

# Empirical evidence in the links between cannabis and mental health issues



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Critically evaluate empirical evidence for the claim that cannabis use can lead to mental health issues.

According to the United Nations, 158.8 million people around the world use Cannabis.

This statistic is more than 3.8% of the planet's population (Drugfreeworld.org, 2018).

Cannabis, also known as marijuana and weed, is produced by a flowering hemp plant.

The substance contains more than 60 unique compounds collectively known as

cannabinoids. The main compounds are known as delta-9-tetrahydrocannabinol (THC) and cannabidiol (CBD). It is important to note that there are many strains of cannabis, some more potent than others. THC is known as the strongest psychoactive compound mediated by activation of the CB<sub>1</sub> receptors in the central nervous system. Behavioural change of cannabis consumption varies but widely known for the 'euphoriant effect' and effects on perception, whilst negative effects are known to be anxiety, paranoia and short-term memory. These are just a few examples of the effects cannabis has on an individual, but some are not so easily recognised. Marijuana has, in more recent years, been the centre of controversy because of its use as a medicinal agent. Unlike THC, CBD is a cannabinoid that doesn't make people "high" and stimulates its pharmacological properties without exerting any significant intrinsic activity on CB<sub>1</sub> and CB<sub>2</sub> receptors.

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It has been noted that the substance is useful in reducing pain and inflammation and controlling epileptic seizures, giving CBD a high potential for therapeutic use (Marijuana As Medicine 2018). Cannabis can be obtained in a number of forms varying from solids, oils and dried leaves and administration methods are commonly inhalation via smoking and ingestion of edible products (Bridgeman 2018). Recently, more countries such as Canada and various states in the US are legalising the substance and whilst many studies are linking cannabis and mental health in a variation, including an increased risk of psychosis, anxiety, and depression, it doesn't conclude that cannabis can cause mental health problems, but could heighten some symptoms of mental health disorders. More research is needed to characterise which individuals are most at risk for adverse consequences from their cannabis use such as mental health issues.

Adolescents consuming cannabis has been connected with a variety of undesirable cognitive, physical, and mental health consequences, some of which could lead to long-term deficits. Notably, among younger adults aged 16 to 24, cannabis was the most commonly used drug in the 2017/18 (Drug Misuse: Findings From The 2017/18 Crime Survey For England And Wales 2018), because of this, research in this field has found that whilst high amounts of cannabis use during adolescence has been linked to cognitive problems and reduced academic success, it's also significantly connected to mental health problems. There is research suggesting a link between adolescent cannabis use and depression, anxiety, externalizing disorders, and suicidality (Hawke et al, 2018), although the causality and directionality of the relationships have not been robustly determined. During

a meta-analysis, Moore et al. (2007), looked at studies that were specifically either longitudinal, population-based, or case-control studies, discovering that those who have ever consumed cannabis, had an associated increased risk of a psychotic outcome. Furthermore, when the analysis was restricted to studies examining the effects of frequent cannabis use, the researchers found a significant link, suggesting a dose-response relationship between cannabis use and the risk of a psychotic outcome (National Academies of Sciences et al. 2018), supporting the claim that cannabis use can lead to mental health issues. However, whilst this was produced using good-quality systematic reviews, they are heavily reliant on self-reports for cannabis use and the research lacks information on the frequency of use, patterns of long-term use, and possible confounding polysubstance effects. A review of depression in adolescents reported a small association between cannabis use and depression severity (Cairns et al. 2014). However, these outcomes do not indicate a causal pathway, and doesn't exclude alternative reasons such as social factors (Degenhardt et al., 2003, Lev-Ran et al., 2014), and adverse psychosocial consequences such as less education, unemployment and criminal activity. It is argued that Cannabis use moderately increases the risk of psychotic symptoms in young people but has a much stronger effect in those with evidence of predisposition for psychosis. This research had high reliability because they accounted and established risk factors for schizophrenia, such as urbanicity and familial predisposition (Henquet et al. 2004). It is important to note that research has discovered that Mental health disorders are more likely in young adults with polysubstance use disorders than those with alcohol or cannabis use disorders, but with longitudinal studies, the sample were subject to considerable attrition, and only 35% of <https://assignbuster.com/empirical-evidence-in-the-links-between-cannabis-and-mental-health-issues/>

