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Dr. Robert Speth, Ph.D
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Addiction After Taking Pain Relief Medicine for Post-Surgery

Today many people are dying due to opioid overdose, one of the reasons being inadequate education about opioid overdose dangers. I have decided to talk about this topic because of two experiences that impacted my life. First, my mother in 2019 had surgery and afterwards the doctor prescribed her an opioid medication, she asked me what I recommended her to do, if it was necessary to take it or not. After doing research I told her all the consequences of taking this medication, and at the end she decided not to take it unless it was really necessary. She started using acetaminophen to manage the pain. This experience made me realize that the doctor did not adequately explain to her important information about the medication that he was prescribing, and she had no knowledge of what she was going to take. Since, these types of drugs have many restrictions the doctor just gave her a paper to sign with all the warnings and side effects of the drug, but the doctor did not take the time to appropriately counsel the patient, in this case being my mother. Therefore, patients walk out of the doctor's office most of the time without the appropriate knowledge of the medications being prescribed to them.

In addition, during my rotation experience in the community pharmacy a woman came with an opioid prescription and she asked me "What I should do with these pills, I've heard bad comments about opioids?". She explained to me that she is going to have surgery next week and the doctor told her to get the prescription before. At that moment my only comment was that she can take the pills, but to only use them if she really needed them, also I referred her to the pharmacist for further counseling points. These two situations demonstrate that patients are sent home with an opioid prescription without the information that they need. I decided to talk about

this topic because throughout these experiences I've noticed the poor knowledge that patients have about the topic and lots of them are dying daily because of this, deaths can be preventable. These experiences have demonstrated me that surgeons may play an important role in propagating the addiction crisis by exposing patients to potentially harmful and addictive opioid medication¹.

Millions of United State citizens undergo surgery each year, this mean that millions of Americans are exposed to pain relief medications². Many patients receive their first exposure to opioids following surgery². The most common prescribed medications to manage pain are opioids. According to the National Institute on Drug Abuse, the most common prescription opioids are Hydrocodone, Oxycodone, Oxymorphone, Morphine, Codeine and Fentanyl³. The poppy *Papaver somniferum* is the source for all natural opioids, whereas synthetic opioids are made entirely in a lab and include meperidine, fentanyl, and methadone⁴. Semi-synthetic opioids are synthesized from naturally occurring opium products, such as morphine and codeine, and include heroin, oxycodone, hydrocodone, and hydromorphone⁴. These medications are use in the medical field to relieve moderate to severe pain during a short period of time only because they are extremely addictive.

Today, we are still trying to overcome the opioid crisis, this has been an issue because it has been very easy to get a prescription of this kind. Pain is defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage⁵. Pain is subjective, and many clinicians define pain as “whatever the patient says it is”⁵. This is the reason why the management of pain is not easy; clinicians need to follow specific protocols to prescribe these medications in the correct way. Before prescribing an opioid to manage pain it is recommended to evaluate the situation, the use of effective nonpharmacologic should always be considered whenever possible to help reduce the overall reliance on pharmacologic

approaches, especially opioids⁵. Acetaminophen and nonsteroidal antiinflammatory drugs (NSAIDs) are often preferred first line therapies in the treatment of mild to moderate pain, opioids are often the next step in the management of more severe pain⁵. These drugs interfere with the transmission of pain messages to the brain and reduce feelings of pain. Opioids attach to proteins called opioid receptors on nerve cells in the brain, spinal cord, gut and other parts of the body, when this happens, the opioids block pain messages sent from the body through the spinal cord to the brain⁶.

The Centers for Disease Control and Prevention (CDC) has classified prescription drug abuse as an epidemic, especially prescription opioid abuse⁷. The United States contains 4.6 percent of the world's total population but consumes two thirds of the world's opioid supply¹. In 2018 United States drug overdose deaths were 67,367; 69.5% (46,802) were because of opioids⁷. Since 1999 to 2018 approximately 450,000 people died from opioid overdose including prescription and illicit opioids⁸. The CDC compared the 3 most important waves together, commonly prescribed opioids, Heroin and other synthetic opioids, concluding that they are related, the graph presents a correlation in the increase between all three lines. From 1999 to 2018, more than 232,000 people died in the United States from overdoses involving to prescription opioids (Figure 1 attachment). Overdose deaths involving prescription opioids were more than four times higher in 2018 than in 1999⁹.

