Opioids and the Workplace

Opioids and Addiction

Opioids are a class of drug that includes prescription painkillers and heroin. These drugs are derived from, or closely mimic, the pain-relieving compounds found in the substance opium and can be produced in natural, synthetic, or semi-synthetic forms. Common forms of natural and semi-synthetic opioids include morphine, codeine, heroin, hydrocodone, oxycodone, and hydromorphone. Synthetic opioids include methadone, demerol, and fentanyl.

Prescription opioids are a widely used method of treating moderate to severe, acute, and chronic pain. When used under a healthcare provider's supervision and in accordance with opioid prescribing guidelines, they can be an effective treatment. However, they also have great potential for dependence, recreational misuse, development of an opioid use disorder (OUD), and fatal overdose. These dangers are associated with how and how much of an opioid is taken. Methods of misuse include taking the drug in a way other than prescribed, taking someone else's prescription medication, or taking medicine for the pleasurable effects it provides. Any use of illicit opioids, like heroin, is considered misuse. Negative outcomes related to misuse increase when opioids are ingested in ways other than swallowing, such as being crushed and injected or snorted. These methods deliver an increased concentration of the opioid and amplify the risk of overdose.

Immediate side effects of opioid use can include drowsiness, nausea, constipation, confusion, and dizziness. Serious side effects, often as a result of opioid misuse or opioid interaction with another substance, can include clammy skin, weak muscles, low blood pressure, and slowed breathing. In extreme circumstances, this can lead to a coma or death by overdose.

A person can become physically dependent on opioids when taking them at a high enough dose for more than a few days. Physical dependence involves the body's natural adaptation to regular exposure to the substance, leading to tolerance or withdrawal. Tolerance means a person needs more of the drug to produce the same effect. Withdrawal is a negative series of symptoms that includes nausea, vomiting, diarrhea, agitation, and pain, that occurs when a person stops taking an opioid. There is a difference between physical dependence and the disease of addiction.

Opioid Use Disorder Symptoms[1]

An OUD diagnosis is applicable to a person who uses opioids and experiences at least two of the following 11 symptoms in a 12-month period:

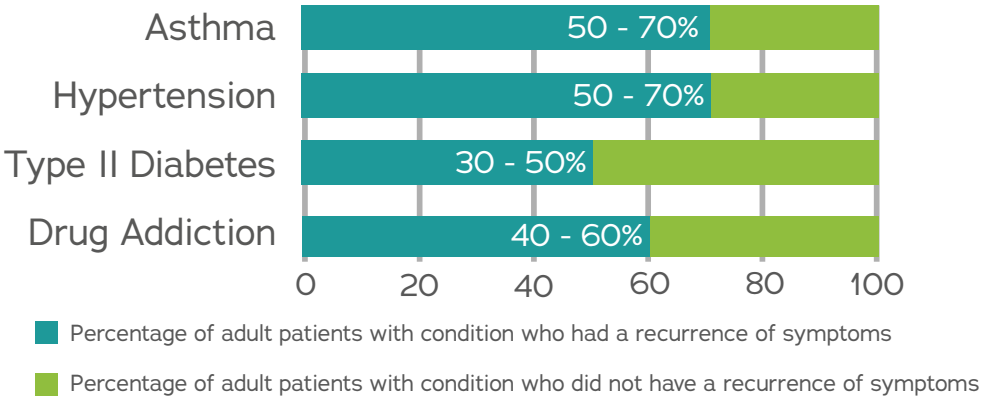
- Taking in larger amounts than intended
- Desire to control use or failed attempts to control use
- Significant time spent obtaining, using, or recovering from the substance
- Craving for the substance
- Failure to meet obligations
- Social and interpersonal problems
- Activities given up or reduced
- Physically hazardous use
- Physical or psychological problems likely caused by use
- Tolerance
- Withdrawal

Tolerance and withdrawal are not considered OUD symptoms when an opioid is being taken as prescribed.

When a person has subjective distress or objective reduction in functioning because of opioid use, they may meet the criteria for OUD. The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) categorizes OUD on a spectrum of severity: mild, moderate, or severe. The DSM-5 provides a list of criteria for behavioral health professionals to reference when diagnosing mental health or substance use disorders (SUD). Severe OUD is consistent with the chronic brain disease of addiction. OUD is a chronic and treatable disease requiring medical intervention. Similar to other chronic diseases, it often involves cycles of worsening symptoms and remission.

