

## An Insight to Marijuana: Psychological Overview

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### Abstract:

*Cannabis, also known as “Marijuana” is a psychoactive substance and the most illicit trafficked and consumed drug among the youths. Marijuana is dried and shredded parts of the ‘Cannabis Sativa’ plant. Due to the consumption of high doses of marijuana for recreational purposes in adulthood causes cannabis dependence syndrome (CDS) and also may lead to psychosis. Not only dependency but also alters their perception towards everything leading to detriment in their cognitive disability. In the current scenario, teens are more prevalent to abuse marijuana than adults. So, it’s high time to let the teens and adults know about the psychological pros and cons of marijuana before its consumption, which may help them to prevent their near future. It’s never too late to take steps against the ‘Substance Abuse’ among the youngsters. In the context of current issues related to adolescent & teens associated with marijuana use is explained, focusing on those areas related to its adverse psychological effect.*

**Keywords:** Marijuana, THC, Cognitive Disability, Psychosis, Cannabis Dependency.

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## Introduction

Marijuana (weed, herb, pot, grass, bud, ganja, mary jane) is the dried part of the plant '*Cannabis Sativa*' especially the flowering tops, leaves, stem of the plant. The main constituent of the marijuana which causes a person to become 'high' is *Δ-9-tetrahydrocannabinol* (THC). It is consumed in many forms such as inedible forms (hash cake or cookies), smoke using chillum, joints, and bong, blunts, and inhaled using an e-cigarette (vaping). According to the report of the World Health Organization (WHO), about 147 million people, 2.5% of the world population, consume cannabis in an annual review (WHO, 2020). Most of the users start consuming marijuana in their teens (12 or above) during which the development of the brain takes place. Due to consumption, the cognitive ability of an individual is affected which is a serious issue. The rate of consumption from the year 2019 is 15.90% (12 years), 34.80% (18-25 years), 13.30% (26 years-above) is increasing significantly (NIDA, 2020). Most teens and adults start for recreation purposes and gradually they become addicted. Finally, when they decide to restrict themselves from consuming they experience cannabis withdrawal syndrome which makes them psychologically weak and they re-consume to overcome the withdrawal which leads to substance abuse. This whole scenario leads a person towards psychological disorder in their body.

## Metabolism of Marijuana in our Body

The metabolism of marijuana in our body depends upon the quality, quantity, and mode of consumption. Inhaling and smoking act faster than eating hash edibles. After consuming it through inhaling or smoking, it passes through the lungs and goes directly to the liver, where it is divided into metabolites i.e. THC, which is transferred to the whole body by the bloodstreams and finally reaches the brain where it enacts. The brain cells contain 2 natural occurring molecules which bind cannabinoid receptor and mimic the action of THC producing dopamine (neuro-transmitter) which is responsible for an individual to become 'high'. THC is fat-soluble, it remains in the fatty tissues for a longer period, so its detection can be done for up to 30 days (Hall et al., 2001). After the interaction of THC with the brain cells, every individual's body experiences different types of psychological effects that depend upon the mindset of an individual. Certain individuals experience a "good trip" (mania) and some experience a "bad trip" due to psychological issues which results in a panic, distress situation.

## Adverse Effect of Marijuana Use

An individual experience psychological issues due to their panic or distress mindset else psychosis is not caused due to the dosage of marijuana rather the consumption of marijuana increase the probability of psychosis if it is genetically inherited. There is very little evident study that heavy dosage of marijuana causes psychotic disorder but users are more prone to have cognitive dysfunction with prolonged consumption. In the case of females, they experience less energetic, more emotional issues and psychological problems in comparison to males (Feeney et al., 2016). Psychological issues can be in the form of Cognitive (unable to process brain completely), psychosocial (an individual behavior towards societal factors) and psychomotor (related to the consciousness of an individual). Natural cannabis product affects differently from synthetic cannabis. Synthetic cannabis users are found to have significant impairment in long-term memory, working memory, inhibition compared to natural cannabis users, and non-cannabis users.

- **Acute Psychological Effect:** These effects are seen when a person consumes marijuana for a short period. An individual may experience impaired motor function, panic, anxiety, paranoia, breathlessness, euphoria (Akram et al., 2019). Some people may also face unpleasant effects like anxiety, panic reaction, and depression. Psychotic symptoms like delusion (something appears which is not present), hallucination (auditory, visual) with an increase in dose. Psychomotor effects (a problem in concentrating especially in case of driving) the user is generally aware of the psychomotor impairment (Hall et al., 2001).
- **Chronic Psychological Effect:** These effects are seen when a person is indulged in consuming marijuana for a prolonged time. Specially observed in teens and adults those who started consuming at an early age.
  1. **Motivational Effects:** When an individual is too much indulged in marijuana, losses his/her interest to compete among their age groups in terms of education, workplace, etc, this is known as "amotivational syndrome". This led to cognitive disability in which a person stops using intelligence capability and finally growth of brain stops, more prevalent in cases of teens. In the case of school-going or college students, the academic performance seems to be degraded as they become less concerned about their future, become less energetic,

more work absence, etc. Self-efficacy (goal-oriented) is affected due to their psychology perspective of consuming marijuana frequently and this is mostly influenced by peer pressure (**Lac et al., 2018**).

