

Substance Use Disorders, Drug Diversion, and Pain Management: The Scope of the Problem

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Introduction

The practice of dentistry has become increasingly complicated by multiple factors, including increasing numbers of patients with substance use disorder (SUD), patients receiving chronic pain medications, and prescription drug-related crime (see Box 1.1). In January 2012, the Centers for Disease Control (CDC) announced that the USA is experiencing an epidemic of prescription drug-related overdoses with the majority of these involving prescription opioids.¹ Findings from the 2011 National Health and Aging Trends Study reported bothersome pain afflicts half of the community-dwelling US older adult population and is associated with significant reduction in physical function, particularly in those with multisite pain.² National Survey on Drug Use and Health (NSDUH) 2012 data indicate that 6.8 million people aged 12 or older are current nonmedical users of psychotherapeutic drugs and that 4.9 million of these were users of pain relievers.³ The NSDUH 2012 data also indicate

Box 1.1 Factors Complicating the Practice of General Dentistry

- Chronic pain management.
- Misuse of prescription medication.
- SUD associated with prescription medications.
- SUD associated with illicit substances.
- SUD associated with alcohol.
- Psychiatric disorders (diagnosed and undiagnosed).
- Opioid maintenance treatment programs (methadone, buprenorphine).
- Aging population.
- Polypharmacy (use of multiple medications to treat the same condition).
- Patient criminal activity.

that the rate of current illicit drug (e.g., cocaine, marijuana, inhalants) use among persons aged 12 or older was 9.2%. In 2012, the NSDUH survey revealed an estimated 22.2 million persons aged 12 or older were classified as having an SUD in the past year (8.5% of the population aged 12 or older). Other results from this

2 The ADA Practical Guide to Substance Use Disorders and Safe Prescribing

survey are include 2.8 million people were classified as having an SUD of both alcohol and illicit drugs, 4.5 million had an SUD associated with illicit drugs but not alcohol, and 14.9 million an SUD associated with alcohol but not illicit drugs. Overall, 17.7 million had an SUD associated with alcohol and 7.3 million had an SUD associated with illicit drugs.³

The extent of the overlap of pain management, SUD, prescription drug misuse, and drug diversion in the same patient has not been well defined. However, patients commonly present with more than one of these clinical and ethical challenges at any given office visit or hospital admission. Individual motivations and behaviors leading to the abuse, misuse, and diversion of prescription drugs, illicit drugs, and alcohol vary significantly. This chapter will provide an overview of SUD, prescription drug misuse, drug diversion, pain management, and cultural considerations in patients involved in these activities. Key terminology used throughout this book is also defined.

Definitions

Acute Pain

Acute pain comes on quickly, can be moderate to severe in intensity, and generally lasts a short period of time (e.g., from days up to 3 months). Acute pain is considered a beneficial process, warning of potential harm to the body from injury or medical conditions. Acute pain is most commonly nociceptive, modulated by mediators such as prostaglandins, substance P, and histamines, or neuropathic, characterized by alterations in the transmission pathways of nerves.

Addiction

Addiction is a primary chronic disease of brain reward, motivation, memory, judgment,

and related circuitry. Dysfunction in these circuits leads to characteristic biological, psychological, social, and spiritual manifestations that frequently result in destructive and life-threatening behaviors.⁴ Addiction is influenced by multiple factors, including, but not limited to, genetics, environment, sociology, physiology, and individual behaviors.

Addiction is characterized by the inability to consistently abstain, impairment in behavioral control, craving, diminished recognition of significant problems in behavior and interpersonal relationships, and a dysfunctional emotional response. Like other chronic diseases, addiction often involves cycles of relapse and remission. Without treatment or engagement in recovery activities, addiction is progressive and can result in disability or premature death.⁴

Chronic Pain

Chronic pain generally refers to intractable pain that exists for 3 months or more and does not resolve in response to treatment. Some conditions may become chronic in as little as 1 month. Chronic pain may be continuous or reoccurring, persisting for months or even a lifetime. While the exact duration and characteristics of acute and chronic pain may overlap considerably depending on a patient's medical condition, dental practitioners should recognize that specific timelines for the diagnosis of acute versus chronic pain may be integrated into federal and state legislation and into state board regulations to promote safe pain management practices and safe medication prescribing guidelines.

