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Undergraduate

Long-Term Medical Marijuana Use and Anxiety

By: Sweta M Patel

Abstract

Many people in the United States use medical marijuana to relieve symptoms of anxiety. Marijuana contains two important cannabinoids that makes it medically approved form of medication, cannabidiol and delta-9-tetrahydrocannabinol. Although medical marijuana can help alleviate anxiety, long-term use could result in mental health issues such as depression, cognitive impairment, increased anxiety, and memory loss. This brings forth the question of whether medical marijuana should be prescribed to patients who struggle with anxiety. Even though medical marijuana is legal in many states, it is still illegal under federal law due to the lack of research and experimental studies. The current research on the use of medical marijuana to treat anxiety disorders shows inconsistent results. There are some

studies that demonstrate the medical benefits associated with cannabis use; while, others suggest there are adverse effects in regular users. Therefore, until there are studies that prove that medical marijuana is more beneficial than detrimental, it should not be prescribed to patients diagnosed with an anxiety disorder.

Anxiety disorders are the most common mental health illness in the United States among young adults. Approximately eighteen percent of the population has been diagnosed with an anxiety disorder. There are also many people who suffer from anxiety but are not qualified for a diagnosis. This greatly increases the percentage of people suffering from anxiety throughout the United States. There are a few different types of treatment for anxiety such as psychotherapy, cognitive-behavioral therapy, and medication. Most patients are recommended a combination of therapy sessions and medication. There are various medications that can be prescribed to a patient with an anxiety disorder but one of the most controversial forms of medication across the United States is cannabis. Although there is research that identifies the medical benefits of cannabis use among patients suffering from anxiety, some research suggests that long-term use can lead to potential mental health risks and it can also result in memory loss thus questioning the medical benefits.

The legalization of cannabis is a highly debated topic in the United States. As of June 2014, twenty-three states have legalized marijuana for medical purposes. While almost half of the United States has legalized cannabis for medical purposes, it still remains completely illegal throughout the other half and under federal law. Cannabis contains two imperative cannabinoids that makes it a legal source of medication in certain states. One is cannabidiol also

known as CBD and the other is delta-9-tetrahydrocannabinol also known as THC. Even though the properties of marijuana were carefully examined before it was legalized as a form of medication, there is still some data that suggests there are negative effects from regular use of cannabis.

For instance, the CBD cannabinoid content in marijuana is the primary source that activates the anxiety relieving symptoms in the hypothalamus of the brain. The study "Effects of Cannabidiol (CBD) on Regional Blood Flow" conducted by de Souza Crippa, Zuardi, Garrido, Wichert-Ana, Guarnieri, Ferrari, Azevedo-Marques, Hallak, McGuire, and Busatto experimented on subjects to see if CBD had any correlations with anxiety. This study involved two groups of healthy people who were given both CBD and placebo. One group was given the CBD first while the other received the placebo first. The results show that "the administration of CBD was associated with significantly decreased subjective anxiety and increased mental sedation, while placebo was not" (de Souza Crippa et al., 2004). When the people were given both CBD and placebo, the CBD was the chemical that reduced anxiety symptoms. From the SPECT scans done on the subjects, it was clear that this activity was occurring in the hypothalamus. The hypothalamus is a significant brain structure that facilitates the effects of anxiety. When one experiences high levels of anxiety, it increases activity in the hypothalamic area. In the study they concluded, "The

reduced hypothalamic activity that we observed is thus consistent with the anxiolytic effect of CBD” (de Souza Crippa et al., 2004). Since the levels of anxiety correlate with hypothalamic activity, this study proves that consuming CBD will decrease hypothalamic activity and reduce anxiety. This is a major reason why medical marijuana is prescribed to patients with anxiety. However, while CBD drives to reduce anxiety, THC on the other hand contributes to increasing anxiety.

Although THC plays a role in treating many serious medical conditions such as insomnia and anorexia, it is also involved in increasing paranoia and anxiety. The article “Can Marijuana Treat Anxiety Disorders” discusses the different effects of the THC and CBD cannabinoids. It mentions, “THC seems to have opposite effects on anxiety levels depending on the dosage, with THC acting to decrease anxiety at lower doses yet increasing anxiety at higher doses” (Truthonpot.com, 2013). When marijuana has a higher dosage of THC than CBD, it is identified as a sativa strand and it raises anxiety symptoms. Patients who suffer from anxiety are referred medical marijuana with a higher quantity of CBD and a less THC in order to relieve anxiety; this is recognized as an indica strand. Since THC is the main active chemical in marijuana, patients can often feel an increase in anxiety with regular use. This is where the controversy lies.

