POISON CONTROL

VOLUME 5

Facts About Prescription Opioids, Risks Of Addiction And Overdose (Opioid Use Disorder), Treatment And Management

Introduction

Prescription opioid abuse and addiction, along with consequences such as overdose death and increasing transition to heroin use, constitute a devastating public health problem across the globe. The quantities of opioids prescribed in different regions have been strongly associated with higher rates of subsequent opioid overdose. It is increasingly clear that over-prescription of these medications over the past two decades has been a major upstream driver of the opioid abuse epidemic.

What are opioids?

The terms opioids and opiates are sometimes used interchangeably, opiate refers specifically to natural compounds derived from the poppy plant, such as heroin or morphine, while opioids may be natural, semi-synthetic, or synthetic chemicals derived in a lab to mimic the effects of natural opiates and developed to be stronger and more potent.

Opioids are a category of drugs that include both prescription medications and illicit substances. These drugs are primarily used for pain management because they interact with opioid receptors in the brain to reduce the perception of pain. These are often prescribed after surgeries or for chronic pain conditions, active-phase cancer treatment, palliative care and end-of-life care. However, opioids also include illegal drugs like heroin, which can be even more dangerous due to the lack of regulation and higher risk of overdose.

Prescription vs Illicit Opioids

Prescription opioids are classified as controlled substances due to their high potential for misuse and addiction. They are typically prescribed in specific dosages and durations to minimize the risk of dependency. However, the euphoric effects that accompany pain relief can lead to misuse, where individuals take higher doses than prescribed or use the drugs without a prescription.

Prescription opioids include medications like Oxycodone (OxyContin®), Hydrocodone (Vicodin®), Codeine, Morphine, Fentanyl, Methadone, Pethidine, Tramadol and Carfentanil.

Illicit opioids, such as heroin, are not regulated and pose significant health risks. The lack of quality control can lead to contamination with other dangerous substances, increasing the risk of overdose. Moreover, synthetic opioids like fentanyl, which can be both prescribed and illicitly manufactured, are incredibly potent and have been linked to a surge in overdose deaths. Illicit opioids include:

- **Heroin** (a highly addictive drug derived from morphine)
- **Illicit fentanyl** (a synthetic opioid illegally manufactured in clandestine labs that is much more potent than heroin or prescription fentanyl)
- **Opium** (the dried latex obtained from the opium poppy, which contains several active compounds including morphine)

- **Street versions of prescription opioids** (such as counterfeit oxycodone, hydrocodone, or other medications that are manufactured and sold illegally)

Understanding the distinction between these types of opioids and their intended uses can help in addressing and treating opioid addiction effectively.

How Opioids Work

When opioids enter the body, they interact with opioid receptors in the brain, producing a number of physiological responses, including pain relief. But they also stimulate the reward pathway in the brain, which can cause a feeling of well-being and happiness known as euphoria.

This activation of the reward pathway makes opioids addictive for some people. Continued use of the drugs causes changes in the brain that lead to tolerance. This means that a larger dose of opioids is needed to get the same level of pain relief or euphoric high.

Over time, people who use opioids (for pain or other reasons) develop a physical dependence on the drug, meaning that if they stop taking opioids, they experience withdrawal symptoms. At that point, some may take opioids to put an end to withdrawal symptoms rather than to achieve pain relief or a high.

