Prescription Opioid Abuse Among Adolescents on the Rise:
A National Epidemic

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CHHS 302: Writing for the Health and Human Services Professions
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May 13, 2013
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Executive Summary

Prescription drugs are the second-most abused category of drugs after marijuana in the United States. The most commonly abused prescription drugs are opioid painkillers—synthetic versions of opium used as painkillers such as OxyContin, Vicodin, and methadone. The onset age of drug use increases the risk for addiction and/or dependency later in life. One in every three teenagers in America meets the medical criteria for addiction; 90 percent of adult addicts start using drugs and alcohol before the age of 18. In the United States an average of 2,500 teenagers are using prescription drugs daily for non-medical purposes everyday. Abuse of prescription drugs in the United States has more than doubled between the years of 1999 and 2009. With rising numbers of prescription opioid abuse among adolescents due to accessibility and the belief that prescription drugs are safer than illegal drugs, education and awareness of the dangers of addiction are essential.

Why are adolescents abusing prescription drugs? First, accessibility, over 70 percent of people who abused prescription pain relievers got them from friends or relatives. Second, the increase in the number of prescriptions filled contributes to cause. From 1997 to 2007, the milligram-per-person use of prescription opioids in the United States increased from 74 milligrams to 369 milligrams, an increase of 402%. Third, incentives are given to doctors from pharmaceutical companies to prescribe medications. Fourth, individuals who abuse prescription drugs, particularly teens, believe these substances are safer than illicit drugs because they are prescribed by a healthcare professional. Fifth, research has demonstrated that exposure to illicit drugs and alcohol—such as in the home—prior to age 15 statistically predicts substance disorders in adulthood.

Following are the effects of teen prescription opioid abuse. Overdose death is particularly at high risk when abusing opioid painkillers because of the high potency of the drug and the effects it has on the body when abused. Unintentional overdose deaths involving prescription opioids have quadrupled since 1999 and now outnumber those from heroin and cocaine combined. When a teen abuses drugs damage being done to adolescents’ developing brain; drug abuse can affect the “reward pathway”, making it difficult for a person to feel good without the drug, which can lead to intense cravings and addiction. Furthermore, adolescent drug use is related to reductions in sustained engagement in academic pursuits. Likelihood of addiction is high when abusing opioids, prescription opioids act on the same receptors as heroin and can be highly addictive.

Solutions to reducing the risk of youth abusing prescription drugs are to educate and bring awareness to youth, parents and patients about the dangers of abuse, addiction, dependency and proper medication disposal of prescription opioid pain killers can reduce this growing problem. Another solution is implementing prescription drug monitoring programs (PDMPs). In addition, pharmaceutical companies can change the formula of prescription drugs, decreasing abuse, to prevent drug users from altering the drug’s route of admission. A major step to recovery from addiction and abuse is seeking help, and expanding effective drug abuse treatment is critical to reducing prescription drug abuse, as only a small fraction of drug users are currently undergoing treatment.
**Introduction**

Today, the second most widely abused substance in the nation is prescription drugs. According to The National Institute on Drug Abuse (NIDA)-funded 2010 Monitoring the Future Study (MTF), the Nation's largest survey of drug use among young people, “prescription drugs are the second-most abused category of drugs after marijuana” and the most commonly abused prescription drugs are opioids (see figure 1). Nonmedical use of prescription pain relievers (opioids) is defined as use of these drugs without a prescription or use that occurred simply for the experience or feeling the drug caused (NIDA, 2011c). The same study showed that “2.7% of 8th graders, 7.7% of 10th graders, and 8.0% of 12th graders had abused Vicodin and 2.1% of 8th graders, 4.6% of 10th graders, and 5.1% of 12th graders had abused OxyContin for nonmedical purposes at least once in the year prior to being surveyed.” Further, between 1997 and 2007, “treatment admissions for prescription painkillers increased more than four-fold” (ONDCP, 2011a). Opioids are categorized as synthetic versions of opium and are used as painkillers – oxycodone (OxyContin®), hydrocodone (Vicodin®), and methadone – (Center for Disease Control [CDC], 2010).

