Recognizing Signs of Prescription Drug Abuse and Addiction, Part I

Rhea Faye D. Felicilda-Reynaldo

Drug abuse is a chronic public health problem, affecting all levels of society, with potential irreversible consequences. Drug abuse may affect a person’s relationships, employment status, educational opportunities, status in society, and general health and wellness. The initial decision to abuse a drug is often voluntary. However, as the substance’s active chemicals disrupt central nervous system processes over time, the individual’s self-control is challenged and he or she becomes unable to resist the urge to use the drug. This is the start of drug addiction (National Institute of Drug Abuse [NIDA], 2012). However, drug abuse and addiction may be preventable. Systematic reviews on the effectiveness of drug abuse prevention programs delivered through multimedia channels and implemented in schools and communities have shown a potential to reduce a person’s intention to abuse alcohol and other substances (Champion, Newton, Barrett, & Teesson, 2013; Singh et al., 2011).

Prescription drug abuse/misuse is increasing. Nonmedical use of prescription medications, especially opioid analgesics, now is considered an epidemic in the United States (Maxwell, 2011). The National Survey on Drug Use and Health (NSDUH, 2013) reported a significant increase in nonmedical use of prescription psychotherapeutics (14,657 to 16,666, \( p=0.01 \)) and painkillers (11,143 to 12,489, \( p=0.01 \)) across age groups within a year’s time (2011-2012). The top three abused prescription medications, according to the same NSDUH survey, were variants of hydrocodone/paracetamol (9.0%), acetaminophen with codeine (7%), and alprazolam/lorazepam (5.4%).

Prescription drug abuse can lead to severe, even fatal complications depending on the type of medication abused. Stimulant abuse can cause sudden cardiac arrest, high body temperature levels, and seizures. Abuse of opioids can lead to respiratory arrest and coma. Overdose of sedatives can cause respiratory suppression, which could result in death (Screening, Brief Intervention, and Referral Treatment [SBIRT] Colorado, 2014). The Substance Abuse and Mental Health Services Administration (SAMHSA, 2013) reported more patient emergency visits for prescription drug abuse (435/100,000 visits) than illicit drugs (378/100,000 visits) each year. Furthermore, the Centers for Disease Control and Prevention (2011) reported the majority of deaths related to drug overdose are caused by prescription drug abuse.

Medical-Surgical Nurses Role in Assessing Substance Abuse Problems in Patients

Government health agencies, such as NIDA (2010) and SAMSHA in collaboration with the Health Resources and Services Administration (SAMSHA-HRSA) (2014), have stressed the need to screen patients for alcohol and illicit drug use to provide early treatment and reduce risk of development of medical and psychiatric illnesses due to substance abuse. This call has been echoed by nursing groups such as the American Psychiatric Nurses Association (2012). According to the American Nurses Association (2010), assessing patients for health risk behavior, including substance abuse, is within the scope of nursing practice. Since 1999, SAMSHA (n.d.) has encouraged a no wrong door policy, suggesting health care providers in all settings are responsible for assessing patients for substance abuse/misuse and providing treatment directly or through referral.

With their health promotion, communication, and patient education skills, as well as the opportunity to build therapeutic relationships with patients in their daily practice, medical-surgical nurses are in a strategic position to identify at-risk patients and provide intervention in the early stages of substance abuse/misuse (Wilson, 2013). Validated screening tools are available to aid nurses in the assessment process. The SBIRT is an evidence-based tool that uses motivational

Rhea Faye D. Felicilda-Reynaldo, EdD, RN, is Assistant Professor, Department of Nursing, Missouri State University, Springfield, MO; and MEDSURG Nursing Editorial Board Member. For comments and to suggest topics for the “Nursing Pharmacology” column, contact her at FayeFelicilda@missouristate.edu.
interviewing to identify persons with early (nondependent) substance abuse problems or those at risk for developing the illness (SAMSHA-HRSA, 2014; SBIRT Colorado, 2011a). The first step of SBIRT involves asking brief questions about patients’ alcohol and illicit drug use. When patients are screened as positive for substance use, further assessment is initiated using other validated assessment tools, such as the Drug Abuse Screen Test-10 (step 2). Through this step, health care providers get more information about a patient’s health risk behavior. If a patient is determined to be of moderate-to-high risk for abuse, brief intervention is started based on use of motivational interviewing. Alternately, the patient could be referred to substance abuse treatment (SBIRT Colorado, 2011a). The SBIRT Colorado (2011b) website provides a supplemental screening algorithm for patients at risk of prescription drug misuse/abuse.