Drug Diversion

Drug diversion may be defined as the intentional transfer of a substance, or possession of a substance, or alteration of legitimate medication orders outside the boundaries designated by the Food and Drug Administration, federal Drug Enforcement Administration (DEA),

or state regulatory board. Drug diversion may involve prescription or over-the counter (OTC) medications or illicit substances. These illegal activities are usually motivated by financial incentives, SUD behaviors, or other activities, such as sharing medications with the intent to help. Examples include a patient selling or giving their prescription medication to someone else, altering the original information on a prescription without the prescriber's consent, or theft of medications.

Drug Misuse

Drug misuse may be defined as taking a prescribed or OTC medication for nonprescribed purposes, in excessive doses, shorter intervals than prescribed or recommended, or for reasons other than the original intent of the prescription. Examples include doubling the dosage, shortening dosing intervals, or treating disorders for which the medication was not prescribed.

Opiates and Opioids

Opiates refer to natural substances derived from the poppy plant. Opioids function in a similar manner to opiates but are either synthetic or partially synthetic derivatives of opiates. For the purpose of this text, the term opioid will be used interchangeably for opiate.

Prescriber–Patient Mismatch

Prescriber–patient mismatch is defined as the inconsistency in treatment goals or expectations of treatment between the prescriber and the patient. Examples include analgesia, sedation, or anxiolysis.

Substance Abuse

Substance Abuse is a maladaptive pattern of chemical use (e.g. alcohol, medications, marijuana, cocaine, solvents, etc.) leading to clinically significant impairment or distress, as manifested by one (or

more) of the following, occurring within a 12-month period:

- Recurrent chemical use resulting in a failure to fulfill major role obligations at work, school, or home
- Recurrent chemical use in situations in which it is physically hazardous
- Recurrent chemically-related legal problems
- Continued chemical use despite having persistent or recurrent social or interpersonal problems caused by or exacerbated by the effects of the chemical

The substance abuse culture consists of individuals whose sole intent is to alter in any number of ways their mood, psychological sense of well-being, physical sense of well-being, or their personal connection with the world around them.⁵

Substance Dependence

Substance dependence may be defined as persistent use of alcohol, other drugs, or chemicals despite having problems related to use of the substance. It is a maladaptive pattern of chemical use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring within a 12-month period:

- Tolerance, as defined by either of the following:
 - a need for significantly increased amounts of the substance to achieve intoxication or desired effect;
 - significantly diminished effect with continued use of the same amount of the substance.
- Withdrawal, as manifested by either of the following:
 - the characteristic withdrawal symptom for the substance (see Chapter 2);

4 The ADA Practical Guide to Substance Use Disorders and Safe Prescribing

- the same (or a closely related) substance is taken to relieve or avoid withdrawal symptoms.
- The substance is often taken in larger amounts or over a longer period than was intended.
- There is a persistent desire or unsuccessful efforts to cut down or control substance use.
- A great deal of time is spent in activities necessary to obtain the substance, use the substance, or recover from its effects.
- Important social, occupational, or recreational activities are given up or reduced because of substance use.
- The substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance.⁵

Substance Use Disorders

In May 2013, The American Psychiatric Association redefined terminology previously used in the Diagnostic and Statistical Manual of Mental Disorders Text Revision (DSM-IV TR) guidelines regarding diagnostic classifications of Substance Dependence and Substance Abuse Disorders. SUD in DSM-5 combines the DSM-IV-TR categories of substance abuse, substance dependence and addiction disorders into a single disorder measured on a continuum from mild to severe. Nearly all SUDs are diagnosed based on the same overarching criteria which have not only been combined, but strengthened. (For example, in DSM-IV TR, a diagnosis of substance abuse previously required only one symptom, in DSM-5 a diagnosis of mild SUD requires two to three symptoms from a list of 11 [see Box 1.2]. SUD may be best described as a continuum of substance abuse and the disease of addiction.⁶

