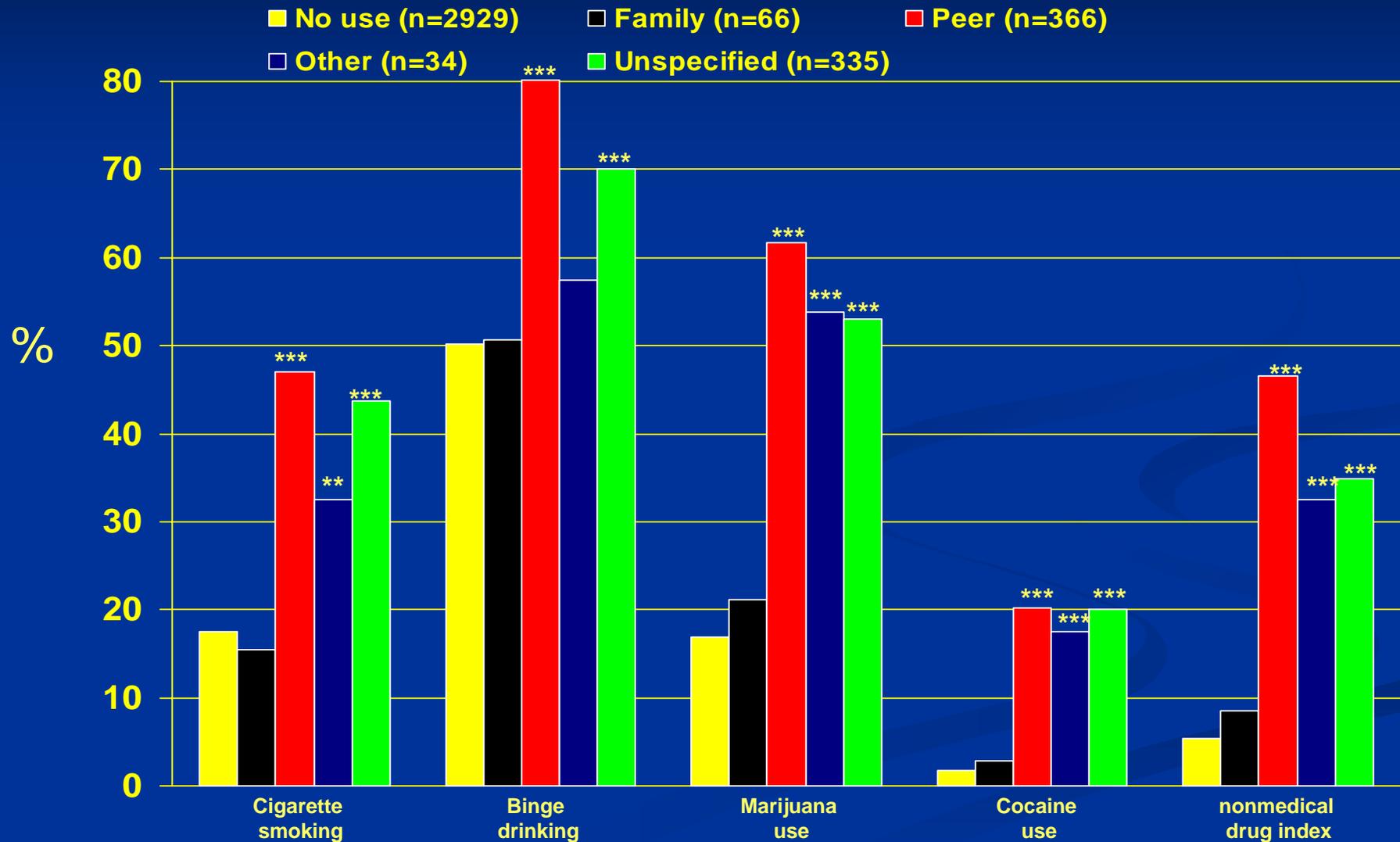
The past year use was 2% or less for fentanyl, hydromorphone, meperidine, methadone, and tramadol.