There is a correlation between the onset age of drug use/abuse and the increased risk for addiction and/or dependency later in life. According to the National Center on Addiction and Substance Abuses (NCASA) (2011), one in every three teenagers in America meets the medical criteria for addiction, 90 percent of adult addicts today started using drugs and alcohol before the age of 18. In recent years the rates of prescription opioid abuse among American adolescents has increased dramatically, with an average of 2,500 teenagers now using prescription drugs daily for non-medical purposes (Foundation for a Drug-Free World [FDFW], 2008). In addition, youth who abuse prescription medications are more likely to report use of other drugs (McCabe, West, Morales, Cranford, & Boyd, 2007). According to the NIDA (2011b), the abuse of prescription drugs in the United States has more than doubled between the years of 1999 and 2009. When drugs are used at a young age it can shape and change the development of the brain, “reward pathway evolved (in the brain) to promote activities that are essential to the survival of the human race… drug abuse take over cell function throughout the body, drugs of abuse modify cell function in these important brain structures leading to modifications in behavior” (Wise, 1998) also increasing likelihood of addiction later in life.

American culture is fixated on instant gratification; there is a pill to “cure” everything in the market place today. The concept that prescription pills are safer than illegal drugs contributes to this growing issue. This misconception is common, however like illicit drugs, prescription medication can have powerful effects on the brain and body, with opioids acting on the same sites of the brain as heroin (FDFW, 2008). The Centers for Disease Control and Prevention (2010), has classified prescription drug abuse in America as an epidemic. Individuals, who misuse prescription drugs, particularly teens, believe these “substances are safer than illicit drugs because they are prescribed by a healthcare professional and dispensed by a pharmacist (Office of National Drug Control Policy [ONDCP], 2011b). With rising numbers of prescription opioid abuse among adolescents due to accessibility and the belief that prescription drugs are safer than illegal drugs, education and awareness of the dangers of addiction are essential.
Why Are Adolescents Abusing Prescription Drugs?

Accessibility to prescription painkillers is one of the major factors in the increase of prescription opioid abuse among adolescents. Many teens can find these dangerous drugs within their own home or of a friend’s. According to NIDA (2011c), “The reasons for the high prevalence of prescription drug abuse vary by age, gender, and other factors, but likely include greater availability.” Pill parties, where teens bring these drugs from their homes, place them in a community bowl and randomly “choose a treat”, is a popular party game. If prescription pills are not in the user’s home, they are most likely in a friend’s home and therefore easily accessed. The latest National Survey on Drug Use and Health shows that “over 70 percent of people who abused prescription pain relievers got them from friends or relatives, while approximately 5 percent got them from a drug dealer or over the Internet”.

Another main cause of prescription opioid abuse amongst the teen population is the increase in the number of prescriptions filled. Office of National Drug Control Policy (2011) states, “from 1997 to 2007, the milligram-per-person use of prescription opioids in the U.S. increased from 74 milligrams to 369 milligrams, an increase of 402%; furthermore, in 2000, retail pharmacies dispensed 174 million prescriptions for opioids; and by 2009, 257 million prescriptions were dispensed, an increase of 48%.” Drug companies and even doctors many times encourage or “push” pain relievers on patients; the amount prescribed contributes to accessibility and left over pills. There are incentives given to doctors to prescribe medications from pharmaceutical companies. “Pharmaceutical companies give doctors gifts, sponsor
informational lunches and continuing medical education programs where their drugs are described and promoted” (Morgan, Dana, Loewenstein, Zinberg, & Schulkin, 2006). In addition, “careless prescription, incessant dispensation and hidden distribution of harmful drugs — the addictive effects of which were unknown until too late — fostered a large addict population which continued to increase…” (National Conference of State Legislatures, 2009).

