What Is the Impact of Cannabis on Mental Health Treatment for Depression and Anxiety? A Detailed Examination at Cannabis Use and its Influence on the Outcome of Therapy

by

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Abstract

The legalization of recreational cannabis in Canada has dramatically increased its availability and has changed attitudes surrounding cannabis and its usage. However, the impact of cannabis on mental health remains poorly understood despite its legalization, specifically its impact on depression and anxiety while users are in treatment. This paper is intended to synthesize existing literature on cannabis and its impact on therapeutic progress for individuals receiving treatment for depression and anxiety by way of a comprehensive literature review from the perspective of a harm reduction framework. The research reveals that while there are some components of cannabis like CBD that has the potential for therapeutic benefit, other components like THC are more likely to interfere with therapeutic progress. This capstone also proposes a framework for clinicians working with cannabis users who are in treatment for anxiety and depression that integrates harm reduction and clinical approaches, like psychoeducation and strength-based, solution-focused interventions. This paper aims to contribute to the limited amount of literature and knowledge on cannabis and its impact on mental health treatment outcomes, while also acting as a starting point for guidance for clinicians working with such populations.

Keywords: cannabis, depression, anxiety, cannabidiol, harm reduction

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Chapter One: Introduction

The legalization of recreational cannabis in Canada in 2018 has fundamentally changed the landscape of mental health care, creating challenges for clinicians working with populations who use cannabis while also in treatment for depression and anxiety. While the therapeutic potential of cannabis is poorly understood, some studies suggests that cannabis may have neuroprotective properties, while others indicate long-term use may worsen anxiety and depression over time (W. Hall et al., 2019). This polarization creates a difficult landscape for clinicians to navigate, facilitating a situation where clinicians must acknowledge the limited evidence that exists on the topic while also supporting clients who use cannabis recreationally during treatment. This capstone intends to synthesize existing literature to answer the question: What is the impact of cannabis on mental health treatment outcomes for depression and anxiety? The question will be examined through a harm reduction framework that emphasizes client autonomy while also minimizing harm. The goal of this capstone is to act as a guide that provides clinically sound insights to help support clinicians who are navigating the complexities of cannabis and its impact on treatment for depression and anxiety.

Overview of the Topic

Cannabis use and mental health treatment provide a complex landscape for clinicians to navigate. Combining the legalization of recreational cannabis in 2018 and the change in attitude towards the substance itself in Canadian society marks a pivotal point in mental health care, acting potentially as one of the more contemporary, clinically relevant and complex challenges facing practitioners (Health Canada, 2024). With the recent legalization, cannabis has become more accessible, has lessened stigmatization for those who use, and has provided more opportunities to experiment with its potential therapeutic effects (Sorensen et al., 2022).

The relationship between cannabis and Canadian society has experienced dramatic transformation. In 1908, the Canadian government passed the *Opium Act*, which criminalized the possession, manufacturing, and sale of opium for non-medical purposes (Boudreau & Hamill, 2021). This snowballed into the government prohibiting the use of cocaine, alcohol, and other opiates, including the prohibition of cannabis in 1923 (Boudreau & Hamill, 2021). While alcohol was being increasingly socially accepted, cannabis was seen as a threat to the morality of Canadian society (Boudreau & Hamill, 2021). This prohibition suggests the fight against cannabis was associated with moral panic in Canada, where users were seen as fiends who needed harsh legal punishment (Boudreau & Hamill, 2021). It was not until 2018 that the fight against cannabis ended in Canada, introducing a dramatic overall change in attitude towards the substance and legalization (Health Canada, 2024).

Despite its legal status shift in Canada, there remains debate surrounding cannabis policy on its effect on the population, specifically mental health. There are a variety of perspectives on the risks and benefits of cannabis use, ranging from cannabis use at a young age risks developing depressive and anxious disorders, cannabis dependence, cognitive impairment, etc., to the use of cannabis as having neuroprotective properties, suggesting it has the potential to repair brain cells to help treat psychiatric disorders (W. Hall et al., 2019). The range in perspectives offer two competing sides to the debate. The former claim is used to justify the continued prohibition of cannabis in some countries, while the latter justifies legislation for medicinal and recreational use (W. Hall et al., 2019). This range in perspectives demonstrate the complex situation clinicians face when clients use cannabis throughout the treatment process. This ongoing debate forms the foundation of this capstone's focus, as the therapeutic potential of cannabis remains poorly understood, specifically regarding its impact on treatment outcomes for depression and anxiety.

This capstone represents a contemporary area of research where the body of literature is limited, and few conclusions have been drawn regarding the impact of cannabis on depression and anxiety treatment outcomes. The complexity of cannabis and its effects on mental health creates issues for researchers attempting to reach definitive conclusions about its effects on depression and anxiety treatment outcomes. Some evidence suggests that cannabis can be used to help alleviate symptomology, while other research claims that over time, it can make symptoms worse, essentially worsening depression and anxiety (Rup et al., 2022).