Substance Use by Source of Prescription Opioids among College Women



SLS, 2003

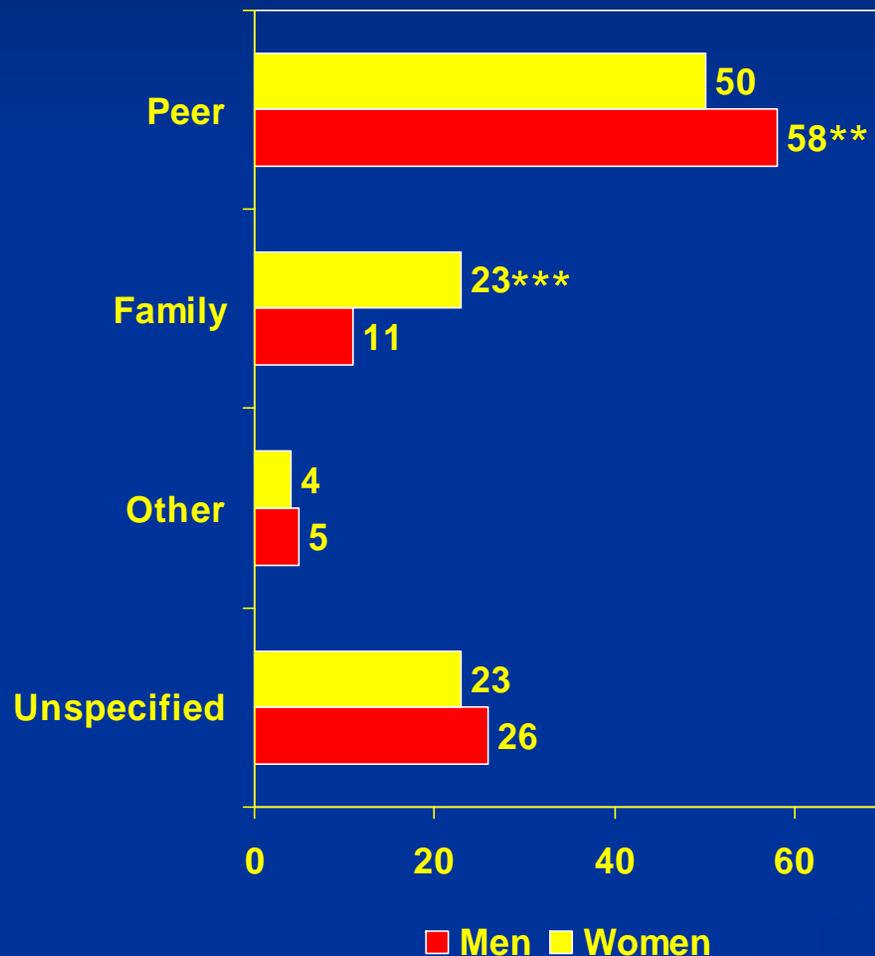
Substance Use by Source of Prescription Opioids among College Men



SLS, 2005

Source: McCabe, Teter, Boyd Drug Alcohol Depend 2005; 77:37-47.

Gender Differences in Sources for Prescription Opioids Not Prescribed (n=1,387)*



p<.01, *p<.001

- Peer category consisted of friends, peers, roommate, boyfriend, girlfriend and teammate.
- Family category consisted of mother, family, parent, father, sibling, aunt, brother, husband and cousin.
- Other category consisted of don't know, self, drug dealer and abroad.

* 2003 data; check all that apply

Source: McCabe, Teter, Boyd Drug Alcohol Depend 2005;27:37-47.

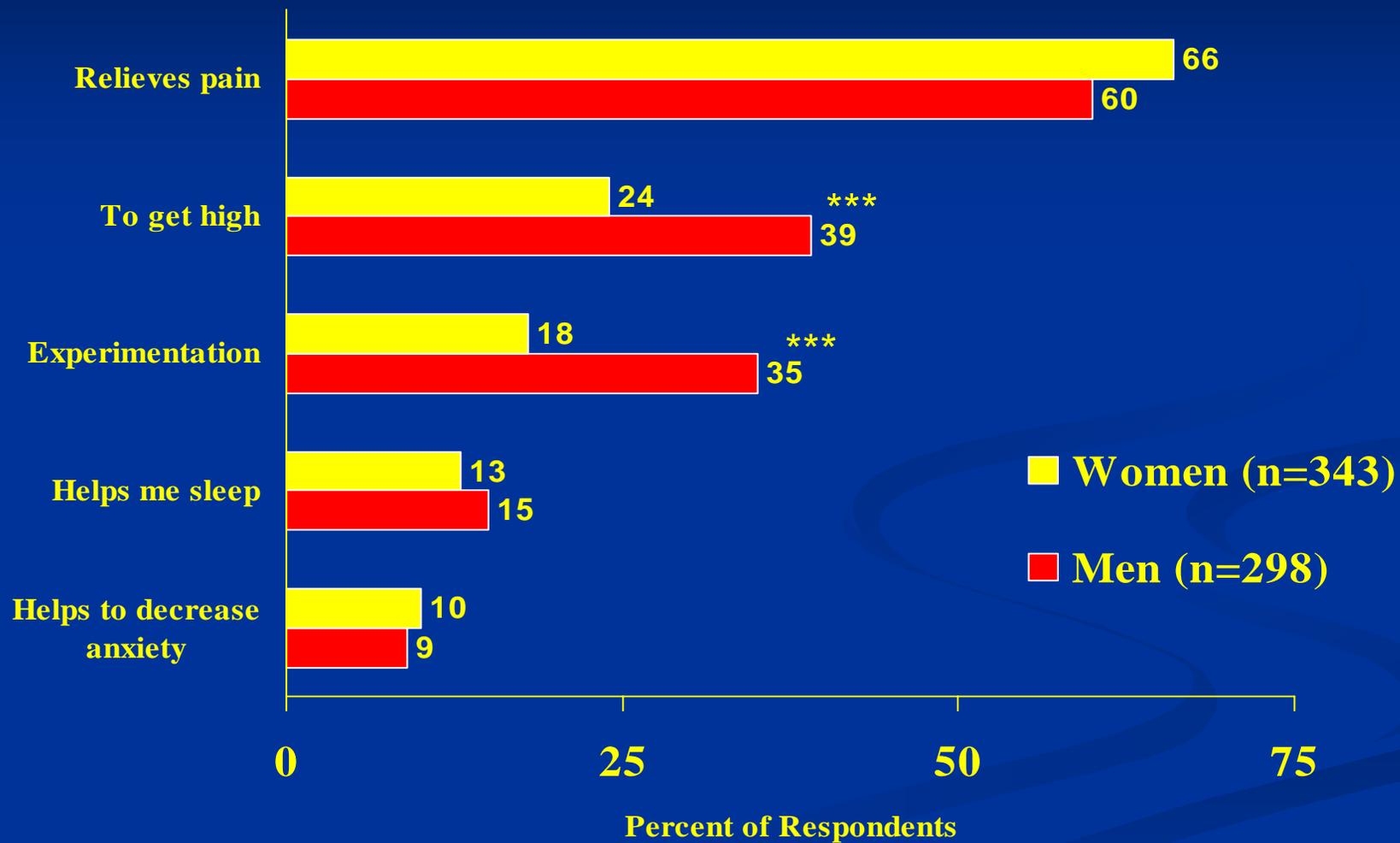
Nonmedical Use of Prescription Opioids by Age of Initiation of Medical Use

