Applying Technology to the Prevention of Prescription Drug Misuse

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Promise of Applying Technology to Prescription Drug Misuse

- Technology-based (web-, mobile) therapeutic tools offer great promise for enabling widespread dissemination of evidence-based interventions focused on the prevention and treatment of prescription drug misuse.

- Technology-based interventions may be cost-effective, delivered with fidelity, and in a manner that does not require time or training of clinicians, and may be responsive to each individual’s profile of needs and preferences.

- Technology-based therapeutic tools may be deployed via numerous flexible models and may enable entirely new models of intervention delivery (e.g., in homes, schools, health care systems)

- Computer-based interventions may be highly acceptable to youth (e.g., Kaiser Family Foundation, 2010)
Our Research on Technology-based Therapeutic Interventions Targeting Substance Use

This line of research has shown that technology-based behavioral interventions (if developed well and with the target audience) can:

- **enhance quality, reach, and outcomes** when provided as an adjunct to treatment as usual (e.g., prevention or treatment programs)
- be **as effective** as science-based interventions delivered by highly trained educators/clinicians
- be **more effective** than typically-delivered interventions in standard settings
- be **cost-effective**
- be **highly acceptable** to a wide variety of target populations
Examples of Technology Interventions Grounded in Prevention Science

- **HeadOn: Drug Abuse Prevention for Grades 6-8**
  Interactive computer program addressing prescription drug abuse prevention and embedded it into a comprehensive multimedia primary prevention program for middle school youth.

- **Web-based Prescription Opioid Abuse Prevention Program**
  Prototype of interactive computer program addressing prescription opioid abuse prevention for high school-aged youth

- **Safe Medication Use among Persons with Chronic Pain**
  Web-based educational, skills training, and goal setting/tracking program for persons with chronic pain prescribed opioids
Beliefs about Prescription Drugs Among Youth

• About 2/3 of youth (62%) said that prescription pain medications are easy to get from parents' medicine cabinet, 52% said they "are available everywhere", and 50% said they are easy to get through other people's prescriptions.

• Youth report that using prescription drugs are less stigmatized relative to using illicit drugs (51% of youth said that they used prescription opioids because they are not illegal drugs, and 21% said that their "parents don't care as much if you get caught").

• Many youth (35%) regard prescription drugs as safer than illicit drugs (29% of youth report that even if they aren't prescribed, prescription opioids are not addictive)
Beliefs about Prescription Drugs Among Youth

• Several studies have indicated that, although many youth use prescription opioids to "get high", they also sometimes use them for "practical" effects.

(e.g., 59% of youth reported using prescription opioids to "get high" or "experiment", and 63% of them reported use to "relieve pain")

• Many youth who reported having a prescription for an opioid or stimulant medication indicated that they had been approached by other youth asking them to divert their medication.
**HeadOn Program Content for Grades 6-8**  
*Marsch et al., 2007*

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**Topics Addressed:**
- Prescription Drug Abuse Prevention
- Experimenting With Drugs: The Risk of Losing Control of Drug Use
- Experimenting with Drugs: The Risk of Losing Control of One’s Life
- Drug Use: “NOT Everyone is Doing It”
- What Should I Do When Offered a Drug?
- Drugs: How do they Work?
- Drug Refusal Skills Training
- Resisting Drug-related advertisements
- Enhancing Social Skills
- Self-Management Skills
Emphasizes that most people take prescription drugs responsibly (as prescribed) but that misuse of prescription drugs can lead to addiction.

Addresses misconceptions that prescription drug misuse is sometimes perceived as “safe”, because these medications are available via physician prescription.

Discusses how the pharmacology of prescription opioids may be similar to some non-prescription drugs (e.g., heroin).

Emphasizes the importance of using effective decision-making and communication skills in making and communicating decisions regarding prescription drug abuse in the same manner as one would do with non-prescription drugs.
Substance Abuse Prevention

Grades 6-8
What should Chris do?