Another significant issue with medical marijuana is that it can lead to substance dependence. Although marijuana does not

contain any addictive elements, in regular users “abstinence leads to a withdrawal syndrome characterized by negative mood (irritability, anxiety, misery), muscle pain, chills, sleep disturbance and decreased appetite” (Iversen, 2004). This means that eventually when a regular cannabis user stops using cannabis, they will experience a withdrawal syndrome that includes many negative moods. The study “*Neural Effects of Positive and Negative Incentives during Marijuana Withdrawal*” by Filbey, Dunlop, and Myers confirmed, “growing evidence support a marijuana withdrawal syndrome that may drive the high rate of relapse in marijuana dependent individuals” (Filbey, Dunlop, & Myers, 2013). When this marijuana withdrawal occurs, most patients decide to resume using cannabis to refrain from dealing with the negative effects. This then makes the patient dependent on cannabis leading to long-term usage, which can result in mental health risks such as depression, cognitive impairments, and memory loss.

Many patients who suffer from anxiety begin to feel depressed and an increase in anxiety after long-term use of medical marijuana. In *Marijuana and Madness* by Degenhardt, Hall, Lynsskey, Coffey, and Patton, conducted studies to investigate if there were any connections between long-term marijuana use and depression. One of the studies established that “regular cannabis use increases the risk of depression” (Degenhardt, Hall, Lynsskey, Coffey, & Patton, 2001). Although the risk of developing depression depends on the amount of time one has been

consuming marijuana, the percentage of people who develop depression is still incredibly high. One important study that was mentioned in this text was the Bovasso study. This study gathered important information on cannabis users and depression. "Approximately 67% of those with cannabis abuse but no depressive symptoms at baseline developed depression after 14-16 years" (Bovasso, 2001). This means that a majority of people who use cannabis for fourteen to sixteen years will develop depression even if they never had depressive symptoms to begin with. It is harmful to one's mental health to regularly use medical marijuana for more than fourteen years because it can result in depression.

Another negative effect for long-term users of cannabis is that they can experience memory loss and cognitive impairments. The excerpt "*How marijuana relieves (or exacerbates) anxiety*" by Lecia Bushak reports some important findings by Dr. Sachin Patel. He asserts, "Though the short-term effects may be relaxing, the long-term effects may not have an influence in affecting anxiety. Instead, long-term use of the drug can lead to memory loss and cognitive impairment" (Bushak, 2014). The memory loss could be either short-term, long-term, or both. However, most patients experience short-term memory loss. According to Campbell and Blieden's documentary film *Super High Me*, the experiment designed by Dr. Mitch Earleywire was created to see what effects medical marijuana has on memory, cognitive ability, and psychic ability (Campbell & Blieden, 2007).

The subject, Doug Benson, went thirty days without using marijuana and then thirty days with constant consumption of marijuana. Dr. Gary Cohan found that Doug suffered from slight short-term memory loss after using cannabis for thirty days. Dr. Gary Cohan had asked Doug to count backwards from one hundred subtracting seven each time. However, Doug began to subtract nine instead of seven. This documentary film demonstrates that one can experience some memory loss within thirty days of constant cannabis consumption.

According to current research, medical marijuana can relieve anxiety through the CBD cannabinoid but it can also have damaging long-term effects in regular users. Depression, cognitive impairments, increased anxiety, and memory loss are serious long-term consequences to consider when prescribing medical marijuana. Most states have legalized and distribute marijuana for medical purposes but it still remains illegal under federal law due to the restricted amount of research on this subject. Therefore, until there is more solid evidence that proves medical marijuana is beneficial, it should not be prescribed to patients with an anxiety disorder.

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Sweta M. Patel is an undergraduate student majoring in psychology at the University of California, Merced. Prior to transferring there, she received an Associate of Science degree in Psychology and will be graduating with a Bachelor of Arts in Psychology by the end of 2015. Upon graduating, she plans to take a year off to work in the field of psychology and gain more experience. She will also be spending this time to study and prepare for the GRE exams to continue her academic endeavors and apply for graduate school. Her goal is to be accepted into the Psy.D. Clinical Psychology program at the University of San Francisco and eventually graduate with a doctorates degree.

Outside of school, Sweta enjoys graphic designing, playing chess, dancing, archery, and martial arts. She dedicates most of her free time to designing for her clothing line Arrows & Apathy, which she is very passionate about. Arrows & Apathy has successfully sold over one thousand products over the past two years.