■ No prescribed use (n=3958)
 ■ Elementary school (n=298)
 ■ Secondary school (n=3154)
 ■ College (n=1036)



SLS, 2003

Gender Differences in Motives for nonmedical Use of Prescription Opioids

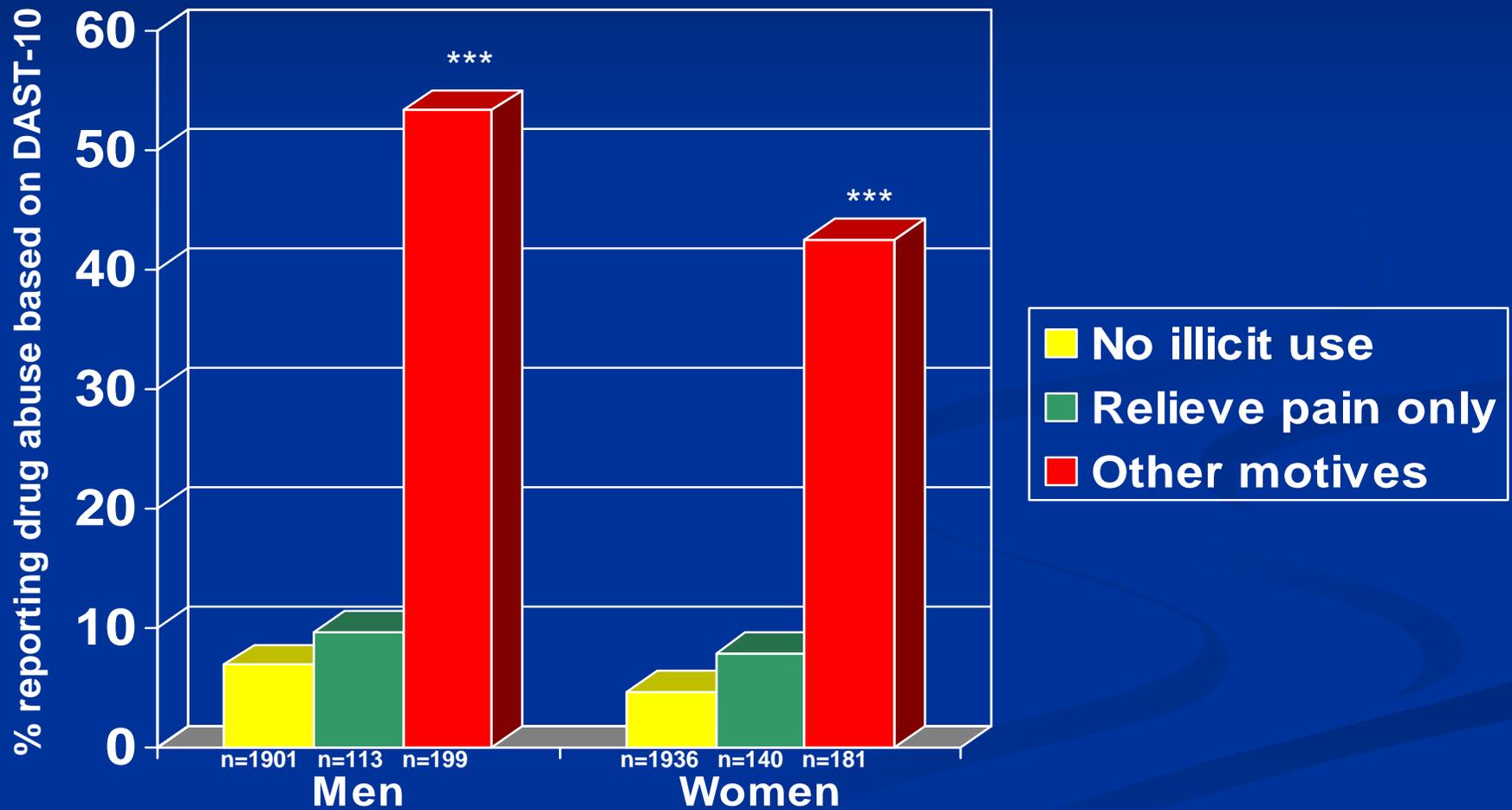


*p<.05, **p<.01, ***p<.001

SLS, 2005; check all that apply

Source: McCabe Cranford, Boyd & Teter, Add Behaviors, 2007

Motives for Nonmedical Use of Prescription Opioids: DAST-10 Scores



SLS, 2005

31
Source: McCabe, Cranford, Boyd & Teter, 2007

PEERS

“In college, pain killers are rampant among my friends so I could get it from them.”

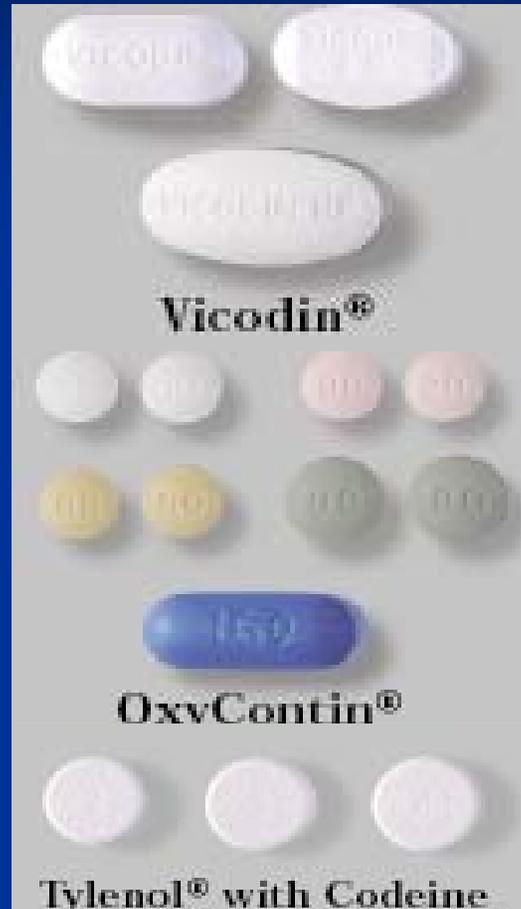
(female, White, sophomore)

“...a friend had some and thought it would be fun to split a Vicodin while drinking...”

(female, White, junior)

“I tried one pill and had 4 beers.”

(male, White, junior)



FAMILY

“My mother has Tylenol 3 with codeine and I had a headache one day. She gave that to me so the headache would go away.” (male, Asian, junior).

“My father is a virtual pharmacy from all his surgeries. If I'm in pain, he is going to give me pain medication.” (female, Hispanic, junior).

Secondary Student Life Survey

- Random sample of single, ethnically diverse, school district in southeastern Michigan
- Administered to grades 7-12
- Web-based, self-administered
- 1,086 respondents in 2005; Response rate = 68%
- Includes questions on specific classes of prescription drugs

Secondary Student Life Survey

“On how many occasions in your lifetime (or 12 months) have you used the following types of drugs, not prescribed to you?”

(SKIP PATTERNS EMBEDDED)

(e.g., *Ambien, Halcion, Restoril*, temazepam, triazolam), sedative/anxiety medication (e.g., *Ativan, Xanax, Valium, Klonopin*, diazepam, lorazepam), stimulant medication (e.g., *Ritalin, Dexedrine, Adderall, Concerta*, methylphenidate) and pain medication (e.g., opioids such as *Vicodin, OxyContin, Percocet, Darvocet*, morphine, hydrocodone, oxycodone).