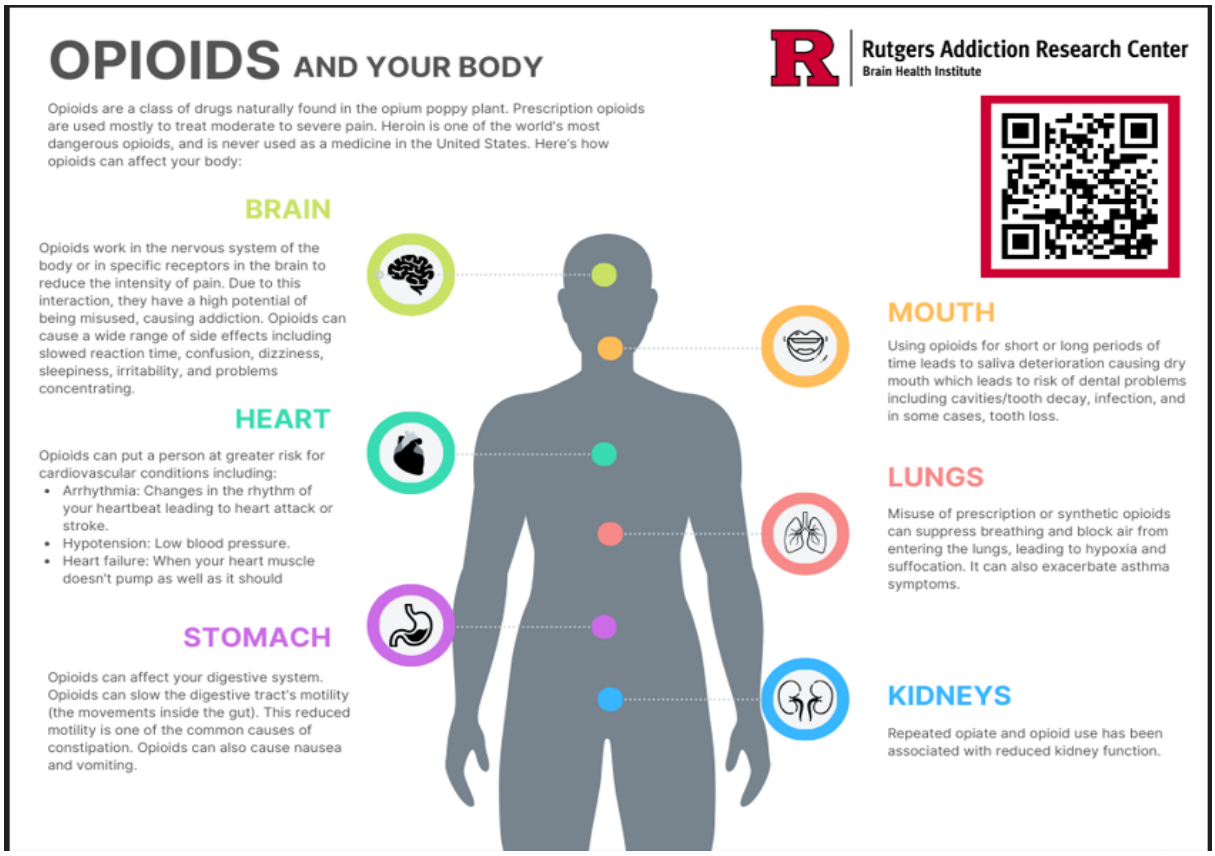

Fig 1: Opioid effects in the body (by Rutgers Addiction Research Center)

Issues with Opioid Misuse and Abuse

Several terms are commonly used in literatures to describe prescription opioid use patterns. Regular opioid use, including opioids used in an appropriate therapeutic context, is associated with ***physical dependence***, and ***tolerance.***

The presence of tolerance or dependence does not necessarily mean that an individual has an opioid use disorder. As earlier mentioned above, **tolerance** is present when an individual needs to use more of a substance in order to achieve the same desired therapeutic effect while **dependence** is characterized by specific signs or symptoms when a drug is stopped.

Definitions of *abuse* and *misuse* vary, but generally ***Opioid misuse*** is a broad term that captures any situation in which opioid use is outside of prescribed parameters; this can range from a simple misunderstanding of instructions, to self-medication for sleep, mood, or anxiety symptoms, and compulsive use driven by an opioid use disorder. ***Abuse*** is a nonspecific term that refers to use of a drug without a prescription, for a reason other than that prescribed, or to elicit certain sensory responses.

Increasing rates of opioid misuse and abuse have become a prominent topic in medical, public health, and mainstream media. The reality is that this growing trend is largely related to misuse of prescription medications. Prescription opioids are second only to marijuana as the first illicit substance people try, with approximately 1.9 million new initiates per year.

Chronic pain and opioid misuse are significant and interrelated health care issues that are of great importance to patients, the medical community, and society as a whole. Patients who are physically dependent on an opioid that was prescribed for pain may continue to use the medication after pain resolution to avoid withdrawal symptoms. This can generally be managed by tapering the opioid.

Opioids Addiction and Overdose

Opioids are recognized as necessary and legitimate agents to treat pain but are associated with significant risks to patients and society. Such risks include misuse, abuse, diversion, addiction, and overdose deaths.

Opioids produce feelings of **euphoria** (a pleasurable sense of well-being) in some people. This is why opioid drugs, even those prescribed by a

doctor, are very addictive and can lead to opioid use disorder. Using any opioids for their euphoric effect, even for a short time, raises the risk of substance use disorder, overdose and death.

