

UNDERSTANDING PRESCRIPTION PAIN MEDICATIONS: ADDICTION, PHYSICAL DEPENDENCE, AND TOLERANCE

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INTRODUCTION

Over the past couple of years there have been a number of high-profile news stories involving pain medications, including physicians being arrested for improper prescribing of pain relievers and celebrities being accused of trafficking such drugs. While these stories have sensationalized the illegal aspects of pain medications, very little has been reported about the value of such drugs. The medications that have received the most attention have been opiate-derived drugs (known as narcotics), such as oxycodone, hydrocodone, and others. A wide variety of prescription medications (referred to as psychotherapeutics) are used non-medically by individuals in the United States—pain relievers make up the largest group of medications being used in such a manner. In fact, according to the 2002 National Survey on Drug Use and Health (NSDUH), the second most common group of drugs used by individuals 12 years and older was prescription drugs for non-medical uses (Substance Abuse and Mental Health Services Administration [SAMHSA], 2003).

This update will focus specifically on the class of drugs referred to as pain relievers/killers, which are opiate-derived medications. The purpose of this update is to provide background information—prevalence rates, basic facts, and relevant definitions—about pain medications. A follow-up practice update will provide information about potential interventions to be used when working with individuals who demonstrate signs and symptoms of narcotic use disorders.

PREVALENCE

Between 1990 and 2001, the initiation of use (“new users”) for pain relievers increased more than 400 percent (SAMHSA, 2003). The increase in the lifetime use of non-medical

oxycodone was more than 400 percent between 1999 and 2001 (SAMHSA, 2002; Smith, 2003). The trends of lifetime use of non-medical pain relievers increased between 2001 (9.6 percent) and 2002 (11.2 percent) among youths 12 to 17 years old, and for young adults aged 18 to 25 the rate increased from 19.4 percent in 2001 to 22.1 percent in 2002 (SAMHSA, 2003). The number of all narcotic analgesics (single- and multi-ingredient form) accounted for 10 percent of all drug-related emergency department (ED) visits in 2002 (SAMHSA, 2003). Overall, the number of ED visit mentions for this class of drugs increased 163 percent between 1995 and 2002. According to the Drug Abuse Warning Network (DAWN) report there was a 107 percent increase in the number of oxycodone mentions in ED visits between 2000 and 2002 (SAMHSA, 2003). Furthermore, the treatment admission rates for narcotic pain relievers more than doubled between 1992 and 2000 (SAMHSA, 2003). While such admissions increased for all age groups between 1997 and 2000, the largest increase occurred among people age 20 to 30.

BASIC FACTS ABOUT NARCOTICS

Pain relievers/killers are narcotics primarily prescribed for their pain-relieving properties and other medicinal purposes. These drugs act by attaching to opioid receptors found in the brain, spinal cord, and elsewhere; thus blocking the transmission of pain messages to the brain (NIDA, 2001). The majority of these drugs are metabolized through the liver. Opioids can produce drowsiness, cause constipation, depress respiration, and result in other side effects. These drugs may also cause euphoria by affecting the part of the brain that mediates what is perceived as pleasure (NIDA, 2001). Figure 1 on the next page provides details about the different names, use for, and effects of narcotic medications.

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FIGURE 1: Commonly Prescribed Narcotics (Opioids): Use and Consequences

<p>Generic (Market) Drug Names</p> <ul style="list-style-type: none"> • Oxycodone (OxyContin) • Propoxyphene (Darvon) • Hydrocodone (Vicodin) • Hydromorphone (Dilaudid) • Meperidine (Demerol) • Piphenoxylate (Lamatil) 	<p>Prescribed For</p> <ul style="list-style-type: none"> • Post-surgical pain relief • Management of acute or chronic pain • Relief of coughs and diarrhea 	<p>Should Not be Used With</p> <ul style="list-style-type: none"> • Alcohol • Antihistamines • Barbiturates • Benzodiazepines • General anesthetics • Other CNS depressants
<p>Effects of Short-Term Use</p> <ul style="list-style-type: none"> • Blocked pain messages • Drowsiness • Constipation • Depressed respiration (depending on dose) 	<p>Effects of Long-Term Use</p> <p>Potential for:</p> <ul style="list-style-type: none"> • Tolerance • Physical dependence • Withdrawal • Addiction 	<p>Possible Negative Effects</p> <p>Following a large single dose:</p> <ul style="list-style-type: none"> • Severe respiratory depression • Death

Adapted from National Institute on Drug Abuse. (2001, July). Prescription drugs: Abuse and addiction. National Institute on Drug Abuse Research Report Series (NIH Pub. No. 01-4881).