Although opioids work the same in all brains, not all individuals who take or misuse opioids will develop OUD. A person can become dependent, tolerant, or experience withdrawal on opioids without ever experiencing the symptoms associated with OUD. Complex interactions between a person's environment and biology present risk and protective factors for individuals in developing OUD and its resulting clinical course. These factors do not determine whether or not an OUD will develop; however, they can interact to minimize or maximize the likelihood of its development.

The Recurrence of Symptoms is Similar for Addiction and Other Chronic Illnesses



SOURCE: McLellan AT, Lewis DC, O'Brien CP, Kleber HD. Drug dependence, a chronic medical illness: implications for treatment, insurance, and outcomes evaluation. JAMA. 2000;284(13):1689-1695.

Opioids in the Brain

Opioids work by activating receptors in the body to block feelings of pain. The addictive nature of opioids is derived from their effect on the brain's natural reward circuitry. Opioids produce an excess of dopamine; a neurotransmitter that contributes to feelings of pleasure and satisfaction. Opioids can produce feelings of relaxation, euphoria, and being "high." The human brain is wired to repeat actions associated with these feelings and to avoid associated feelings of withdrawal; therefore, this excess of dopamine positively reinforces opioid-taking behaviors and biologically wires individuals to repeat them. With repeated exposures, a person's brain circuitry and chemical systems are altered, affecting cognitive, emotional, biological, and social functions. Unlike substance misuse, addiction is a chronic brain disease. There are changes in specific areas of the brain which have been found to correlate with the behavioral manifestations we observe in people with addiction. While these brain areas trend back towards normal if the brain is not exposed to the drug of abuse, science has not shown a full return to normal in brains of people who have addictive disease.

Prevention, Treatment, and Recovery

Three types of parallel services for opioid misuse and OUD are prevention, treatment, and recovery. Intervention at each of these levels is important for a complete and effective response to minimizing the risks associated with opioid use. These services can occur at any time during a person's experience.

Prevention

Prevention involves measures to avoid misuse and dependence by reducing medical and non-medical exposure to opioids. Prevention of developing complications once a person has developed addiction can also include harm reduction services that aim to reduce the likelihood of negative consequences or death as a result of opioid use. These can include needle exchanges and naloxone for overdose prevention.

Treatment

Treatment involves diagnosis and professional treatment of individuals with OUD. Evidence-based treatment for OUD can involve several treatment modalities that address biological, social, and psychological issues within the individual. This includes Medication for Opioid Use Disorder (MOUD) and individual and family behavioral therapies. These modalities can be supplemented by recovery support services. As defined through the American Society of Addiction Medicine (ASAM) criteria, treatment can be carried out on a variety of inpatient or outpatient levels, depending on the individual's situation, substance of use, and required intensity of care.

MOUD, commonly referred to as Medication Assisted Treatment (MAT), is more effective in reducing illicit opioid use, keeping people in treatment, and reducing risks of overdose than in treatment without.[20] There are three types of approved medications: methadone, naltrexone, and buprenorphine. These three drugs are available under a variety of brand names as approved by the Food and Drug Administration (FDA). Each of these medications works differently, presenting their own risks and benefits, and should be discussed and made available to treat anyone diagnosed with OUD. It is important to note that the use of prescribed FDA-approved MOUD as part of treatment is consistent with the definition of abstinence.

MOUD can be supplemented with behavioral therapies or counseling. Behavioral therapies and counseling services for OUD can help change attitudes and behaviors associated with use, build healthy life skills, and support adherence with other forms of treatment. It can be provided by physicians as part of an individual's medical visit, but some people may require or benefit from specialized counseling services provided in individual or group settings. This counseling can be offered to individuals who are using opioids, as well as their friends and family.

Medication for Opioid Use Disorder (MOUD)

Methadone | Methadone treats withdrawal symptoms, blocks effects of opioids if they are simultaneously ingested, and reduces cravings. It can only be dispensed and administered in federally certified, accredited opioid treatment programs (OTPs.)

Naltrexone | Naltrexone blocks the effects of other opioids and reduces cravings for opioids. It can be prescribed by any licensed healthcare provider and depending on how its administered, can be taken in or out of a provider's office.

Buprenorphine | Buprenorphine treats withdrawal symptoms, blocks effects of opioids if they are simultaneously ingested, and reduces cravings. It can only be prescribed by physicians and advanced practice clinicians that have a federal waiver to do so.