The idea that prescription drugs are safer than illegal drugs is misinformation that is often present within the teen community and influences prescription drug abuse. Many times, “individuals who abuse prescription drugs, particularly teens, believe these substances are safer than illicit drugs because they are prescribed by a healthcare professional” (Office of National Drug Control Policy, 2011c). However, whether a drug is legal or illegal all drugs can be abused. “Even if a federally regulated drug is considered “safe,” misuse and abuse of this drug can still have harmful effects” (Drug Enforcement Administration [DEA], 2011). In American culture and the media, prescription medication is accepted as a solution to fix any problem; this ideal increases the use and abuse of prescription drugs.

Family can also be a factor in prescription pill abuse. Most likely someone close to the teen uses drugs, people learn from modeling, research has demonstrated that exposure to illicit drugs and alcohol prior to age 15 statistically predicts substance disorders in adulthood (Grant & Dawson, 1997). If there is drug or alcohol use/abuse within the family and the home it contributes significantly to the likelihood of abuse from the teen. “When parents (or caregivers) themselves use or abuse alcohol or other drugs, their teens are more likely to use drugs, to use them early in their lives, and to become dependent on them” (DEA, 2011). Also, family life can cause adolescents to abuse prescription medication when a turbulence surrounding of family discourages open communication, and drugs may be taken for the following reasons: to mask emotional pain, to escape, and physical pain.

Another important factor of abuse in teens is experimentation and peer pressure, adolescents are often curious about the effects of drugs. Peer pressure plays a huge role because adolescents are vulnerable to acceptance by their peers. “The first time a teen uses a substance to get high, it’s likely to have come from siblings or friends” (DEA, 2011).

**Effects of Teen Prescription Opioid Drug Abuse**

The most serious effect of adolescents abusing prescription opioid medication is overdosing deaths. The Substance Abuse and Mental Health Services Administration (SAMHSA), has found that “the number of emergency department visits for opioid overdoses increased steadily through 2007,” so that “the mortality statistics through 2005 probably underestimate the present magnitude of the problem.” Overdose death is particularly at high risk when abusing opioid painkillers because of the high potency of the drug and the effects it has on the body when abused; “abuse of opioids, alone or with alcohol or other drugs, can depress respiration and lead to death. Unintentional overdose deaths involving prescription opioids have quadrupled since 1999 and now outnumber those from heroin and cocaine combined” (NIDA, 2011b) (see figure 2). The Center for Disease Control (2010) found that “the increase in drug overdose death rates is largely because of prescription opioid painkillers.”
Teens are at a crucial time in their life for brain development. When a teen abuses drugs, there is damage being done to adolescents’ developing brains, drug abuse can affect the reward pathway, making it difficult for a person to feel good without the drug which can lead to intense cravings and addiction (FDFW, 2008). Studies have shown that drug use over long periods of time shape the brain, “As the brain continues to adapt to the presence of the drug, regions outside of the reward pathway are also affected. Brain regions responsible for judgment, learning and memory begin to physically change or become "hard-wired"” (University of Utah, 2013). Drug use creates reward pathways, neurological pathways that trigger the addict to want to use again.

Another serious effect of prescription drug abuse is when drug use/abuse occurs among adolescents the pursuit of education falls to the waist side. To the addict the only concern is getting high or drunk, which hinders the individual’s opportunity of higher education; furthermore, research findings suggested, “adolescent drug use is related to reductions in sustained engagement in academic pursuits” (King, Meehan, Trim, & Chassin, 2006). If drug use occurs the young adult have a less likely chance of pursing to college.