the original cohort were included (Salom et al. 2015). Evidence that cannabis use may be a potential threat for later psychosis comes from a Swedish cohort study that revealed heavy cannabis use at age 18 amplified the risk of later schizophrenia six-fold. Though, could not establish whether adolescent cannabis use was a consequence of pre-existing psychotic symptoms rather than a cause. Although the study had a strong cohort retention, and little attrition bias, the study lacked adjustment for confounding variables and had a limited sample size that could be generalised to the population (Arseneault 2002). However, whilst evidence suggests that cannabis use by young individuals is a risk factor for psychotic symptoms in adulthood, the vast majority of cannabis users do not develop psychosis. This then prompts the idea that some people are genetically vulnerable to the detrimental effects of cannabis. A longitudinal study found that a polymorphism in the catechol-O-methyltransferase (COMT) gene moderated the influence of adolescent cannabis use on developing adult psychosis. Carriers of the COMT gene were most likely to exhibit psychotic symptoms and to develop schizophreniform disorder if they used cannabis. Cannabis use had no such adverse influence on individuals with two copies of the methionine allele. This discovery provides evidence of a gene x environment interaction and suggests that a role of some susceptibility genes is to influence vulnerability to environmental pathogens (Caspi et al. 2005).

Whilst it is evident that research findings suggest that consuming cannabis at a young age can cause mental health deficits in later life, it is important to consider that not every cannabis user develops psychosis or mental health

issues, and it would be beneficial to consider other lifestyles factors that could potentially cause mental health issues.

It is difficult to determine if cannabis use alone can lead to mental health issues and although cannabis is correlated with the increased risk of poor psychological well-being, depression, and anxiety compared to non-users, the association is still vague because of the lack of control of major confounds (Danielsson et al., 2016, Lovell et al., 2018). Research has suggested that Cannabis users had better health satisfaction, psychological and general health in comparison to tobacco users. This research also found that tobacco users had greater stress and poorer health satisfaction than cannabis users (Lovell et al., 2018). To further support this finding, epidemiological research has established that tobacco is more strongly associated with poorer mental health than cannabis (Degenhardt et al., 2001). However, this research did not consider recruiting a ' drug-naive' control group, restricting conclusions between cannabis users and non-drug users. Nevertheless, the results indicate that long-term tobacco use, alone, may be associated with poor mental and physical health. For this reason, perhaps future research would find it beneficial for amounts of tobacco to be controlled and measured in research investigating cannabis health outcomes. Similarly, research has distinguished that there are detrimental consequences linked with more frequent cannabis use. There is a risk of neuropsychological decline, which in turn can be harmful to aspiring career goals among college and university students and thereby affect one's mental health (Fanale et al., 2017), implying that it's not necessarily solely cannabis use that can lead to mental health issues but changes in

individuals' lives due to neuropsychological decline. Yet, this study only assessed dependence of cannabis during the first survey, causing restrictions of results regarding attitudinal barriers, which were solely measured in the third survey, to predict dependence. Another factor to consider is childhood trauma. This factor is associated with both substance misuse and risk for psychosis. In a study, cannabis and childhood trauma were significantly associated with risk of experiencing psychotic symptoms (Harley et al. 2009). Results from a similar study indicated that the impact of sexual trauma was statistically significant for those individuals who used cannabis under 16 years. Specifically, individuals consuming cannabis under the age of 16 and had been sexually abused, were 12 times more likely to be diagnosed with psychosis. Cannabis plays a mediating role that could suggest an increase of the proposed trauma-psychosis relationship and perhaps made sense of by both cannabis use and trauma acting indirectly on the dopaminergic system. This notes that cannabis alone is not necessary a cause of mental illness but a factor that can contribute to it. This study controlled for many confounding factors compared to others, however, there is potentially the underestimation of abuse, and could be useful to address specific comprehensive definitions of traumatic experiences which will improve gaining accurate history of an individual. Although there are many factors that could be considered when investigating if using cannabis use can lead to mental health issues, it is important to consider that perhaps cannabis could have properties that can sooth mental distress.