Researchers found nurse-delivered SBIRT programs to be effective. However, the SBIRT program in these studies focused only on assessing alcohol abuse behavior in patients (Broyles, Rosenberger, Hanusa, Kraemer, & Gordon, 2012; Groves et al., 2010). Further research is needed to address the impact of screening and brief interventions on prescription drug abuse/misuse. Preliminary findings of research on use of SBIRT for prescription drug abuse assessment have been promising (SBIRT Colorado, 2014).

Psychiatric-mental health nurse leaders have recommended integration of SBIRT with routine inpatient nursing care to address the needs of hospitalized patients with concurrent substance abuse problems (Finnell et al., 2014; Wilson, 2013). Assessing patients for substance abuse problems is challenging (Wilson, 2013). Nurses should be observant of patient behaviors and sensitive to patients’ communication cues. Affected patients commonly deny or minimize their substance abuse problems (Harding, 2014). Medical-surgical nurses need comprehensive training on SBIRT to gain skills and comfort to implement the program successfully in their day-to-day practice (Wilson, 2013).

A challenge faced by medical-surgical nurses in screening for substance abuse problems is that patient interviews only can be done when patients are sober (Jarvis, 2012). When patients present to health care settings intoxicated or in withdrawal, nurses should be able to recognize and identify what drug was abused/misused through patients’ signs and symptoms. The pharmacologic properties of potentially abused prescription drugs as well as the effects (therapeutic, adverse, and addictive) they produce in persons taking them are presented in this article. Pharmacologic treatments for intoxication and/or withdrawal states also are presented, and current initiatives for reducing prescription drug abuse and misuse are discussed. The drug abuse potential of opioid and opiate-like medications is the focus of this article. In the second article in this series, which will be published in the next issue of MEDSURG Nursing, the issues of abuse/misuse of prescription stimulants and depressants will be discussed.

**Opioids and Opiate-Like Medications**

Opioids are categorized as Schedule II controlled substances. Schedule II drugs are prescription medications with clinical therapeutic use but with controlled dispensation due to the high likelihood for abuse/misuse (Drug Enforcement Administration [DEA], n.d.). Opioids and opiate-like substances are consistently the most commonly abused/misused prescription medications (NSDUH, 2013). Factors that contribute to the growth of this epidemic of misuse include inappropriate or incorrect prescription, multiple drug sources (both legal and illegal), and late response by the government to the problem at hand (Maxwell, 2011). Also of increasing clinical concern is patients being undertreated for pain; thus prescriptions for opioid analgesics have increased steadily in recent years (Garcia, 2013).

**Indications, Contraindications, and Adverse**

Opioids are derived from the opium plant (Papaver somniferum). The unripe seeds of the opium poppy plant contain 20 natural alkaloids, three of which are harvested for clinical use: morphine and codeine for pain management, and papaverine for smooth muscle relaxation. The pain-relieving alkaloids have been modified chemically to develop synthetic versions of opioid analgesics (Lilley, Rainforth-Collins, & Snyder, 2014). Most opioids are indicated for treating moderate-to-severe pain. Commonly prescribed opioid analgesics include morphine, hydromorphone (Dilaudid®), codeine, oxycodone, and hydrocodone (Vicodin®). Some synthetic forms of opioids, such as fentanyl, also may be used for anesthesia (Clayton & Willihnganz, 2013). Other indications for opioids include cough suppression and control of diarrhea (Lilley et al., 2014).