Since we have been experiencing these impressive statistics, we need to reconsider opioid prescribing practices. It is important to do a complete assessment of patient complaints, including an assessment of the patient's functionality and risk factors for opioid misuse and abuse⁵. The addiction to opioids is defined as the chronic use of prescription opioid medication in a way other than prescribed, or when not prescribed, and may overlap with a use disorder of illicit opioids like

heroin, some behaviors indicate a patient is at higher risk for addiction to pain medications⁵. The addiction to prescription drugs is more serious than what people think, approximately 45% of the people who use heroin started with an addiction to prescription opioids¹⁰. What is dangerous about this inappropriate use is that as doses of opioids are increased, the respiratory center becomes less responsive to carbon dioxide, causing progressive respiratory depression this often manifests as a decrease in respiratory rate and is further compounded because the cough reflex is also depressed⁵. This is the reason of the high amount of deaths in the country and the huge amount of people in hospitals.

Dr. Chad Brummett investigated more about the new persistent opioid use after minor and major Surgery Procedures in US Adults in 2017. In this study adults between the age of 18 to 64 years old, all of them involved in minor or major surgical procedures were examined. Minor surgical procedures in this research were varicose vein removal, laparoscopic cholecystectomy, hemorrhoidectomy, thyroidectomy, transurethral prostate surgery, parathyroidectomy and carpal tunnel syndrome. On the other hand, ventral incisional hernia repair, colectomy, reflux surgery, bariatric surgery and hysterectomy were considered major surgical procedures. Only patients that filled opioid prescription either in the month prior to surgery or within two weeks after discharge were included in the study². 36,177 patients were included in the investigation, 10% of them belonged to the control group, 80.3% received minor surgical procedures and 19.7% received major surgical procedures². The incidence of new persistent opioid use was similar between the minor surgical procedure (5.9%) and the major surgical procedure (6.5%), in addition, only 0.4% in the nonsurgical control group filled on opioid prescription between 90-180 days after surgery². Approximately 50 million ambulatory surgical procedures that were performed in the United States in 2010 base on a cohort study approximately 2 million individuals may transition to

persistent opioid use following surgery each year². In addition, the study also showed that prolonged opioid use following surgery may not simply be consequence of poorly controlled pain. Patients continue opioids for reasons other than intensity of surgical pain, it has to be something else². It has been also demonstrated that psychiatric conditions such depression are associated with long-term opioid use, and patients after surgery may continue to take them². This study demonstrates that other things may substitute for the use of opioid pain killers after surgical procedures, this is the reason why doctors should interview and counsel the patient before giving them the opioid prescription². Getting a prescription from doctors is too easy and accessible, these are some of the comments that consumers made.

Patients that used opioids before surgery have more chance to become addicted, opioid naïve patients before surgery also been shown to have a significant chance of persistent postoperative opioid use in less magnitude¹. A retrospective cohort study concluded that duration of the prescription rather than dosage is more associated with ultimate misuse in the early postsurgical period¹¹. In addition, in a prospective cohort study of 1,450 patients only 581 patients were discharged with opioid medication, 70% of them had leftover opioids and only 5% reported disposal of the surplus¹². One in five people who were prescribed opioid pain killer medication reported having shared the medication with friends to help them to manage pain¹³.

Opioids can be very harmful to patients; health professionals need to be very careful prescribing pain killer medications. A person on this medication for a long term period can experience withdrawal symptoms and therefore they would want to keep using them. Research demonstrate how dangerous the misuse of these drugs can be. Reducing the amount of prescription, reducing the dose and considering non-pharmaceutical or non-opioid analgesic treatment first can be helpful to overcome this crisis. Statistics demonstrate a reduction of mortality due to opioid

overdose, but the reality is that a large population are still misusing them. As health professionals we need to help and contribute to fight for this crisis.

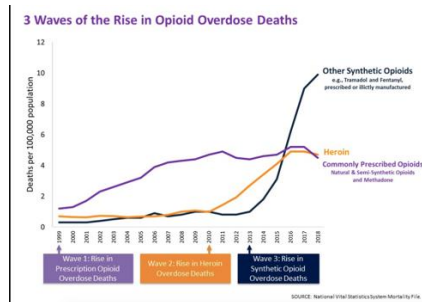


Figure 1: 3 waves of the Rise in Opioid Overdose Deaths.

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