Recently, prescription opioids have been reportedly observed in a large percentage of opioid-related overdose fatalities, and the health, social, and economic costs associated with opioid use disorder (OUD) continue to increase. According to WHO, about 600 000 deaths were attributable to drug use in 2019. Close to 80% of these deaths are related to opioids, with about 25% of those deaths caused by opioid overdose.

This is due to the increased availability of opioids used in the management of chronic pain, and also due to increasing use of highly potent opioids appearing on the illicit drug market. Another problem with increased opioid misuse is that it can also lead to more heroin use. There are some people who switch from prescription opioids to heroin because heroin may be cheaper and easier to get.

Risk Factors for Opioid Addiction and Overdose

Certain risk factors can be responsible for opioid addiction and overdose. Recognizing these risk factors can help healthcare providers, policymakers, and individuals take proactive steps to prevent opioid addiction and overdose.

Prescription and Medical Factors:

1. Long-term opioid prescription

2. High-dose or high-potency opioid prescription

3. Multiple prescriptions or providers

4. Lack of proper prescribing guidelines or monitoring

5. Inadequate pain management or treatment

6. Co-prescription of benzodiazepines or other sedatives

7. Medical conditions (e.g., chronic pain, cancer)

Individual Factors:

1. Family history of substance abuse

2. Personal history of trauma or mental health disorders (depression, anxiety)

3. History of substance abuse or addiction

4. Previous overdose or near-overdose experience

5. History of abuse during childhood
6. History of conduct disorder as a child or adolescent

Social and Environmental Factors:

1. Social isolation or loneliness
2. Peer pressure or social norms promoting substance use
3. Easy access to opioids (prescription or illicit)
4. Lack of community resources or support
5. Poverty and unemployment
6. Exposure to advertising or media promoting opioids
7. Family or friend overdose or addiction

Illicit Substance Factors:

1. Fentanyl or synthetic opioid use
2. Heroin use
3. Poly-substance use (combining opioids with other substances)
4. Unknown or variable potency of illicit substances
5. Contaminated or adulterated substances

Other Factors:

1. Lack of education on opioid risks
2. Stigma surrounding addiction or seeking help
3. Limited access to addiction treatment or support services
4. Inadequate healthcare provider training on addiction
5. Policy or regulatory gaps enabling opioid diversion

Treatment and Management of Opioid Use Disorder (OUD)

Many people who have OUD want to control their addiction. Some of them may try to abruptly discontinue their use of opioids on their own, without medical assistance. This sudden elimination of opioids from the body brings on a cluster of unpleasant withdrawal symptoms that can include nausea, diarrhea, sweating, anxiety, muscle and joint pain, and runny nose, among others. These symptoms can occur within hours of their last use and can last for days to weeks.

Medically managed withdrawal can be achieved using medications like clonidine-naltrexone for detoxification. It is recommended that after medically managed withdrawal, there is to continue long-term treatment to avert and/or address relapse to opioid use.

The most effective treatments for opioid use disorder include the combined use of medication and behavioural treatment. Having support from family and friends can also help.

Medications: The Food and Drug Administration (FDA) has approved three medications for the treatment of OUD namely; methadone, buprenorphine, and naltrexone.

1. ***Methadone.*** This medication blocks the effects of other opioids, controls withdrawal symptoms, and reduces cravings for opioids. Because methadone is itself an opioid with the potential for misuse and dependence, it can only be obtained at specially licensed treatment facilities.

2. ***Buprenorphine.*** Like methadone, this medication is an opioid, used to block the effect of other opioids, lessen withdrawal symptoms, and reduce cravings. But unlike methadone, it can be prescribed by physicians and advanced practice providers (including primary care) and obtained at a pharmacy. Buprenorphine is usually provided in combination with naloxone.

3. ***Naltrexone***. This medication, which is not an opioid, works by blocking opioids from binding to certain receptors in the brain. This means that if someone taking naltrexone also takes an opioid, the opioid will not produce the desired effects, including feelings of euphoria, and that person is less likely to continue opioid use or to relapse. Naltrexone is often given as a long-lasting injectable that works for four weeks.