Box 1.2 SUD Symptoms List

- Taking the substance in larger amounts or for longer than you meant to take it.
- Wanting to cut down or stop using the substance but not managing to be successful.
- Spending a lot of time getting, using, or recovering from use of the substance.
- Cravings and urges to use the substance.
- Not managing to do what you should at work, home, or school because of substance use.
- Continuing to use the substance, even when it causes problems in relationships.
- Giving up important social, occupational, or recreational activities because of substance use.
- Using substances again and again, even when it puts you in danger.
- Substance dependence.
- Developing tolerance.
- Developing withdrawal symptoms.

Substance Use Disorder, Drug Misuse, Drug Diversion, and Pain Management in the Dental Community

The terms psychological or psychiatric dependency and addiction are often used interchangeably with SUD, the term used in this book. Although the terms *chemical, medication, drug, substance, chemical substance, or illicit substances* are often used interchangeably, in this book the term *substance* is used when generally referring to products that are being abused or misused. Differences are only likely to occur based on federal and state classifications or medically accepted use.

Substance Use Disorder

Dental practitioners likely observe many patients at various stages of the *substance abuse-disease of addiction* continuum known as SUD. Specific patient behaviors may range from

subtle exaggerations of pain severity with the intent to acquire more medications, to patients presenting in an exaggerated euphoric or dissociative state. Although the impact of opioid abuse and misuse on health care has been evaluated,⁷ the financial and workload burden of these behaviors has not been well characterized in the practice of dentistry. However, in a comprehensive statewide survey of dentists by O'Neil, 75% of dentists surveyed suspected 1–20% of their patients had a drug addiction or drug abuse disorder and 94% of dental practitioners altered their prescribing practices of opioid analgesics if the patient acknowledged an SUD.⁸ These survey results suggest SUD likely impacts patient management and the prescribing practices of dentists.

Medication Misuse

Prescription drug misuse has been identified as a significant health-care problem. Individuals self-medicating with prescription drugs outside of the boundaries of the original intent of the prescription appears to be a significant contributing factor in the development of SUD. Recent survey data from the SAMSHA in 2012 indicated 6.8 million Americans aged 12 or older (or 2.6%) had used psychotherapeutic prescription drugs without a prescription or in a manner or for a purpose it was not prescribed in the past month.³ Individuals may misuse drugs by self-prescribing unused or expired drugs. The impact of self-medicating with prescription drugs by patients for dental procedures or dental pain has not been well described in the USA. Excessive opioid prescribing by dental practitioners has been suggested in the dental literature, and these surveys have reported a wide dosing range of opioid analgesics for identical or similar dental procedures.^{9,10} Multiple factors may influence excessive prescribing (see Box 1.3). Dental practitioners should be aware of prescription medication misuse and abuse behaviors (see Box 1.4). These behaviors are

Box 1.3 Potential Influential Factors of Excessive Prescribing

- Limited guidelines for appropriate drug and dosage selection for specific disease states or dental procedures.
- Subjectivity of individual patient or dentist's perception of pain severity.
- Patient assertiveness or aggressiveness toward prescriber.
- Complicated patient pathology.
- Lack of knowledge of pharmacologic principles and treatment options.
- Prescriber–patient mismatch.
- Provider availability.
- Patient or prescriber convenience.

Box 1.4 Common Prescription Drug Misuse and Abuse Behaviors in Dental Patients

- Requesting refills or running out of medications early.
- Repeated frequent or unnecessary office visits.
- Obvious powder or tablet fragments in nostrils.
- Impaired patients at initiation of office visit.
- Request from members of the family (spouse, parent) or patient's friends (boyfriend, girlfriend) for more medications.
- Family members or patient friends demanding to be present when asking for medications (excluding young children).
- Patients reporting multiple allergies to **only** less potent opioids and nonsteroidal anti-inflammatory drugs (NSAIDs).

discussed in more detail in Chapter 8. Ultimately, the most effective pharmacological agent, with minimal side effects or adverse effects, should be prescribed with the lowest dose possible for the minimal amount of time to achieve a reasonable effect such as analgesia, anxiolysis, or sedation. The impact of SUD on dental health and the dental community will be discussed in Chapter 6.