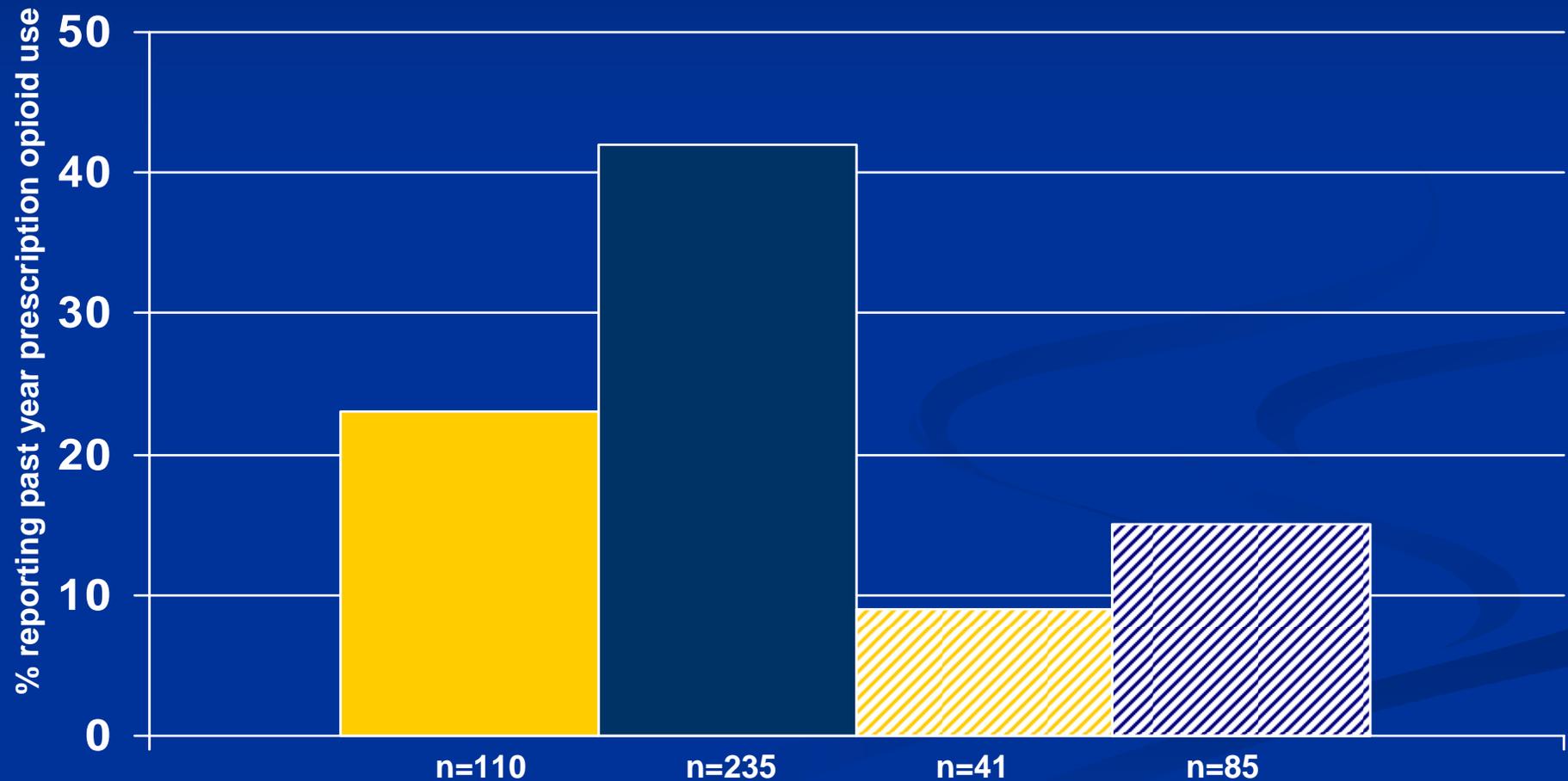
Prescription
Drug
Misuse

Prescription
Drug
Abuse

Past Year Use of Prescription Opioids by Gender, 7th-12th grade

■ Medical Use Males
▨ Nonmedical use Males

□ Medical Use Females
▩ Nonmedical Use Females



SSLS, 2005

Source: Boyd, McCabe, Cranford, Young, 2006

Secondary Student Life Survey

- **The lifetime prevalence of nonmedical use was highest for pain medication (17.5%):**
 - Sleeping medication (5.8%), sedative/anxiety medication (3.5%), and stimulant medication (2.5%).
- **Girls were significantly more likely to report nonmedical use of pain medication** (22.2% vs. 12.0%, $\chi^2 = 19.0$, $df = 1$, $p < 0.001$).
 - No gender differences in nonmedical use of the other classes of prescription drugs.
- **White students were more likely than Black students to report nonmedical use of prescription sedative/anxiety* and stimulant medications****

*(4.5% vs. 2.2%, $\chi^2 = 4.2$, $df = 1$, $p < 0.05$) ** (3.3% vs. 1.3%, $\chi^2 = 4.2$, $df = 1$, $p < 0.05$).