Opioids bind to opioid receptors within the central nervous system (CNS) to activate endogenous opioid peptides, such as endorphins and enkephalins, and produce a change in perception of pain known as analgesia (Vallerand, Sanoski, & Deglin, 2014). Prolonged use of opioid medications could lead to physical and psychological dependence (DEA, n.d.). The potentially addictive nature of opioids is the result of their activation of the brain reward system (Kee, Hayes, & McCusitson, 2014). When the brain reward system is activated, circuits within the CNS are flooded with dopamine; this neurotransmitter within the brain helps in regulating motion, emotion, motivation, and pleasure (NIDA, 2014). When dopamine levels increase, mood-altering sensations such as euphoria and tranquility occur. These mood-alteration effects are known collectively as narcissis (Lilley et al., 2014).

Opioids are contraindicated in
patients with known hypersensitivity. High doses and long-term use of opioids are contraindicated in pregnant women, as well as in patients with paralytic ileus or a diagnosis of severe asthma or respiratory depression (Vallerand et al., 2014). The adverse effects of opioids are of two types. CNS-related adverse effects, such as confusion, sedation, hallucination, headache, miosis, nausea and vomiting, and respiratory depression, are caused by the activation of opiate receptors (Adams & Holland, 2011; Lilley et al., 2014; Vallerand et al., 2014). Non-CNS-related adverse effects are due to the release of histamine. They include hypotension secondary to vasodilation, which results in skin flushing. Spasms in the colon and ureter lead to constipation and urinary retention. Histamine release also causes sweating and itching (Lilley et al., 2014).

**Intoxication and Withdrawal Signs/Symptoms and Treatment**

Prescription opioids, taken for nonmedical purposes, may be swallowed, smoked, snorted, or taken by subcutaneous or intravenous (IV) injection (Kee et al., 2014; NIDA, 2011; Young, Havens, & Leukefeld, 2010). Taking opioids by other than prescribed routes could result in increased risk for respiratory depression, which could lead to coma or death. When prescription opioids are taken in combination with alcohol, CNS depression is potentiated (NIDA, n.d.). Prescription drug abuse/misuse is especially dangerous for older adults. Elders may have multiple prescriptions for comorbid illnesses, which would increase the possibility of interactions with opioids. Older adults also are at risk for more severe adverse effects due to age-related changes in drug metabolism (Culberson et al., 2011; NIDA, n.d.).

Persons taking opioids experience analgesia and drowsiness within 30 minutes after drug administration. For some, this includes a sense of detachment from the environment. For IV administration, a “rush” of warm feelings starts in the lower abdomen. This typically is accompanied by a sense of euphoria (Kee et al., 2014). When opioids are taken long-term, tolerance to adverse effects of euphoria, respiratory depression, and nausea develop. With increased dosages taken to achieve intended effects, then, there is no corresponding heightening of adverse effects (Lehne, 2013).

**Intoxication.** Patients prescribed opioids for management of chronic pain are most at risk for opioid intoxication or overdose (Garcia, 2013). Research has shown that a diagnosis of chronic pain is associated with nonmedical prescription opioid (NMPO) use, and NMPO use is associated with opioid drug overdose (Bonar, Ilgen, Walton, & Bohnert, 2013). Opioid intoxication or overdose occurs when a person takes a dose much higher than he or she can tolerate, takes the drug through alternate routes (e.g., snorting, snuffing), or ingests the drug with other medications (especially depressants such as alcohol or benzodiazepines) (Centre for Addiction and Mental Health [CAMH], 2012a). Early signs of acute opioid intoxication include inappropriate behaviors, such as an initial rush of euphoria, followed by apathy, agitation, impaired judgment, or dysphoria (Clayton & Willihnganz, 2013). Symptoms of opioid overdose often occur in the classic triad of drowsiness or decreased level of consciousness, bradypnea, and pinpoint pupils (Lehne, 2013). Pinpoint pupils due to miosis may or may not be evident (CAMH, 2012a). Other signs and symptoms may include hypotension, bradycardia, cyanosis, and hypothermia (Fareed et al., 2011).