Another potentially helpful supplement to treatment is recovery support services. These services are not clinical in nature but are often provided by trained volunteers or other people who are in recovery. These supports include assistance with navigating systems of care, removing recovery barriers, staying engaged in the recovery process, and providing a source of community.

People with OUD should have access to all of these services at all levels of treatment, allowing them to find the approach that best fits them. However, there is strong science for supporting the effectiveness of MOUD, and it should be considered as the status quo for treatment.

Remission is the goal of medical treatment for chronic disease and involves the person having no signs or symptoms of active disease. While remission is a goal, people with chronic diseases often have periods of worsening symptoms. People who are actively in treatment may not be in remission at all times. Since OUD is a chronic disease, people often need ongoing care at some level.

Recovery

Unlike acute illnesses, recovery for a person with a chronic disease involves active ongoing self-management that often requires the help of biological, psychological, and social supports. The Substance Use and Mental Health Services Administration (SAMHSA) defines recovery as "a process of change through which individuals improve their health and wellness, live self-directed lives, and strive to reach their full potential." The process of recovery is a very personalized process that is built on the individual's own characteristics and resources and is a much broader concept than medical remission for any chronic disease.[14]

The Opioid Crisis

On October 26, 2017, a nationwide Public Health Emergency was declared by the U.S. Department of Health and Human Services in response to the growing crisis of opioid misuse and overdose.[19] Individuals, families, and communities across the nation continue to face significant emotional, social, physical, and financial impacts.

In 2017, opioids contributed to more than an average of 130 deaths per day - a six-fold increase from 1999.[6] Most of these deaths occurred in individuals between the ages of 25 and 55 – a group primarily of working age adults.[22] The White House Council of Economic Advisors estimates that the total economic cost of the crisis in 2015 was $504 billion, 2.8% of that year's GDP.[23] Other unintended consequences of this crisis include compromised mental and physical health, as evidenced by an increase in the prevalence of conditions such as neonatal abstinence syndrome, infectious diseases, suicide, and depression.[19] The safety of communities is also threatened with an associated increase in crime and violence, motor vehicle crashes, and child neglect.[19] The causes of this crisis are multi-faceted and have been developing over the course of many decades.

A contributing factor to this crisis is the stigma that persists not only around opioids, but around prevention, treatment, and recovery services. The belief that addiction is a moral failing and fueled by personal choice has been widespread and long-held. This unfortunate and incorrect belief has deterred individuals from accessing services that are necessary to their recovery due to fear of judgment or reprimand. Additionally, this stigma supports the continued separation of addiction treatment from the traditional healthcare system. To reduce this stigma, there needs to be a cultural shift towards understanding addiction as a chronic disease requiring compassion and evidence-based medical intervention.

As the opioid crisis has progressed, a crisis around pain has been co-evolving. Despite there not being an overall change in the number of Americans reporting pain, the number of prescriptions for opioids quadrupled from 1999 to 2014.[6] In the 1990's, opioids gained popularity as a quick, effective, and first-line method of treating pain. Although opioids can be an effective component of certain conditions' treatment plans, there are also risks. This was demonstrated through the increased incidence of opioid misuse, opioid use disorder, and opioid-related overdose deaths n subsequent years.

In response to the current opioid epidemic, the healthcare sector has placed a heavy emphasis on improving responsible prescribing of prescription opioids. In 2016, the Centers for Disease Control and Prevention (CDC) released guidelines for appropriately prescribing opioids to those who had not previously used them. These guidelines have been successful in reducing inappropriate prescribing, however systemic barriers to accessing comprehensive evidence-based pain management options, and knowledge deficits in healthcare about proper pain care have left limited options for many people with pain.

At the individual level, pain can be a lifelong challenge. At the population level, pain is a significant public health problem. The Centers for Disease Control and Prevention (CDC) reports that in 2016, an estimated 20.4% of US adults had chronic pain and 8% of adults had high-impact chronic pain.[7] Some groups are disproportionately affected by pain as well as have less access to pain-related treatment. A higher prevalence of pain is associated with increasing age, poverty, rural residence, and unemployment.[7]

Today, a multi-sector approach has been taken to prevent opioid exposure and related overdoses as well as increase access to OUD treatment options. Progress is being made; however, this same approach must be applied to addressing an upstream cause of opioid use – pain. Opioids can be part of an effective treatment plan for certain conditions. However, comprehensive evidence-based pain management, including opioid prescribing and tapering, must be advanced in order to decrease opioid related harms while ensuring people experiencing pain are receiving appropriate care.