Source: Boyd, McCabe, Cranford, Young, 2006

Motivations to Misuse: Reasons Varied by Drug Class

Students responded about motivations to misuse of opioid analgesics:

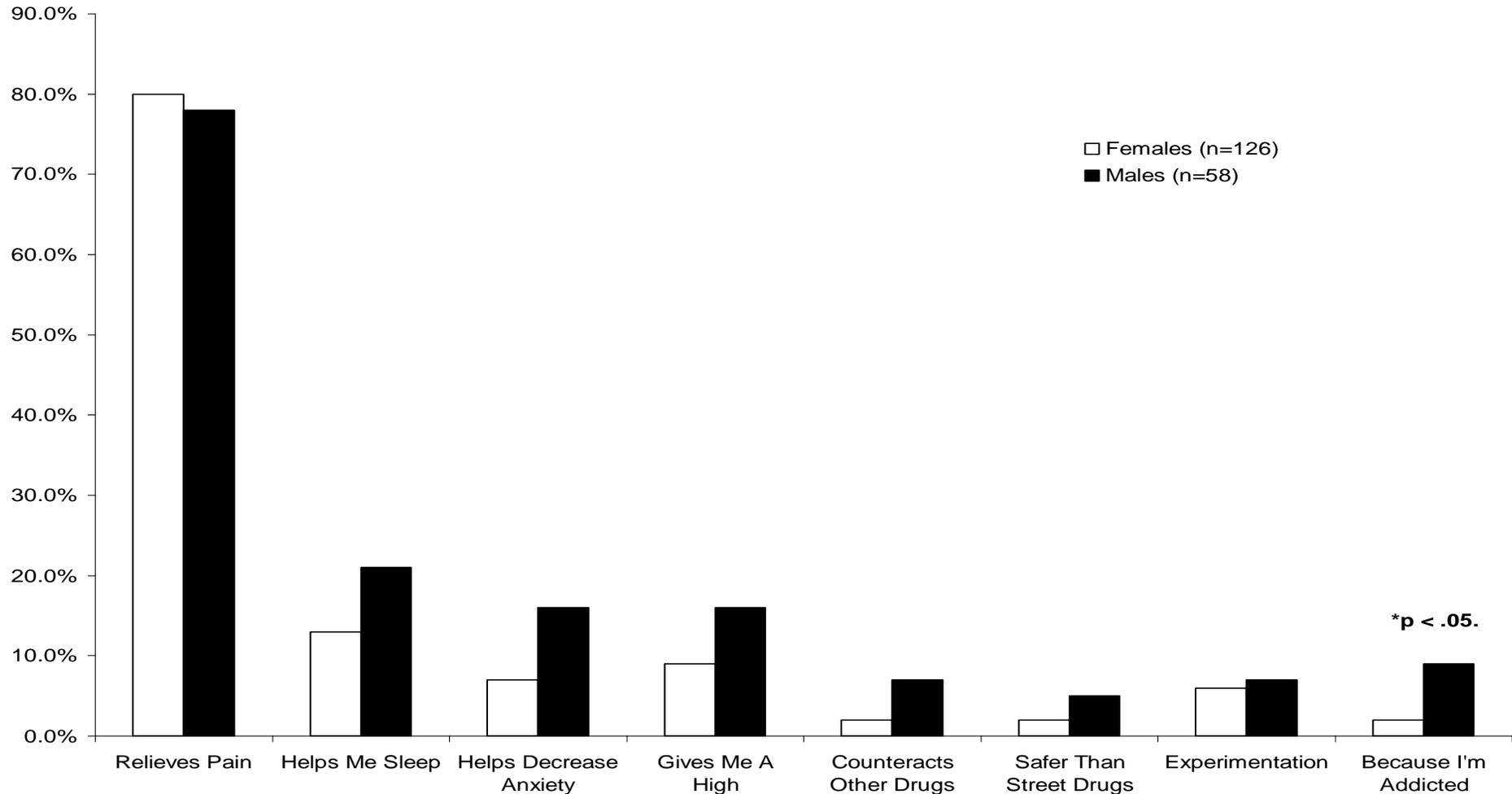
- 80% for the purpose of relieving pain;
- 16% for the purpose of helping to sleep;
- 20% for the purpose of getting high;
- 3% because they are safer than street drugs.



(2005 SSLS Data; Check all that apply; Girls=127; Boys=58)