6 The ADA Practical Guide to Substance Use Disorders and Safe Prescribing

Clinical Consideration

Prescribing of any medication requires comprehensive patient histories, examinations, screening prior to prescribing or dispensing medications, and patient education regarding medication misuse.

Alcoholism

Alcohol-related SUD is the most common of all SUDs in society today. In 2012, the NSDUH found that slightly more than half (52.1%) of Americans aged 12 or older reported being current drinkers of alcohol.³ This information translates to an estimated 135.5 million current drinkers in 2012.³ Other results in this same survey indicated nearly one-quarter (23.0%) of persons aged 12 or older were binge alcohol users in the 30 days prior to the survey. This translates to about 59.7 million people. Heavy drinking was reported by 6.5% of the population aged 12 or older, or 17.0 million people.³ The cost of excessive alcohol consumption in the USA in 2006 reached \$223.5 billion according to the CDC in a 2006 study.¹¹ The CDC defines excessive alcohol consumption, or heavy drinking, as consuming an average of more than one alcoholic beverage per day for women, and an average of more than two alcoholic beverages per day for men, and any drinking by pregnant women or underage youth.¹¹ The exact costs of alcohol abuse and addiction to the dental health-care system have not been well elucidated. Because many dental patients are seen routinely for preventive as well as treatment services, dental practitioners may have the greatest opportunity to recognize potential alcohol SUD behaviors. This recognition at a minimum should result in a recommendation or referral to a local substance treatment center, substance abuse counselor, or primary-care physician for evaluation. See Box 1.5 for common signs and symptoms of potential alcohol-associated SUD. Chapter 2 will discuss the diseases of alcoholism and other SUDs.

Box 1.5 Common Signs and Symptoms of Potential Alcohol-Associated SUD

- Alcohol odor on breath or clothes during normal day hours.
- Slurred speech.
- Oversedation *before* office procedures start.
- Clumsiness, imbalance while walking.
- Unexplainable loud and argumentative behavior.
- Reduced effects of anesthetics during procedures.

Drug Diversion

Drug diversion presents in various forms, from simple self-prescribing and using someone's leftover prescription medications, to criminal activity to acquire more medications to sell or abuse. The penalties and punishments for these behaviors vary significantly.

Box 1.6 lists the most common types of drug diversion. For the purpose of this textbook,

Box 1.6 Common Types of Drug Diversion

- Counterfeit medications/misbranding.
- Robbery/burglary.
- Trafficking/transport of illegal medications.
- Prescription forgeries (written or verbal)
- Sharing prescription medications.
- Internet scams avoiding state, federal, and national drug control regulations.
- Fraudulent or "fake" patient schemes, injuries, or complaints.
- Selling prescriptions or prescription medications.
- Personnel/office staff theft of medications from offices, hospitals, stock supplies.
- Doctor/dentist/pharmacy shopping with intent to deceive.
- Knowingly overprescribing medications by prescribers.
- Health-care fraud.
- Extortion/coercion.
- Self-prescribing leftover medications/misuse.

information provided will focus on common prescription drug diversion methods related to dental practices. An important concept for all health-care practitioners to understand is that an individual demonstrating specific drug diversion behavior frequently may not have an SUD. Various drug diversion behaviors are commonly motivated by other factors, such as financial incentives or sex.

Dental practitioners are likely to be victims of fraudulent patient schemes, written or phoned-in prescription forgeries or “dentist/pharmacy shoppers with the intent to deceive the dental practitioner or pharmacy.” The actual impact of drug diversion behavior on the dental community is not well defined. However, a statewide survey by O’Neil revealed that nearly 60% of dentists surveyed suspected they were victims of prescription drug diversion or fraud by their patients by methods such as theft of prescription pads, fake phoned-in prescriptions, altered refill or pill quantity on prescriptions, or false “stolen prescription” reports.⁸ When taking this information into consideration, time spent addressing these aberrant patient behaviors by dental practitioners and their office staff likely would have a significant impact on dental practitioner and office staff time. Chapter 8 will discuss in greater detail the various patient drug diversion schemes and scams as well as intervention and prevention strategies. Chapter 11 will discuss *dental practitioner* behaviors frequently involved in SUD.