Opioids and Pain

Biology of Pain

Acute pain is an unpleasant yet normal and necessary experience. As part of an evolutionary process, pain can act as a warning sign in response to a harmful stimulus. The unpleasant quality of the sensation prompts individuals to act in a way that limits damage or heals the pain, whether that be withdrawing a hand from a hot stove-top or seeking medical treatment for a broken bone. At its core, pain protects people from incurring damage from adverse internal or external factors. Without pain, people would not be aware of damage that has occurred to their body and be able to appropriately respond. Although pain is a necessary part of the human experience, its persistence can result in a decreased quality of life.

Pain is often a symptom rather than a diagnosable condition. Its classification is complex and different types occur through unique mechanisms in the body. Acute pain is sudden in onset and is a time limited physiological response to tissue damage caused by a variety of conditions such as trauma, burn, musculoskeletal injury, neural injury, as well as pain from surgery or other procedures. Chronic pain often begins as acute pain; however, it is persistent and recurrent, lasting longer than three months. The long held belief is that in some persistent cases, pain can cause neurological changes in the body that lead to pain even without bodily damage. However, new research is challenging this view by identifying improper coordination and combination of care and unaddressed underlying conditions as the cause for persistent pain.

Pain's pathway in the body is complex and involves many systems. Nociceptive pain arises from tissue damage and acts by sending a message from the tissue through the nervous system to the brain. This type of pain is impacted by the body's movement, position, and load. Examples include musculoskeletal injuries such as strains and breaks, or injuries to the skin such as burns and stings. Neuropathic pain arises from damage directly to the nervous system and often presents itself through burning or stabbing sensations. An example of this pain that most people have experienced is hitting a "funny bone," however other experiences result from instances of disease such as multiple sclerosis or opioid addiction, or medical treatments such as chemotherapy. These two types of pain can, and often do overlap. Separate from neuropathic pain is hyperalgesia - pain related to nervous system dysfunction. When experiencing this type pain, an individual's nervous system is communicating signals of pain to the brain in a way that is not consistent with the actual danger of the stimulus. This results in significantly increased severity of pain.

The Pain Pathway

When tissue damage or an injury occurs, a signal is sent to the nervous system.

Neurons in the nervous system interpret this signal, and send information to the brain.

The brain interprets this information and in turn, directs the body how to react.

Pain Treatment

The way each person experiences pain is dependent on an intricate network of biological, psychological, and social factors. This network determines pain severity, how it evolves, and what treatment pathway will be effective. An initial evaluation that considers medical and biopsychosocial factors related to a patient's pain is an important component to ensuring comprehensive care. Determined by this evaluation, an individualized, multidisciplinary, and multi-modal approach is most effective for managing pain.

Fundamentally, chronic pain is a chronic injury, and focusing on the origins of pain is the first step to relieving it. A multidisciplinary approach facilitates that process by addressing the different personal aspects that contribute to painful conditions, including biological, psychological, and social factors. A multi-modal approach involves the synergy of different clinical disciplines in a pain treatment plan,

Biopsychosocial Model

Biological | Several biological factors can influence how someone's body responds to injury and therefore experiences pain; including age, genetics, hormones, weight, and damage from the condition causing the pain.

Psychological | The brain centers that cope with pain and mood overlap, so psychological factors such as mood, stress, trauma, and coping skills can all impede or facilitate pain. Conversely, experiencing pain can also have a significant impact on one's psychological state.

Social | Social determinants of health have a role in the progression of pain-related conditions. These include the economic and social factors that influence differences in health among certain groups.

including medication, restorative therapies, interventional procedures, behavioral health approaches, and complementary or integrative health. An individualized approach involves the person experiencing pain being treated in the way that best fits their definition of success and functional improvement.

To accomplish this, integrated care is necessary. Integrated care involves primary, mental health, and substance abuse care being systemically coordinated. Traditional healthcare is often siloed and relies on specialists to treat different aspects of patient's health; however encouraging a team-based approach to a patient's treatment plan can optimize patient outcomes and experience. The complexity of pain treatment not only requires the presence and coordination of a number of providers on this team, but also the right sequence and combination of the care that they provide. Patient navigators can be particularly valuable in coordinating appropriate care. There is evidence to support that this integrated approach reduces the severity of pain and improves function and overall quality of life.[21]