Opioid overdose is a medical emergency (Lilley et al., 2014). Patients should be monitored closely for any changes as death could occur, especially if they are allowed to sleep (CAMH, 2012a). Naloxone (Narcan®) is the medication of choice for reversing CNS and respiratory depression in opioid overdose (Fareed et al., 2011). A short-acting opioid antagonist, it acts by competitively attaching to opioid receptors within the CNS and thus blocking activation of opioid drug effects (Vallerand et al., 2014). Naloxone could be administered intravenously, intramuscularly, or subcutaneously; however, IV administration is preferred. The dosage used for opioid intoxication reversal is dependent upon the health care provider’s suspicion of the patient’s opioid dependence. If the patient is not suspected of opioid dependency, the initial dose of 0.4 mg may be repeated every 2-3 minutes until he or she responds. For the patient suspected of opioid dependency, a lower initial dose of 0.1-0.2 mg is given every 2-3 minutes until he or she responds (Vallerand et al., 2014).

Patient response to medication should be monitored closely to ensure abrupt withdrawal does not occur. Vital signs and level of consciousness should be assessed frequently (Vallerand et al., 2014). Withdrawal from naloxone administration will be uncomfortable for patients but usually is not life-threatening (Lilley et al., 2014). Signs and symptoms of naloxone-induced opioid withdrawal include nausea and vomiting, abdominal cramps, hyperthermia, hypertension, and restlessness. These may occur within a few minutes of naloxone administration and last up to 2 hours (Vallerand et al., 2014). Artificial airway and emergency crash cart should be immediately available (CAMH, 2012a). The effects of naloxone usually last 45 minutes. If opioid effects last longer, repeat naloxone dosing may be needed (Vallerand et al., 2014). Once patients are awake, alert, and do not exhibit any respiratory complications, they may be discharged after 2-4 hours of observation. However, if patients exhibit pulmonary complications, admission to the medical-surgical or intensive care unit is necessary for prolonged observation (Fareed et al., 2011).

**Withdrawal.** Withdrawal may occur in patients prescribed opioid medications for management of chronic pain in the following situations: missing a dose, tapering of doses, changing from one type of opioid to another, or receiving a
partial narcotic agonist or antagonist (CAMH, 2012b). Patients with opioid withdrawal may present with the following signs and symptoms: diaphoresis, runny nose (rhinorrhea), goosebumps (piloerection), pupil dilation (mydriasis), muscle cramps, joint pain, nausea and vomiting, hypertension, and bradycardia (Lilley et al., 2014). Patients also may present with an intense craving for drugs (CAMH, 2012b).

Withdrawal from prescription opioid medications indicates the patient is already physically dependent on the drug, but physical dependence may not indicate a state of medication addiction (CAMH, 2012b). Withdrawal symptoms may occur 6-12 hours after the last dose of a short-acting opioid, but may not appear until 2-4 days after the last dose of a long-acting opioid (Clayton & Willihnganz, 2013). Signs and symptoms of withdrawal peak in the first 3 days after last use and may persist for a week (Lilley et al., 2014). Drug craving, insomnia, and an ill feeling may last for weeks or months (CAMH, 2012b).

Opioid withdrawal is managed pharmacotherapeutically, with treatment focused on alleviating signs and symptoms of withdrawal (Clayton & Willihnganz, 2013). Nonsteroidal anti-inflammatory drugs are given to alleviate headaches, migraines, and fever. An antiemetic, such as dimenhydrinate (Dramamine®), can be given to control nausea and vomiting, and an antidiarrheal (e.g., loperamide [Imodium®]) prescribed for abdominal cramps and diarrhea (CAMH, 2012b).

For autonomic nervous system symptoms, such as hypertension, tremors, agitation, and sweating, patients are administered an alpha₂-adrenergic agonist medication such as clonidine (Catapres®) (Lilley et al., 2014). A systematic review found administering an alpha₂-adrenergic agonist is effective in improving signs and symptoms of opioid withdrawal in patients compared to placebo; however, alpha₂-adrenergic agonists still are considered less effective than methadone-controlled withdrawal treatment (Gowing, Farrell, Ali, & White, 2014). Clonidine immediate-release is administered at 0.3-1.2 mg per day at the start of the detoxification process. The dosage may be reduced to half of the initial dosage for the next 3 days, and then tapered to 0.1-0.2 mg per day until discontinued (Vallerand et al., 2014). Prior to clonidine administration, the patient’s blood pressure must be assessed. If he or she is hypotensive, the medication should not be given (Clayton & Willihnganz, 2013).