Pain Management in Dentistry

Effective prevention and minimization of pain is a primary focus of all dental practitioners. Prescriptions for analgesics lead the list of prescribed medications by dental practitioners. Most prescribing is for acute pain, although occasionally analgesics or muscle relaxants may be prescribed for more chronic pain conditions, such as trigeminal neuralgia or temporomandibular joint disorders. Acute pain management in dentistry may be influenced by underlying chronic, nondental-related pain,

diseases, or injuries. Although the reported incidence of chronic pain in the USA varies, most pain specialists would agree that at least 100 million Americans suffer annually with chronic pain.¹² As life expectancies continue to increase in the USA, dental practitioners should expect an increase in patients on *chronic* analgesics for chronic pain now requiring medications for acute pain management. Similarly, the opioid-addicted population continues to rise, and many of these patients are maintaining a successful addiction recovery through opioid-based treatment programs with methadone or buprenorphine. Chapter 4 will discuss dental treatment considerations for acute pain in patients receiving opioid therapy for chronic pain and opioid-based addiction treatment.

Although the actual medications used to manage dental-associated pain are generally limited to two major classes of medications, (NSAIDs and opioid analgesics, actual prescribing patterns may vary considerably between practitioners prescribing for the same indication. Multiple factors certainly influence the quantity of medications and duration of pain medication therapy. See Box 1.7 for a list of some common considerations that may influence analgesic prescribing. Unless otherwise contraindicated, NSAIDs remain the first-line

Box 1.7 Common Considerations That May Influence Analgesic Prescribing

- Complexity of dental pathology.
- Perceived physical forces required for extractions and procedures.
- Duration of procedures.
- Combined pathologies, such as injury and infection.
- Patient pain sensitivity.
- Patient allergies and medication tolerance.
- Drug–drug interactions.
- Drug–disease interactions.
- Underlying diseases.
- Patient analgesic preferences.
- Prescriber analgesic preferences.

8 The ADA Practical Guide to Substance Use Disorders and Safe Prescribing

drug therapy of choice for most dental pain, including prophylaxis, dental-procedure-induced pain, infection, or structural damage.¹³ However, many dental practitioners remain reluctant to prescribe them as first-line agents. Variability in analgesic prescribing in dentistry will likely be reduced as national and state regulatory boards continue to promote “best practices” for pain management and as evidence-based studies are published in the dental literature. Chapter 3 will further discuss acute pain management considerations in dental practice.

Understanding the Cultures of Substance Use Disorder, Drug Misuse, and Drug Diversion

Individuals’ motivations leading to the abuse, misuse, and diversion of drugs vary significantly. Although most health-care practitioners, licensing boards, and law enforcement agencies focus their efforts on controlled substances under DEA regulation, it is important to recognize that a significant amount of prescription and OTC drug misuse, abuse, and diversion occurs with drugs such as muscle relaxants, anticonvulsants, antipsychotics, and antibiotics not regulated by the DEA. Understanding the cultures associated with these behaviors is a key step to help facilitate education, treatment, and prosecution of these individuals. The cultures of SUD, drug misuse, and drug diversion can be divided into four categories. Each culture has its own characteristics. These categories include the sharing culture, the income-driven culture, the substance abuse culture, and the addiction culture. Categories may be identified based on the *intent* of the individual. Each category can be further divided to identify subpopulations.¹⁴