Abuse of prescription opioid drugs poses an especially high risk for addiction and physical dependency. Likelihood of addiction is high when abusing opioids because; “prescription opioids act on the same receptors as heroin and can be highly addictive” (NIDA, 2013). In addition, when people alter the route of admission to intensify the effect of the prescription medication it can increase chance of addiction. “Some even report moving from prescription opioids to heroin” (NIDA, 2013). Physical dependency with opioids happens quickly, the body can have withdrawal symptoms within a week (Bailey & Connor, 2005). This contributes to the rate of addiction to opioids (see appendix for more information on the criteria for substance dependency and opioid withdrawal).
Drug abuse of any kind among growing adolescents affects the family system with negative consequences. Youth may withdrawal from family activities, communication and relationships causing strain and trouble with family members. 1 percent of the 36,992 respondents age 12 to 17 of the 2006-2007 National Survey on Drug Use and Health (NSDUH) “met the criteria for a diagnosis of abuse or dependence on opioid analgesics…The teens reported one or more abuse symptoms—such as interference with school and home life, exposure to physical danger, and problems with family and friends—resulting from the non-prescribed use of these pain relievers.” This consequence of prescription drug abuse affects the whole family and may influence siblings.

### Proposed Solutions for Prescription Opioid Abuse Amongst Teens

One solution to the increase of prescription opioid abuse among teens is to provide them with more awareness and education on the dangers of addiction. Parents, youth and patients must be aware of these dangers to avoid abuse, addiction and dependency. The government has published many resources for parents and teens to bring awareness and educate on the harmful effects of prescription opioid abuse. Outreach is important, anti-drug campaigns must get their information out to the right population to make a difference. “Many parents are not aware that youth are abusing prescription drugs; thus, they frequently leave unused prescription drugs in open medicine cabinets while making sure to lock their liquor cabinets” (ONDCP, 2011b). This is why education is so important in the prevention of prescription drug abuse. Also, it is imperative to educate prescribers on substance abuse, because “even brief interventions by primary care providers have proven effective in reducing or eliminating substance abuse in people who abuse drugs but are not yet addicted to them” (ONDCP, 2011b).

Another solution that has been implemented by many states in the nation is prescription drug monitoring programs (PDMPs). Prescription drug monitoring programs “serve multiple functions, including: patient care tool; drug epidemic early warning system; and drug diversion and insurance fraud investigative tools” (ONDCP, 2011c). These programs must be in every state to reduce “doctor shopping” (a patient obtaining drugs from multiple health care practitioners without the prescribers’ knowledge of the other prescriptions) and diversion. PDMPs should be enhanced to make sure there is sharing of data across states and are used by health care professionals (ONDCP, 2011d). As of summer 2009, at least 40 state legislatures had authorized some kind of prescription-monitoring program, according to the National Alliance for Model State Drug Laws; however, many analysts say current initiatives fall short (ONDCP, 2011a). There are many critics of PDMPs claiming that they are an invasion of privacy; however, PDMPs ensure “protection of patient information just as well as, if not better than, any other medical record” (ONDCP, 2011d).

Awareness and education of proper medication disposal is another way to oppose the abuse of prescription drugs among adolescents. “Development of convenient and environmentally responsible prescription drug disposal programs to help decrease the supply of unused prescription drugs at home”(ONDCP, 2011c). Physicians and pharmacists need to educate on appropriate and safe use, proper storage and disposal of prescription. They must also inform patients of the dangers of addiction if the drug is used other than prescribed. Each time a person is given a prescription they should be educated on proper disposal by receiving a
pamphlet describing ways and places to dispose of drugs or by mandatory discussions with a physician or pharmacist on why, how an where to dispose of unused drugs.

In addition, pharmaceutical companies can change the formula of prescription drugs to prevent drug users from altering the drug’s route of admission. For example, OxyContin, a highly abused opioid, was frequently crushed and snorted by abusers. Now, the formula change makes inhaling or injecting the opioid drug more difficult, “data show that OxyContin use by inhalation or intravenous administration has dropped significantly since that abuse-deterrent formulation came onto the market” (Dryden, 2012). With changes to this drug and other drugs we can prevent the abuse of potentially dangerous drugs.

A major step to recovery from addiction and abuse is seeking help. “Expanding effective drug abuse treatment is critical to reducing prescription drug abuse, as only a small fraction of drug users are currently undergoing treatment” (ONDCP, 2011b). Today, prescription opioid addiction is treated the same as heroin addiction and can included medication, along with counseling and behavioral therapies.