Whilst there is much debate that cannabis use can lead to mental health issues, it is also argued that cannabis has potential for treatment of

disorders such as post-traumatic stress disorder (PTSD), anxiety and substance use disorders (Walsh et al., 2017). It is important to note that there are many strains of cannabis that differ in variety with regard to concentrations of THC and CBD and because of these variations, psychoactive and therapeutic effects differ (Russo and Guy 2006, Schier et al., 2012). Whilst research regarding the efficacy of cannabis for PTSD treatment is still early; initial results from research appears encouraging. Oral THC and synthetic cannabinoids have been successful for improving sleep duration and quality, and decreasing the amount of nightmares and flashbacks among individuals that resist treatment (Roitman et al., 2014, Walsh et al., 2017). It would appear that carefully concentrated doses help individuals with symptoms related to a mental health deficit. Similarly, research has discovered the anxiolytic effects of cannabis therapeutic purposes (CTP), within 8 cross-sectional studies reporting relief of anxiety as a benefit of CTP (Bonn-Miller et al., 2014, Walsh et al., 2017). However, whilst CTP shows anxiolytic effects, one cross-sectional study reported retrospective reports that symptoms of anxiety returned upon termination of use (Swift et al., 2005). This research relied on recruitment of volunteers through advertisement on media outlets such as the radio and newspapers to interest a cross-section of people, but because of this, results are not representative of the experiences of all medicinal users, and affected by selection bias. Additionally, the study used a sample of medicinal users who were displeased with conventional treatments, and therefore more likely to consider unconventional treatments an option. Evidence connected to this issue are not robust, even though there are clear pharmacological differences across strains. There is not a significant amount of human

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studies that have compared the effects of differing levels of cannabinoids (Ilan et al., 2005) and because of this, further research is needed to evaluate the effectiveness of different cannabis strains.

A recent methodologically high-quality systematic review and meta-analysis, looking at recreational cannabis use (NMC) and depression indicated that cannabis users are at a modestly increased risk of developing depression compared to controls (Lev-Ran et al., 2014), but noted that further longitudinal investigations into the link between cannabis use and depression is required, particularly close analysis of exposure to cannabis and significant confounding factors. Investigations on the association between NMC and Bipolar Disorder, following three reviews, concluded that NMC may prolong or worsen manic states (Gibbs et al., 2015), which in turn, is the opposite of soothing mental distress, however the reviews were only able to identify a small number of studies of variable quality, therefore the conclusions remain preliminary. A recent epidemiological review noted that results from case-control, cross-sectional, and cohort studies supports an association between NMC and development of later psychosis and schizophrenia (Gage, Hickman, & Zammit, 2015). Although evidence of an association between cannabis and psychosis is robust, the extent to which cannabis use plays a causal role in the development of psychotic disorders has not been definitively determined (McLaren et al., 2010). Whilst CBD has been shown to help those with neurological disorders such as multiple sclerosis, there is still little research regarding CBD and mental health disorders. Research has presented evidence that illustrates cannabis being

beneficial for treatment purposes when regarding PTSD. Although more research is necessary ...

It appears that consuming cannabis at a young age could potentially cause an early onset of psychosis and an even stronger effect in those that have a predisposition for psychosis. Evidence has shown that there is an association between cannabis use and the risk of a psychotic outcomes in addition to a small association between cannabis use and depression severity. When determining if cannabis use alone causes mental illness it is vital to consider other confounding variables that could impact results. Much research has suggested other factors such as tobacco and alcohol use that could contribute to these issues, in addition to lifestyle factors that could in turn affect one's mental well-being and start a decline. Further research is still required to evaluate the effectiveness of different cannabis strains and for its potential for treatment of disorders such as PTSD, anxiety and other disorders. Cannabis and cannabinoid agents are still widely used to alleviate symptoms or treat disease, but their efficacy for specific indications is not well established. Nevertheless, it is difficult to determine whether cannabis use can lead to mental health issues as empirical evidence does not provide solid evidence.

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