While methadone and buprenorphine can produce feelings of euphoria in people who do not otherwise take opioids, they do not cause euphoric effects in people with OUD, who have developed a tolerance to opioids. The treatment doses of methadone and buprenorphine are sufficient for blocking the effects of other opioids, reducing cravings, and suppressing withdrawal symptoms, but not enough to generate the euphoric high.

People with OUD may continue treatment with these medications for years and even decades.

Characteristics of Medications for Opioid-Addiction Treatment.			
Characteristic	**Methadone**	**Buprenorphine**	**Naltrexone**
Brand names	Dolophine, Methadose	Subutex, Suboxone, Zubsolv	Depade, ReVia, Vivitrol
Class	Agonist (fully activates opioid receptors)	Partial agonist (activates opioid receptors but produces a diminished response even with full occupancy)	Antagonist (blocks the opioid receptors and interferes with the rewarding and analgesic effects of opioids)
Use and effects	Taken once per day orally to reduce opioid cravings and withdrawal symptoms	Taken orally or sublingually (usually once a day) to relieve opioid cravings and withdrawal symptoms	Taken orally or by injection to diminish the reinforcing effects of opioids (potentially extinguishing the association between conditioned stimuli and opioid use)
Advantages	High strength and efficacy as long as oral dosing (which slows brain uptake and reduces euphoria) is adhered to; excellent option for patients who have no response to other medications	Eligible to be prescribed by certified physicians, which eliminates the need to visit specialized treatment clinics and thus widens availability	Not addictive or sedating and does not result in physical dependence; a recently approved depot injection formulation, Vivitrol, eliminates need for daily dosing
Disadvantages	Mostly available through approved outpatient treatment programs, which patients must visit daily	Subutex has measurable abuse liability; Suboxone diminishes this risk by including naloxone, an antagonist that induces withdrawal if the drug is injected	Poor patient compliance (but Vivitrol should improve compliance); initiation requires attaining prolonged (e.g., 7-day) abstinence, during which withdrawal, relapse, and early dropout may occur

Counselling and behavioural therapy. These aim to help people with OUD learn new ways of thinking about and relating to drug use and can also encourage them to adhere to treatment regimens.

This type of therapy encompasses several approaches, which may be offered in person or via telehealth and sometimes in combination, including:

A. ***Medication management.*** A brief, medically focused counselling similar to what is provided to patients with depression. The sessions cover recent drug use or efforts to achieve or maintain abstinence, attendance in mutual-help groups, support for efforts to reduce drug use or remain abstinent, advice for the achievement or maintenance of abstinence, and the results of urine drug tests. In addition, the prescriber assesses employment, legal, family, or social, medical, and psychiatric progress related to addiction

B. ***Cognitive-behavioural therapy (CBT).*** Aims to help people recognize and reframe negative modes of thought that may play a role in enabling their opioid use and disruptive behaviour

C. ***Contingency management.*** Reinforces certain behaviors, by offering patients material rewards for meeting behavioural goals, such as abstinence from opioids. For example, an individual might be given a voucher as a reward for testing negative on a urine drug test or for maintaining regular attendance at counselling and therapy sessions

D. ***Motivational enhancement therapy.*** Gives people ways to address their mixed feelings about opioid use and helps foster motivation and commitment to addressing their OUD

E. ***Family counselling.*** Aims to help people with OUD and their families understand and cope with the disease and the social and other harms it can cause

F. ***Mutual help groups.*** These include programs such as SMART (Self-Management and Recovery Training) Recovery, Narcotics Anonymous, Methadone Anonymous, and others, including Alcoholics Anonymous, in which participants help and mentor one another in their recovery from OUD

G. ***Harm reduction education.*** Because ongoing use or relapse are common and not all individuals are able to engage in formal treatment, care of patients with OUD often involves an educational component designed to minimize the harm associated with their opioid use. This is like the education that patients with heart disease or diabetes receive if they are not meeting their target goals of treatment. Patients, family, and partners may be taught about naloxone to reverse opioid overdose, safe use of syringes to reduce the risk of acquiring an infectious disease through opioid injection, or about the risks of mixing certain drugs with opioids.

In conclusion, NAFDAC is constantly in pursuance of initiatives aimed at safeguarding public health. One of such initiative is the NAFDAC Consumer Safety Club for Secondary School Students with the vision to catch them young in the fight against drug abuse and misuse. The agency is also committed to empowering consumers, patients and healthcare providers with useful information for better informed medical decisions

thereby reducing preventable deaths and diseases resulting from drug misuse and abuse.

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