**Conclusion & Recommendations**

America’s prescription drug abuse is a serious issue, opioid abuse is life threatening and addictive. Youth at young ages are tying prescription painkillers believing them to be safe. The access to these dangerous drugs needs to be limited. When adolescents abuse drugs they are much more likely to become addicts in adulthood.

- Education and awareness of these harmful drugs is key; treatment and drug monitoring programs are important pieces to the solution as well.
- We must educate parents and provide tools for them to facilitate awareness to their children about drug use of any kind, debunking the myth of the safety of prescription drugs is essential.
- Much focus of law enforcement, policy and government aide has been on illegal drug use/abuse; now, realizing that prescription drug abuse is just as serious an issue it demands more attention.
- Our nation must protect its youth and provide feasible solutions to combat the rise of prescription drug abuse.
References


Opioid Abuse Among Adolescent


Appendix

Substance Use Disorders

Substance Dependence

A maladaptive pattern of substance use leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring any time in the same 12-month period:

1. Tolerance, as defined by either of the following:
   a. A need for markedly increased amounts of the substance to achieve intoxication or the desired effect or
   b. Markedly diminished effect with continued use of the same amount of the substance.
2. Withdrawal, as manifested by either of the following:
   a. The characteristic withdrawal syndrome for the substance or
   b. The same (or closely related) substance is taken to relieve or avoid withdrawal symptoms.
3. The substance is often taken in larger amounts or over a longer period than intended.
4. There is a persistent desire or unsuccessful efforts to cut down or control substance use.
5. A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects.
6. Important social, occupational, or recreational activities are given up or reduced because of substance use.
7. The substance use is continued despite knowledge of having a persistent physical or psychological problem that is likely to have been caused or exacerbated by the substance (e.g., current cocaine use despite recognition of cocaine-induced depression or continued drinking despite recognition that an ulcer was made worse by alcohol consumption).

Substance Abuse

A maladaptive pattern of substance use leading to clinically significant impairment or distress as manifested by one (or more) of the following, occurring within a 12-month period:

1. Recurrent substance use resulting in a failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to substance use; substance-related absences, suspensions, or expulsions from school; or neglect of children or household).
2. Recurrent substance use in situations in which it is physically hazardous (e.g., driving an automobile or operating a machine when impaired by substance use)
3. Recurrent substance-related legal problems (e.g., arrests for substance related disorderly conduct)
4. Continued substance use despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance (for example, arguments with spouse about consequences of intoxication and physical fights).
**Diagnostic criteria for 292.89 Opioid Intoxication**

A. Recent use of an opioid.
B. Clinically significant maladaptive behavioral or psychological changes (e.g., initial euphoria followed by apathy, dysphoria, psychomotor agitation or retardation, impaired judgment, or impaired social or occupational functioning) that developed during, or shortly after, opioid use.
C. Pupillary constriction (or pupillary dilation due to anoxia from severe overdose) and one (or more) of the following signs, developing during, or shortly after, opioid use:
   1) drowsiness or coma
   2) slurred speech
   3) impairment in attention or memory
D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

*Specify if:*

**With Perceptual Disturbances**

**Diagnostic criteria for 292.00 Opioid Withdrawal**

A. Either of the following:
   1. cessation of (or reduction in) opioid use that has been heavy and prolonged (several weeks or longer)
   2. administration of an opioid antagonist after a period of opioid use

B. Three (or more) of the following, developing within minutes to several days after Criterion A:
   1. dysphoric mood
   2. nausea or vomiting
   3. muscle aches
   4. lacrimation or rhinorrhea
   5. pupillary dilation, piloerection, or sweating
   6. diarrhea
   7. yawning
   8. fever
   9. insomnia

C. The symptoms in Criterion B cause clinically significant distress or impairment in social, occupational, or other important areas of functioning.
D. The symptoms are not due to a general medical condition and are not better accounted for by another mental disorder.

(American Psychiatric Association, 2000)