2. **Dependence Syndrome (DSM-IV):** When a person consumes marijuana for a long period and tries to cease its use due to family pressure, relationship problems, etc. Initially, the person faces many symptoms which increases the ease of consuming again, this symptom is known as “Psychological Dependence”. Cannabis dependence is twice that of any other illicit psychoactive substance. Certain withdrawal symptoms are irritability, anger, depression, sweating, sleeping, craving, decreases appetite for about 24-48 hours (**Budeney et al., 2007**). Symptoms like abdominal pain, terror or tremors, sweating, fever, chills, headache, distress. Anxiety disorder like a panic attack, sleep disorder is also experienced (**Patel et al., 2020**). These withdrawal symptoms are experienced by an individual due to cessation of consumption and the psychological need of consuming marijuana as the brain is trained to receive the metabolites on daily basis, so when the brain cells don't get the required amount of metabolites the body reacts.
3. **Cognitive Effect:** During teenage (12 years or above), is the stage of brain development and cognitive domain develops. If a teen starts consuming marijuana in his/her teenage, it is seen the size of the brain doesn't increase to the required size. So, it is rightly said that cognitive effect during adolescence could be serious than during adulthood. There may be many serious effects on the teen about which they may not be aware of. Various neuropsychological parameters are affected like response time decreases, motor control decreases with an increase in THC dose (**Shrivastava et al., 2011**). Due to less utilization of the cognitive ability, the detrimental effect on memory, intelligence ability can be observed due to the overuse of marijuana or substance abuse.
4. **Psychotic Disorder (Schizophrenia and Bipolar Disorder):** There is no evidence research which suggests that the overuse of marijuana causes psychotic disorder. There

can be two hypothesis which may cause psychotic disorder, firstly due to overuse of cannabis a person may lead to the development of psychotic symptoms, and secondly, a person may experience psychosis who is predisposed to acquire disorder (if a person is inherited genetically with the disorder then a person is more likely to enhance psychotic symptoms due to overconsumption of cannabis). Basically, the complex interaction between dopamine, gamma-aminobutyric acid (GABA), and glutamate transmission causes psychotic disorder (**Khan et al., 2009**).

5. **Gateway Hypothesis:** This hypothesis states that if a teen starts using a psychoactive substance like tobacco and alcohol in the early days then, they are likely to use marijuana in their older adolescent stage. It is a pattern in which an individual adopts using marijuana under the influence of tobacco and alcohol consumption. “GATEWAY DRUGS” + “DEPRESSIVE SYMPTOMS” = GATEWAY THEORY (**Amankra et al., 2016**).
6. **Psycho-social Factor:** These includes how an individual reacts in on societal factor and how they are affected. Factors include memory, learning, and attention (**Gorey, Claire et al., 2019**). A person on over-consuming marijuana starts to degrade the memory ability (hardly remembers anything). Learning is affected as the person takes less interest to take part in learning new things rather than tend to indulge in the consumption of marijuana with the peer groups. The attention of an individual is affected because the person hardly remains sober to be attentive.

## Review of Literature

**Ginsberg & Greenley (1978)** proposed certain theory which is related to the psychological aspect of marijuana use

Reference Group Theory: A person may use marijuana to imitate others who use it. A Peer group is referred to as a reference group. An individual is influenced by peers, learn to smoke, perceive the effects, and define them as ‘pleasure’ due to social modeling. Due to the kind of peer group an individual is usually influenced by them, so this theory is also known as “Peer group theory”.

**Commitment Theory/ Control Theory:** Deviant behavior of a person from the societal norms, are more likely to less value the norms in all aspects. Commitment activities include support of society, institutions, etc. Variation from commitment theory lies in marijuana use.

**Stress Theory:** Person desire to escape from personal or psychological issues. An increase in psychological distress is accounted for in users than non-users but not all marijuana users are mentally ill. Rather it is a coping response in which an individual seeks psychological effect from mild to serious fear, depression, and anxiety.