The Sharing Culture

The sharing culture may be defined as the giving, lending, or borrowing of prescription medication to anyone *other than* whom

the prescription was intended. The intent of the sharing culture is to help treat illness, symptoms of an illness, or a perceived psychiatric or physical problem that may or may not have been appropriately diagnosed by a health-care practitioner. The sharing culture is characterized by the patient’s perception that prescription medications are safe simply because the medical or dental practitioner prescribed them and a pharmacist or prescriber dispensed them. There is little recognition that the sharing of prescriptions is illegal and a type of drug diversion. Sources of these medications include leftover prescriptions, expired medications, or discontinued medications. Subcategories include adult-to-adult sharing or adult-to-child/adolescent sharing.¹⁴

The Income-driven Culture

The income-driven culture consists of patients, prescribers, and pharmacists. Medication theft, prescription forgeries, dentist/doctor/pharmacy shopping, and illegal Internet acquisition of medications are all methods individuals use to obtain prescription medications. The income-driven culture is motivated by financial gain and items or services that may be traded, such as other drugs or sex. However, at the community level, prescription drug sales may be a major source of income that an individual uses to pay utility bills or to buy food. Other characteristics include individuals who may never abuse any of the drugs they sell nor have they been diagnosed with legitimate medical or dental problems.¹⁴

The Substance Abuse Culture

The substance abuse culture consists of individuals whose sole intent is to alter in any number of ways their mood, psychological sense of well-being, physical sense of well-being, or their personal connection with the world around them. This culture can be further categorized into two subgroups: experimenters

and mood modifiers. Experimenters try substances to evaluate whether or not they “like” or “dislike” the way a substance makes them feel. If the experience is perceived as positive and then leads to a more routine use of the substance, the individual may be categorized as a mood modifier. Mood modifiers may use these substances to enhance social, academic, or work performances. Prolonged abuse or misuse of substances by mood modifiers frequently leads to the disease of addiction.¹⁴

The Addiction Culture

The addiction culture consists of individuals who meet the diagnostic criteria for this disorder. Addiction behaviors may include substance seeking, compulsion to use, loss of control, craving, and continued use in spite of known negative consequences. This culture may be further divided into active addicts, who are abusing medication and not in recovery, and addicts who are in recovery. These categories may be further divided based on selective substance use behaviors.¹⁴

Combinations of Cultures

In reality, it is not unusual for dental practitioners to have patients in more than one culture. For example, active addicts may share their medications with friends or family to minimize withdrawal symptoms between “highs.” An individual may also sell part of their own prescription in order to obtain food for their family while maintaining their own drug habit with the remaining drug. The complexity of these cultures makes identification, prevention, treatment, and prosecution difficult. Dental practitioners and their office staff are likely to interface with all types of professionals involved in dealing with these various behaviors.¹⁴ Box 1.8 contains a list of resources that dental practitioners and office staff can interface with when necessary to optimize patient outcomes or simply report aberrant behaviors.

Box 1.8 Office Ready-Access List for Dental Practitioners

Law enforcement/regulatory agencies

- Local police department.
- State drug task force.
- DEA.
- State Board of Pharmacy.
- State dental board.

Specialists

- Addiction specialist for methadone/buprenorphine.
- Pain specialist.
- Community pharmacist.
- Substance abuse counselor.
- Local addiction treatment centers.
- Drug information center/poison center.
- Local hospital or emergency room.

Summary

In summary, dental practitioners are at the center of a very complex, demanding profession that requires, at a minimum, significant skills in dental and surgical procedures, knowledge of medical diagnoses, recognition of concurrent medical and psychiatric disorders, advanced communication and interview skills, and advanced knowledge in pharmacology, pharmacotherapy, pain management, drug diversion, and SUD. Dental practice is further complicated by the multitude of social issues and personalities of patients who visit the dental practitioner’s office daily and cause difficulties in the dental practice. Safe prescribing of medications and recognition of SUD must be accomplished by dental practitioners staying up to date and knowledgeable about federal and state regulations. The following chapters will serve as a clinician’s guide to help dental practitioners understand and successfully practice fundamental concepts involving SUD, pain and sedation management, and drug diversion

10 The ADA Practical Guide to Substance Use Disorders and Safe Prescribing

prevention. These chapters will emphasize outpatient management of dental patients.

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