

The Effects of Marijuana Use on Post-Operative Patients

Introduction

Marijuana, also known as cannabis, is a plant-based product known for its medicinal properties dating as far back as around 400 AD. Mentioned for the first time in the United States Pharmacopoeia in 1850, only to be later withdrawn in 1942 due to the passage of the Marijuana Tax Act in 1937 signaling the start of the federal restriction (Bridgeman, 2017). In America today, a topic currently being discussed nationwide is the legalization of marijuana. Despite marijuana remaining classified federally as a Schedule I illegal substance under the Controlled Substance Act (*An Analysis of Marijuana Policy* 1982), while at a state level, laws differ. According to the National Conference of State Legislators, there are currently thirty-three states across the country that have rewritten their marijuana laws (Hanson & Garcia, 2020). Modifications to these historical laws have allowed for the decriminalization in the possession or use of marijuana for medical or recreational purposes. Although many might not agree with the legalization of marijuana, the law changes seen are a reflection of polling results. Across the country, poll results have shown that an overwhelming majority of Americans support the use of marijuana.

Even though marijuana's popularity continues to grow within the United States, due to funding, a lot remains unknown. It is essential to examine how marijuana may post-operatively affect the recovery phase on surgical patients, specifically as it pertains to the possible adverse effects or positive potentials of the drug. The goal of this paper aims to clarify the concept of post-operative marijuana complications. Identify potential initiatives to implement that may be vital toward reaching a new level of standards of care for this patient population.

Concepts

The main concepts of focus with this analysis paper are marijuana use and post-operative complications. Current data shows that the continued increase of acceptance has resulted in a correlating rise in marijuana users in the United States. From 2007 to 2017, data indicates that the number of marijuana users had increased from 42 million to 57 million users (Hurst, 2019). Of those 57 million, 42 percent or 24 million reported using marijuana within the last month. 10 of those 24 million users are daily or near-daily users (Hurst, 2019).

Of the studies already conducted thus far, there is the knowledge that the pharmacodynamic of marijuana involves the central nervous system, cardiovascular system, and respiratory system (Horvath. et al, 2019). Conversely, those specific systems are also the targets of administered anesthetics in anesthesia, whether it be volatile or intravenous. With surgery itself having its own risk on everyone who goes under the knife, it is crucial to analyze to see if this unique emerging population will experience a higher level of adverse effects.

Patients, unless facing a new procedure, are presented with a consent document to sign. It is during the signing process where the exchange of procedural information will occur. Besides discussing the risks and benefits, patients will be presented with an outlook for post-operative expectations. Despite all efforts to prevent post-operative complications, many will experience some degree of complications. There are a variety of factors which may contribute to how an individual's body responds to the stress of the surgery. Factors include, but are not limited to, their genetic make-up, overall health condition, and lifestyle choices. Although all patients who go under the knife for one reason or another all may face complications post-operatively, the focus of this analysis is to identify potential complications or risk factors for the surgical patient population who routinely consume cannabis or its derivative.

Definition of Concept

To fully understand the concept of this analysis, it is essential to comprehend the definition of the presented concepts. The concepts of marijuana use and post-operative complications are presented here with its conceptual and operational definitions. According to the National Center for Drug Abuse Statistics (NCDAS), the use of marijuana involves the consumption of the derivative obtained from the cannabis sativa plant. Marijuana consumption occurs through many routes. It may be rolled like a cigarette, referred to as a "joint," and smoked. Cannabis may also be mixed with food or candies, deeming the term "edibles." Derivatives of marijuana can be extracted and made into teas and oils (NCDAS, 2020). From an operational standpoint, marijuana use can be identified as a positive result obtained from laboratory testing of bodily fluids such as urine, blood, and saliva. A positive result for marijuana use requires the presence of its active metabolite-delta 9-tetrahydrocannabinol metabolite. In addition to being found in the bodily fluid, it can also be detected in the hair (Copeland & Howard, 2012).

When discussing the next concept presented within this analysis, post-operative complications, conceptually, according to Medicine Net, post-operative complications can be defined as problems affecting patients after surgery. Also, post-operative problems experienced, "may (or may not) be directly related to the disease for which the surgery occurred or to the surgery itself" (Shiel, 2018). When defining post-operative complications on an operational level, in 1992, a grading scale was created by (Dindo, Demartines, & Clavien, 2004) with an emphasis on classifying and grading the severity of the complications experienced by patients post-operatively. That classification scale was later revised in 2004 and titled "Revised Clavien-Dindo Classification." With the new classification, the degree of grading is further broken down

with a greater emphasis on the level of degree in complications post-operative patients were experiencing away from their homeostasis (Tevis & Kennedy, 2013).

Discussion

When critically examining conceptual and operational definitions for the term's marijuana use as well as post-operative complications, it is essential to recognize that, although both terms can be defined conceptually, defining the concepts operationally may be controversial and pose a level of disagreement. For the concept of marijuana use, many questions may arise as to what concentration of metabolite-delta 9-tetrahydrocannabinol found in the Assays would constitute an individual to be considered a "user," and included as a post-surgical risk analysis. Although metabolite-delta 9-tetrahydrocannabinol may have been detected in the hair, that result may be from the consumption of marijuana months before the procedure.

Varying factors could also be observed when defining the concept of post-operative complications operationally. Fully utilizing the grading scale requires an extensive preoperative assessment of the patient to grasp the patient's functions baseline fully. Accurate assessment post-operatively also requires the same person who performed the initial evaluation of the patient. Some may argue, given that there is a level of post-operative complication expected, measurement should be completed on a border scale to gain a better sense of assessment accuracy. Post-operatively, the number of days required in the hospital for recovery compared to others who underwent the same procedure are considered. With both concepts, although data measurement is obtainable, the qualifying range will remain subjective.

Summary

There is no question that the society we live in today differs from the community we lived in a decade ago, and it will vary from the culture we face a decade from now. Contributing factors to those changes include the consistent finding of new scientific research, the continued advancement in technology and medicine, as well as a shift in lifestyle. When scrutinized, today, it is of no surprise to see the speed and frequency of how health care as a whole is advancing. Just as equally impressive are the constant changes seen in the lifestyle trends and what Americans incorporate into their lives. Although some trends may fade out at times just as quickly as they faded in, some trends such as marijuana consumption continue to grow.

The constant change in medicine, advancements in medications, and an increase in medical procedures have allowed individuals to live longer. According to The National Institute on Aging, during the 20th century, Americans over the age of 65 saw a ten-fold increase in their population. Advancement in procedure technique has allowed for a higher number of interventions performed in facilities such as an Ambulatory Surgery Center. Data from the Central for Disease Control in 2010 estimated that 48.3 million surgical and non-surgical procedures performed in either an Ambulatory or Hospital setting (Hall, Zhang, 2017). Given the heightened risk already associated with surgical procedure, especially those requiring the use of any level of anesthesia, it is vital to examine recovery trends in marijuana users post-operatively. With more procedures transitioned out of the hospital setting to Ambulatory Surgery Centers, anesthesia providers need to be able to anticipate and identify potential complications within this particular patient population.

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