An ironic yet commonly used method for opioid withdrawal/detoxification management involves substituting the abused opioid drug for a long-acting one, such as methadone (Dolophine®) (Clayton & Willihnganz, 2013). Administration of a long-acting opioid medication may suppress withdrawal symptoms and aid with detoxification of the abused substance (Vallerand et al., 2014). Once the patient is detoxified, the dosage of the long-acting opioid is tapered until he or she is drug-free (Clayton & Willihnganz, 2013). On the first day of detoxification, the patient is given 10 mg of methadone by mouth as a test dose. An additional 10-20 mg is given every 4-6 hours within the first 24 hours to suppress withdrawal symptoms and allow stabilization (Clayton & Willihnganz, 2013). The range of daily methadone dosage is 15-40 mg (Vallerand et al., 2014). The same dose is given to the patient for 2-3 days for stabilization, and then tapered (Clayton & Willihnganz, 2013). Methadone maintenance dosing is based on patient assessment. Patients should be referred to federally approved treatment centers for methadone maintenance programs (Vallerand et al., 2014).

More recently, the mixed agonist-antagonist opioid receptor modulator buprenorphine (Buprenex®) has been used to manage withdrawal symptoms of opioid abuse (Clayton & Willihnganz, 2013). Research indicates buprenorphine is more effective in controlling opioid withdrawal symptoms than alpha₂-adrenergic agents. It is similar in effectiveness to methadone management, but may have more advantages due to quicker resolution of withdrawal (Mendelson, 2010). Buprenorphine is administered sublingually. On the first day of treatment, the dose is 8 mg daily; that is increased to 16 mg on the second day. If an additional dose is required for withdrawal symptom suppression, dose adjustments of 2-4 mg per day can be made. The maximum daily dose of buprenorphine is 24 mg sublingually (Drugs.com, 2014).

Prescription for Opioid and Opiate-Like Substances

Prescriptions for Schedule II medications must be typed or written in ink and signed by the health care provider. A prescription for Schedule II controlled drugs cannot be refilled (Lehne, 2013). However, since 2007, DEA has allowed prescribers to write multiple prescriptions of the same Schedule II drug for the same patient on the same day for dispense up to a 90-day supply (U.S. Department of Justice-DEA Office of Diversion Control, n.d.).

Doctor shopping is a current concern in health care. Patients visit multiple health care providers to receive multiple prescriptions of controlled substances for nonmedical use (Worley, 2012). Based on research, doctor shopping alone cannot provide evidence of drug diversion or NMPO use. However, doctor shopping definitely is regarded as a warning sign for prescription abuse or misuse (McDonald & Carlson, 2013). This practice by patients with government insurance results in a financial burden as the government pays for the dispensed medications, the provider visit, abuse treatment admissions, and other hospital visits due to abuse or misuse of prescription drugs (Worley, 2012). According to the U.S. Government Accountability Office (2011), approximately 170,000 Medicare beneficiaries acquired prescriptions in 2008 from five or more health care providers for 12 classes of frequently abused/misused prescription medications.
Prescription monitoring programs (PMPs) were developed to “deter abuse, doctor shopping, and diversion” (Worley, 2012, p. 320). These programs are run by state regulatory, administrative, or law enforcement agencies separate from DEA (National Alliance for Model State Drug Laws, 2014). In the past, multiple copy or triplicate paper prescriptions were used to monitor dispensing of controlled substances in several states. One copy stayed with the provider, another copy went to the pharmacy, and the last copy was reported to the state. For prescriptions written. PMPs have implications for advanced practice nurses with prescriptive authority for controlled substances. Worley concluded use of PMPs can help health care providers detect doctor shopping patient activities and avoid writing prescriptions that could contribute to drug abuse or misuse.

Summary

Medical-surgical nurses are in a strategic position to help address substance abuse problems in patients. Substance abuse screening and assessment programs should be integrated into routine nursing care. Nurses should update their knowledge of pharmacologic properties of commonly abused prescription drugs, their effects on patient health, and treatment protocols for intoxication and withdrawal. Lastly, nurses should support initiatives to curb drug diversion and abuse problems, such as prescription monitoring programs.

REFERENCES