- Ok, not a big deal
- Maybe later
- No, thanks
Doctors sometimes prescribe medications to their patients to help their patients manage a medical condition. These medications can have many useful effects for patients when taken as prescribed.
Many people who misuse prescription drugs think that taking a prescription drug is much less dangerous than taking an illegal drug. They think that because doctors are allowed to prescribe the drug, this means the drug is much safer to use than illegal drugs that doctors do not prescribe. This is not the case.
Multiple Choice Quiz

Some prescription drugs can cause the same effects as a(n) ______ drug if they are not taken as prescribed by a doctor.

A. illegal
B. over-the-counter
C. herbal
D. legal
The Right Crowd

20

A

Hanging out with peers who are a positive influence on your life is essential if you are going to make healthy decisions about staying off drugs.
Evaluation

• We conducted a multi-site, school based evaluation of the HeadOn computer-based prevention program relative to the science-based Life Skills Training, educator-delivered program (n=272).

• Both interventions were delivered across approx. 15 sessions (30-45 minutes per session) during the course of the school year.

• Assessments were conducted with both groups before and after their respective interventions.
Participants in the *HeadOn* and *Life Skills* groups generally achieved comparable, positive outcomes after completing their substance abuse prevention intervention in:

- Rates of substance use
- Intentions to use substances
- Attitudes toward substances
- Beliefs about prevalence of substance use among both their peers and adults
- Likelihood of refusing a drug offer

Participants who received *HeadOn* achieved much higher levels of accurate prevention-related knowledge.
Web-based Prescription Opioid Abuse Prevention Program for High School-Aged Youth

• Grounded in a scientific understanding of risk factors for prescription opioid abuse among youth

• Employs informational technologies which are effective in promoting relevant knowledge and skills

• Presents program content using strategies which have been shown to be highly appealing to adolescents (e.g., using a model which references constructs employed in popular television-based “reality shows” and highly popular social networking sites among youth, such as MySpace).
Organizational Structure of Web-based Prescription Opioid Abuse Prevention Program

• Organized as a documentary (students in Mr. Briggs’ health class given cameras and asked to explore someone’s experience with prescription opioids, chronicling on video)

• Each story embedded within journal-like “blog” interface (Home page is “Mr. Briggs’ online health class”).

• Core educational components embedded within these stories, presented as student blogs accessible from teacher’s home page

• Transition back to home page after viewing student blog to see what you learned (fluency-build quiz component)
Organizational Structure of Web-based Prescription Opioid Abuse Prevention Program

- **Chris’ Blog (What are Prescription Opioids?)**  Chris covered story of a skater friend who broke his wrist and was prescribed opioids for pain. Discusses what opioids are, how they work in brain, why sometimes prescribed by dr., how effects differ if taken by someone in pain vs. not in pain.

- **Rachel’s Blog (Module on Misconceptions that Opioids are Safe and Non-Addictive)**  Rachel covered story of friend who started using pills to manage stress and her use progressed in ways never intended. Discusses addictive potential, tolerance and withdrawal.
Planned Modules in Prescription Opioid Prevention Program

- Misconception that Using Prescription Opioids Without a Prescription is Not Illegal
- Risks of Prescription Opioid Misuse
- Non-medication Alternatives for Pain Management
- Refusing Offers to Misuse Prescription Opioids
- Refusing Requests from Others for a Prescription Opioid Prescribed to You
- How do you Know if You or Someone You Know May be Addicted
Feedback Sessions:
Percent Accuracy on Knowledge Tests related to Prescription Opioid Abuse

Misconceptions that Opioids are Safe & Non-Addictive

Before Module Access: 68%
After Module Access: 95%

What Are Prescription Opioids?

Before Module Access: 66%
After Module Access: 100%
Qualitative Feedback

Positive Qualitative Feedback from Youth:

“I genuinely felt engrossed in what they had to say.”

“It was informative, but not preachy.”

“The fact that it was interactive increased the program’s strengths greatly.”

“I liked the quiz because it made important things easier to remember.”

“It was very real.”
Video Demo of Rachel’s Blog
Summary

• Our research to date has underscored the acceptability and effectiveness of technology-based interventions targeting prescription drug misuse.

• Adoption of empirically supported technology may play a critical role in improving community-based prevention of prescription drug misuse in a manner that enables rapid diffusion and widespread adoption of science-based interventions.

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