Source: Boyd, McCabe, Cranford, Young, 2006

Gender Differences: Reasons for Nonmedical Use

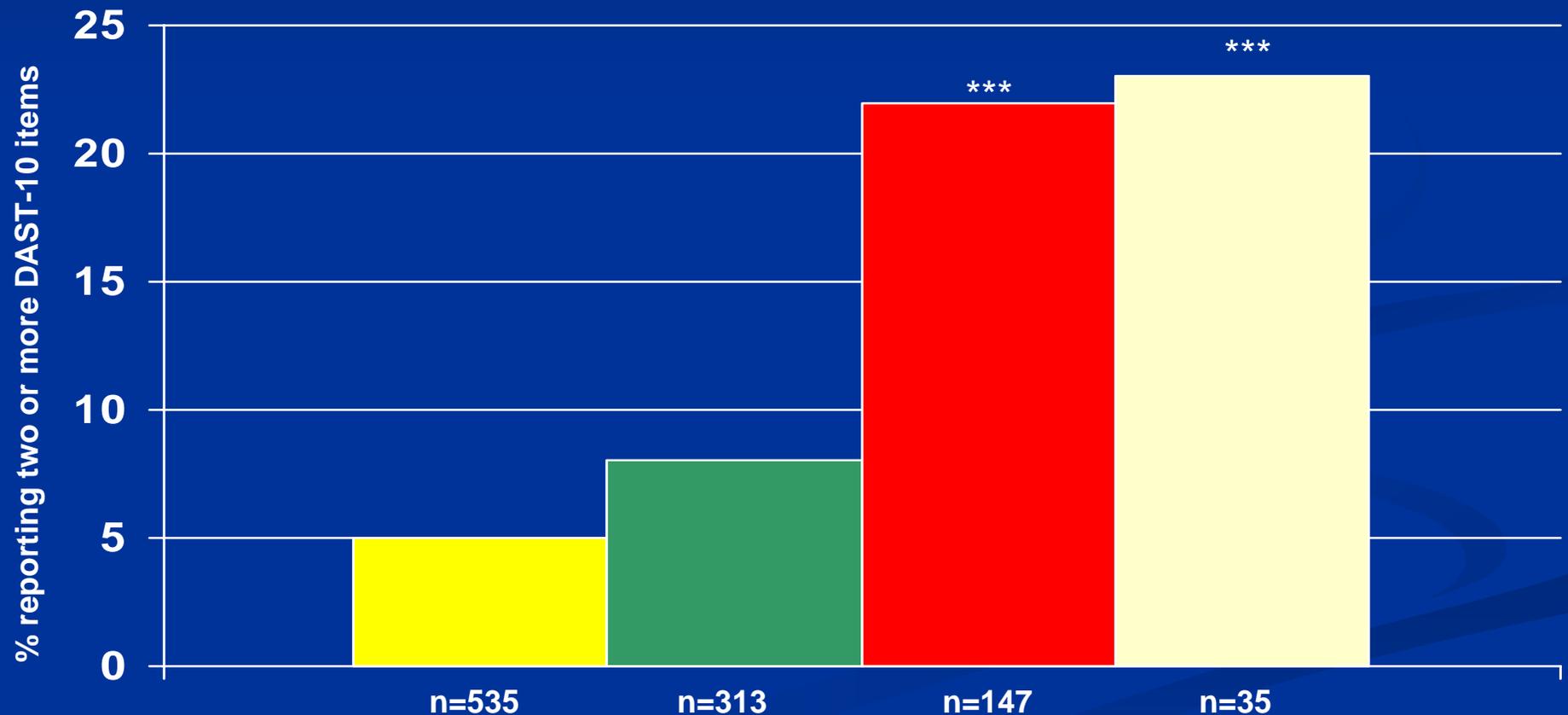


SSLS, 2005; check all that apply

Source: Boyd, McCabe, Cranford, Young, 2006

Drug Abuse Screening Test Results by Lifetime Prescription Opioid Use, 7th-12th grades

■ Non-user ■ Medical user only ■ Medical and nonmedical user ■ Nonmedical user only



*** p < 0.001 based on logistic regression using non-users as reference group and adjusting for gender, race/ethnicity and grade level.