**Non-deviant Behavior:** A person who is too much indulged in his/her work is likely to be less involved in marijuana use. Based on this theory, most rehab centers or correctional centers use this method

**Levin *et al.* (2017)** studied about the psychotic effect of marijuana by an early user (age <15-16) and adolescent. It is evident that the use of marijuana among adults has been increasing tremendously, but its influential reasons are not known. They suggested that early users are more likely to experience impairment in memory, attention, and cognitive disability than adults. But adult users are more vulnerable towards the appearance of the psychotic disorder if they are indulged in heavy dose consumption for a prolonged period or if they inhibit the genetically. All together they suggested that the early user are more likely to perform poorly in the executive functioning than the late users (adults).

**Berenson (2019)** suggested that in an individual, marijuana causes psychosis which in return led to high-risk factors for violence. The rate of violence increases when a psychotic consume drugs. If a person is suffering from Schizophrenia and also consumes marijuana, they are likely to be more violent than a healthy person. Marijuana acts as fuel for a psychotic person to be violent which may sometimes cause paranoia (the person feels threatened by others). It is stated that most of the killer believe, they are in danger from the victims and they commit the crime.

**Green & Ritter (2000)** stated that the age of first marijuana use is an important factor to determine the later mental outcomes of an individual. The use of marijuana at an early age may lead to educational determinant. Educational attainment is closely related to the occupational state, which is associated with depression. It is also suggested the relationship between an early user and psychological distress. The early user may be the current user and in this aspect, an early user is indirectly related to adult psychological distress through current use, assuming their current use is responsible for distress. Hence,

early users can have later depression. Current marijuana user doesn't have a direct link with depression unless a person uses it to cope with problems. Marijuana using for coping is not beneficial rather detrimental.

**Buckner *et al.* (2012)** proposed that the risk of suicide attempts are more particular who consume  $\geq 10$  times regularly/ each day. It is the most common illicit drug reported in the toxicology report of people who died in a suicide. Social Anxiety Disorder (SAD) is the psychological vulnerability that appears mainly in marijuana use and is related to suicidality. Frequent marijuana users experience elevated social anxiety which led to elevated suicidality. They also mentioned various reasons for suicidality: (i) when a person is socially withdrawn and is frequent marijuana use, they are derived from the feeling of belongingness, which is the ideal motivation for suicide. (ii) When a person is too much indulged in marijuana use, they may have the feeling of being burdensome to family, peers, etc. These can be certain reasons among socially anxious marijuana users.

**Mitchell *et al.* (2007)** incremental use of marijuana use may be related to affect based psychological vulnerability. The coping motive for marijuana use may result in negative effects like consequences of anxiety, anxious arousal, and anhedonia depressive symptoms. Increasing the coping motive for marijuana use may also increase the risk of effect based on psychological vulnerability. Early intervention should be taken for a high-risk marijuana user to avoid further psychological vulnerability.

### Case Study Related to Chronic Marijuana Syndrome

E.J., a 17-year-old female diagnosed with a prior history of bulimia nervosa. Before assessment she gave a 6-month history of smoking 1g of cannabis on daily basis since the age of 15, increasing 2.3g daily for approximately 6 months. She attempted to reduce her use on several occasions, but she experienced withdrawal symptoms which would occur within 24 hours, led her to re-consume the drug latest by the 4<sup>th</sup> day. Symptoms include general malaise, labile mood, irritation, and craving for the drug. Her longest period of sustaining without drug was 7 days but she experiences prominent withdrawal symptoms including drug craving, shakiness, chills, fluctuation in appetite, irritability, mood, and initial insomnia. Every time she resumed cannabis use owing to the intolerable discomfort accompanied by withdrawal symptoms. Finally, after motivational therapy, she ceased the use of cannabis (**Duffy & Milin, 1996**).

## Conclusion

In today's scenario, an individual is much into substance abuse in their teen, which is the growing phase of their brain. A teen is the responsible future citizen of our country and if they are not restricted now, then their future will deteriorate completely. It's high time to take some preventive steps against the substance. So, it is highly recommended that every teen should undergo a psychological assessment every month because the psychological state of a person cannot be determined by just a mere look. If an individual is facing some psychological distress state and not able to share with anyone, then they deviate themselves towards substance abuse just to get away with reality. The use of marijuana has increased tremendously due to its availability, despite having strict laws against psychotropic substances. More

serious action needs to be taken to save the future of the youths. Not only they are developing a dependence on marijuana, but the number of addicts is also increasingly having a psychological issue. Psychological dependence syndrome is something which is the mindset of an individual. Marijuana is legalized for medicinal purposes but the youths are using it for recreational purposes. It's high time to take serious intervention steps before too many youths come up with psychological issues. Every individual should learn to face the reality rather than running away from responsibility. In the end, still, a question arises if Marijuana is not legalized for recreational purposes then why the materials which aid in marijuana consumption like a bong, OCB paper for making joints, and vaping machines are openly or legally sold in the market?

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