RELEVANT DEFINITIONS

Like other prescription medications, opioids can play an important role in treating pain. However, narcotics are often not utilized appropriately due to concerns regarding misuse, addiction, and possible diversion for non-medical uses (Savage, Covington, et al., 2001). Individuals taking these medications may become addicted, become physically dependent, or develop tolerance. Unfortunately these terms are often used interchangeably and can result in confusion for the professional and individuals on such medications. The American Academy of Pain Medicine (AAPM), the American Pain Society (APS), and the American Society of Addiction Medicine (ASAM) developed a consensus document defining the terms “addiction,” “physical dependence,” and “tolerance.”

According to the consensus document developed by AAPM, APM, and ASAM, addiction is defined in the following manner:

Addiction is a primary, chronic, neurobiologic disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations. It is characterized by behaviors that include one or more of the following: impaired control over drug use, compulsive use, continued use despite harm, and craving (Savage, Covington, et al, 2001, p.2).

Addiction does not occur in every instance that opioids (or other addictive prescription medications) are used for the treatment of pain. The phenomenon of addiction is based on a set of idiosyncratic reactions that may occur in certain individuals, often because of genetic predisposition or other factors. While the actual risk of becoming addicted to such

drugs is unknown, it is clear that exposure to drugs that can stimulate the reward center of the brain do not produce addiction in every individual taking narcotics (Savage, Covington, et al, 2001; NIDA, 2001). When individuals are not treated properly for pain, they may exhibit behaviors associated with addiction (e.g., “drug seeking,” or lying to get drugs). These behaviors often diminish once the pain is effectively treated indicating that what may have appeared to be addiction was actually pseudo-addiction.

The AAPM, APM, and ASAM define physical dependence as, “a state of adaptation that is manifested by drug class specific withdrawal syndrome that can be produced by abrupt cessation, rapid dose reduction, decreasing blood level of the drug, and/or administration of an antagonist” (Savage, Covington, et al., 2001, p.2). Physical dependence can develop with long-term use of many classes of medications, including medications not associated with addictive disorders, such as beta blockers, antidepressants, and corticosteroids. Once narcotics are no longer needed (e.g., the pain has been resolved) the level or amount of the medication should be decreased over time (tapered) to prevent the individual from experiencing withdrawal symptoms. It is important that these individuals are monitored during this process to avoid withdrawal phenomena and other affects that may have negative consequences.

Tolerance is defined as, “a state of adaptation in which exposure to a drug induces changes that result in a diminution of one or more of the drug’s effects over time” (Savage, Covington, et al., 2001, p.2). One indication of tolerance is that individuals who are using opioids may need to take higher doses to achieve the same initial effects (NIDA, 2001). The phenomena of tolerance can occur to

both the desired and undesired effect of narcotics, and may develop at different rates for the different effects. With opioids, tolerance to analgesia usually develops more slowly than to respiratory depression, while tolerance to the constipating effects may not occur at all (Savage, Covington, et al., 2001).

Another issue related to the use of narcotic medications is adherence, which is described as the ability to take medications as prescribed (Yagoda, 2004). Adherence to prescription medications, particularly medications that have the potential for addiction, can be assessed by social workers who provide services to individuals on pain relievers. These assessments may include instruments that have been developed for this purpose or through interviews with clients, discussing the prescription directions, actual medication amount being taken, and evaluating pain. Social workers often play a key role in assessing and monitoring medication compliance in a variety of settings, and providing information to help ensure medication adherence.

CONCLUSION

The definitions that are offered in the previous section do not constitute formal diagnostic criteria, but provide a basis for consideration for the issues related to addiction, physical dependence, and tolerance. It is important that social workers have a clear understanding of this terminology when working with individuals who are taking narcotic medications. The definitions of addiction, physical dependence, and tolerance in the consensus document include many of the criteria for substance dependence as described in the *Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV)* created by the American Psychiatric Association (APA). The DSM-IV is often used during the assessment process to develop an appropriate diagnosis of substance use disorders.

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RESOURCES

American Pain Foundation (APF)

APF is an organization that serves people with pain through information, advocacy, and support. The organization has a number of resources geared toward individuals coping with pain, and an electronic newsletter that is provided free of charge. APF is located online at: <http://www.painfoundation.org/>

American Pain Society (APS)

The mission of APS is to advance pain-related research, education, treatment, and professional practice. Information, publications, and other resources are available on the APS Web site at: <http://www.ampainsoc.org/>

American Society of Addiction Medicine (ASAM)

ASAM is a membership organization allows professionals of various backgrounds who work in the field of addiction medicine to join. The organization creates a variety of materials on issues relevant to addiction medicine, some of which are available free of charge online at: <http://www.asam.org/>