Nonmedical Use of Opioid Analgesics: Association with Substance Abuse Problems

**When the number of motives increased
DAST-10 scores increased.**

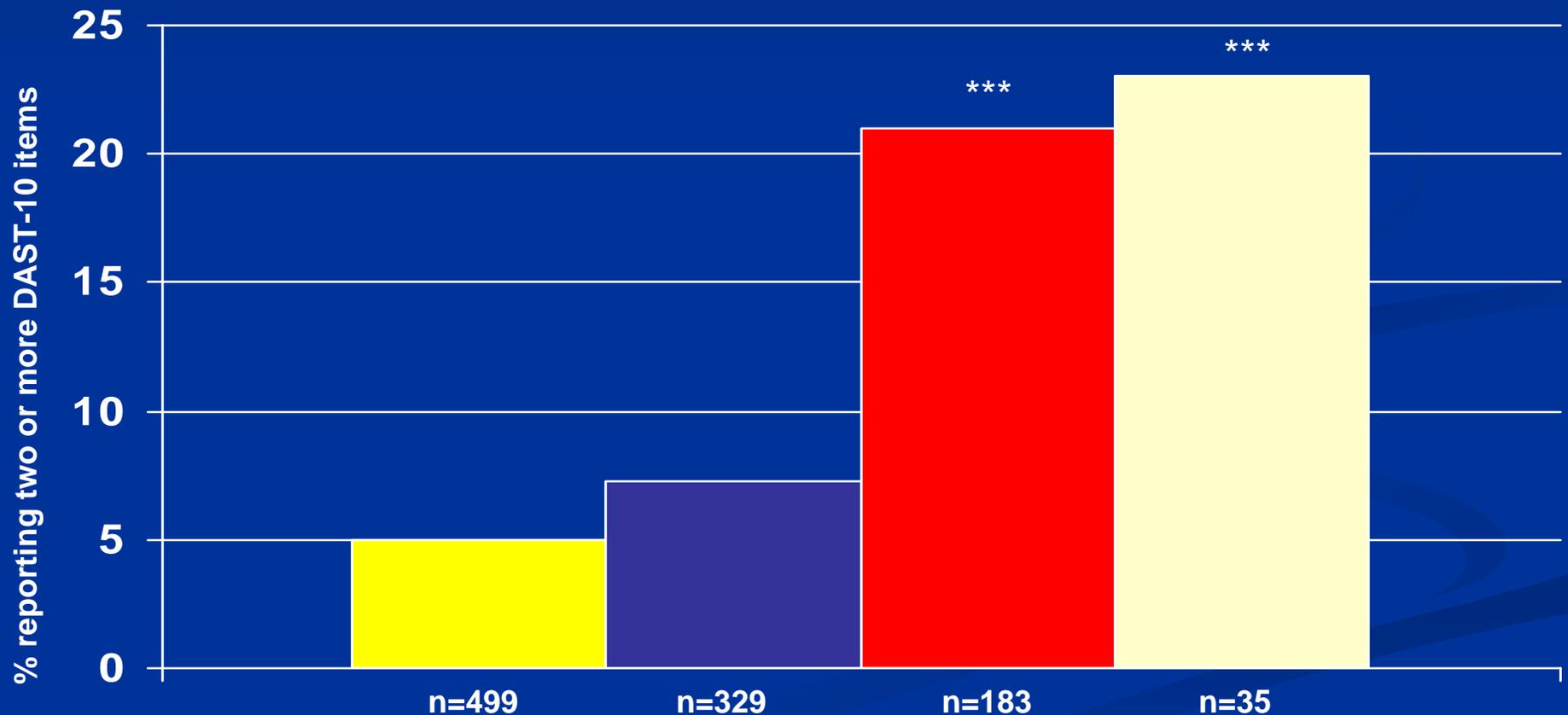
- **For every additional motive endorsed, the DAST-10 increased by a factor of 1.8.**
 - The group that endorsed more than one motive was significantly more likely to engage in greater marijuana and alcohol use as well.

SSLS, 2005

Source: Boyd, McCabe, Cranford, Young, 2006

Drug Abuse Screening Test Results by Lifetime Prescription Drug Use, 7th-12th grades

■ Non-user ■ Medical user only ■ Medical and nonmedical user ■ Nonmedical user only



*** p < 0.001 based on logistic regression using non-users as reference group and adjusting for gender, race/ethnicity and grade level.

Diversion (7th-12th grades)

- Thirty-six percent of students reported having a recent prescription for one of the 4 drug classes.
 - A higher percentage of girls gave away their medications than boys (27.5% vs. 17.4%, respectively; $\chi^2_{(1)} = 6.7$; $P < .05$);
 - Girls were significantly more likely than boys to divert to female friends (64.0% vs. 21.2%, respectively; $\chi^2_{(1)} = 17.5$; $P < .01$) while boys diverted to male friends (45.5% vs. 25.6%, respectively; $\chi^2_{(1)} = 4.4$; $P < .05$).
 - Ten percent diverted their drugs to parents.

Source: Boyd, McCabe, Cranford, Young, 2007

Summary

The nonmedical use of prescription medications is increasing in the U.S. among adolescents and young adults. (See: Johnston et al., 2004, 2005; McCabe, et al., 2007; NSDUH, 2006)

Students who abuse or misuse prescription medications are significantly more likely to smoke cigarettes, use marijuana and use other illegal drugs. (Boyd, Teter, McCabe, 2004; Boyd, McCabe, Teter, 2006; Boyd, McCabe Teter, 2005)

College men and high school boys are more likely than their female counterparts to obtain prescription opioid medications from peer sources, while girls/ women from family. ((Boyd, McCabe, Cranford, Young, 2007; McCabe, Teter & Boyd, 2005;)

Student NOT obtaining prescription drugs directly via the internet but they learn about them from the Internet/TV/print media, peers and family. (Boyd, McCabe, Teter, 2006; McCabe & Boyd, 2005)

Summary

There are measurement issues that make it difficult to determine the extent of the problem:

To what extent are respondents abusing their own prescriptions as opposed to someone else's?

This form of scheduled medication use/misuse/abuse challenges traditional ideas about substance abusers.

Self-treatment appears to be one motivation for the nonmedical use of prescription opioid analgesics *(Boyd, McCabe, Cranford, 2006)*

Unlike users of many street drugs, there appears to be at least two groups of nonmedical users of prescription medications:

Those to **Self-treat**; those to get **High/Experiment/>Performance**”