Medication | Multiple classes of medication can be used for managing pain with the goal of ensuring patients have access to the most appropriate treatment to minimize their adverse outcomes while enabling a better quality of life. These medications can include opioid and non-opioid options.[21]

Restorative Therapies | Restorative therapies are focused on movement modalities, including those administered by physical therapy and occupational therapy professionals. Examples include traction, bracing, ultrasound, and therapeutic exercise.[21]

Interventional Procedures | Available as both diagnostic and therapeutic modalities for pain, interventional approaches are minimally invasive interventions that alleviate pain and facilitate repair. Varying in intensity, these procedures can include joint injections, steroid injections, stem cell-based therapy, and more.[21]

Behavioral Health Approaches | Treatment outcomes can be significantly improved by addressing psychological, cognitive, emotional, behavioral, and social aspects of pain. Examples include cognitive behavioral therapies and mindfulness-based stress reduction.[21]

Complementary and Integrative Health | Complementary and integrative approaches to health involve practices such as acupuncture, tai chi, yoga, and massage.[21] These are typically successful integrated with the other listed modalities.

Barriers to Pain Treatment

People experience many barriers in treating their pain. The number of a Americans living with pain is far outpacing the number of physicians who are certified pain specialists. Because of this shortage, an increased responsibility is put on primary care providers to address pain despite inadequate time and resources.

Additionally, insurance coverage and provider reimbursement for integrated, multimodal pain management services are often insufficient. Clinical direction for payer guidelines is often outdated and inconsistent, impeding the delivery of adequate, timely, and affordable treatment while negatively impacting patients

financially and psychologically. Although an individualized, multidisciplinary, and multimodal approach is most effective for managing pain, current payment models do not support this approach.

At a cultural level, there are misunderstandings about what it means to experience pain. Taking a biopsychosocial approach to treating pain often takes significant time and effort on behalf of patients and providers. However, past and present healthcare ecosystems have often perpetuated a more passive, or "quick-fix" approach to pain treatment. This approach does not consider whether the underlying condition causing pain has been resolved or whether the patient's desired functional status has returned, but rather only if the symptom of pain has increased or decreased.

Workplace Impact and the Employer Role

Not only are individuals, families, and communities experiencing challenges related to the opioid crisis, but workplaces are as well. In fact, nearly 70% of workplaces are experiencing the impact of the crisis.[9] The stress, co-morbidities, and extenuating difficult circumstances that accompany these individual and community-wide challenges manifest themselves directly through work in multiple ways including safety, absenteeism, productivity, retention, and healthcare spend. General opioid use, tolerance, and dependence also carry workplace risks. They are not strictly associated with workers who have OUD or addiction.

As individuals' first exposure to opioids is often related to relieving pain, the workplace impact must also be considered. Whether an employees' duties involve sitting at a desk or repetitive movements for hours pr day,, pain is a common experience among today's workforce. Experiencing pain can negatively affect multiple aspects of an individual's life, including their psychological health, relationships, sleep, physical activity, self-esteem, and work.[21]

Safety | Opioid use can be associated with increased injury in the workplace. Employees using opioids to treat their pain may present safety liabilities when not adequately accommodated.

Absenteeism | People struggling with opioid addiction miss nearly 50% more work than the general workforce.[4] Acute and chronic pain have similar effects.

Productivity | Substance misuse and related disorders are estimated to cost more than $400 billion in workplace productivity in the United States.[19] The use of prescription opioids, whether problematic or non-problematic, is associated with a loss in labor capacity.[8]

Retention | 36% of people with SUD and 42% of people with OUD related to pain medication worked for more than one employer in the past year, compared to 25% of the general workforce.[4] Pain can also severely impact retention, with employees experiencing chronic pain eventually utilizing short- or long-term disability or permanently exiting the workforce.

Healthcare Spend | Healthcare costs for employees who misuse prescription drugs are three times higher than those for an average employee.[4] Unaddressed acute and chronic pain can also significantly impact an employer's healthcare spending.

Supporting employees and their families who are in treatment and recovery from SUD or OUD has a positive impact on the lives of employees and the employer.

Employees in recovery have lower healthcare costs, miss less work, and are less likely to leave their employer. These workers average 10% fewer missed work days than the general workforce and have 8% less turnover.[4]

With average cost per hire of over $4,000, companies can benefit from making direct efforts to retain employees who are facing substance use challenges.[1,2,5] In addition to improvement in their business's bottom line and workplace performance, employers should consider the social and communal benefits of adopting a transparent and empathetic approach to SUD and OUD.

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