Purpose Statement

This paper synthesizes the data that exists on whether cannabis affects depression and anxiety symptoms, and in essence, how cannabis may affect the outcome of treatment for depression and anxiety. The significance of this investigation is demonstrated by the prevalence of cannabis where 1 in 6 people reported cannabis use in the past 30 days in 2024, which equates to 17% of the Canadian population (Health Canada, 2024). Additionally, 26% of Canadians reported cannabis use in the past 12 months in 2024 (Health Canada, 2024). Therefore, more research is needed in the field to truly understand how cannabis can affect mental health. This paper is intended to fill the knowledge gap and synthesize findings on whether cannabis can positively and negatively affect depression and anxiety treatment outcomes.

This capstone aims to answer the following question: What is the impact of cannabis on mental health treatment for depression and anxiety? Throughout the literature review, a thorough examination of cannabis and its influence on treatment outcomes for depression and anxiety will attempt to draw conclusions from the limited data that exists. Exploring the research question involves examining different aspects of cannabis pertaining to treatment outcomes, including the general effects of cannabis on the brain, different molecular components of cannabis and their

effects, the self-medication hypothesis, possible therapeutic effects of cannabis, and the direct influence cannabis can have on treatment outcomes for depression and anxiety. This capstone aims to help clinicians understand how to help treat and support their clients who may be using cannabis recreationally while undergoing treatment for depression and anxiety. Additionally, this capstone aims to act as a resource for clinicians struggling to support their cannabis-using clients and promote competency in working with those who may experience negative impacts of cannabis while in treatment, by suggesting an integrated counselling approach influenced by the findings of Buckner et al. (2021) and Turner et al. (2014) that incorporates a harm reduction framework.

Theoretical Framework

For this capstone project, the primary theoretical framework for this study is harm reduction. Approaching this research under this framework involves exploring the literature with the intent to minimize potential harmful outcomes associated with cannabis in real-world settings, while also acknowledging and maintaining a client's autonomy if they choose to use (Haddad et al., 2024). Pragmatism and humanism are integral to a harm reduction framework, which involves acknowledging substance use as part of being human, free of bias and judgment (Haddad et al., 2024). Approaching the research with this framework requires the literature to be collected and shared as an exploration of findings, with the intent to demonstrate that instead of imposing a mandatory cessation of substances for those in treatment, perhaps there could be real therapeutic benefits that, with competence, a clinician could practice harm reduction strategies with cannabis-using clients to promote safe use and informed choice-making (Haddad et al., 2024). This approach to treatment includes psychoeducation on cannabis and its potential impacts on depression and anxiety symptoms with clients. Helping clients understand how

cannabis use could be harmful rather than beneficial could help facilitate the conversation about the potential impact of cannabis use habits on treatment outcomes. On the contrary, facilitating the conversation about cannabis use could also establish what benefits clients find from their use and how it could apply to the overall therapeutic process.

Of importance to note, some barriers exist that may prevent users from disclosing their cannabis use, avoiding the topic and preventing a clinician and client from developing harm reduction strategies. For example, cannabis users who are in treatment for depression and anxiety may avoid disclosing their cannabis use due to perceived stigma (Reid, 2020). While the legalization of cannabis can help reduce stigmatization of cannabis, a shift in policy does not shift social perceptions on their own (Reid, 2020). This capstone does not discuss stigma at length, but it is imperative to understand that some clients may feel their cannabis use may promote judgment from clinicians. Rather than disclose their use, clients may feel the need to conceal and reframe how they use cannabis, whether it is for therapeutic or recreational use (Dahlke et al., 2024). Regardless of the post-legalization landscape, users may feel they must conceal their consumption of cannabis from health care professionals (Dahlke et al., 2024). Consequently, it is important for clinicians to perform routine cannabis use screening in order to assess where the client could use support under a harm reduction lens, avoiding a potential area of deficit in knowledgeable care (King et al., 2024)

Methodology

To complete this capstone project, several searches were done on the City University of Seattle library to find relevant articles, studies, and perspectives on cannabis and its impact neurologically and on treatment outcomes for depression and anxiety. Databases like PubMed, PsychInfo, and multiple academic publisher websites were used to find relevant material. Key

search terms like “cannabis,” “marijuana,” “depression,” “anxiety,” “impact,” “treatment outcomes,” “harm reduction,” “CBD,” “THC,” “disorder,” “CUD,” “mental health impact,” and “therapeutic progress” were used, with a geographical distinction of “Canada” when possible. The studies included in the literature review were ones that directly researched the impact of cannabis on depression and anxiety and attempted to explain the relationship, or ones that studied cannabis and its impact on general functioning, the brain, and the therapeutic process. The literature review is a synthesis of the findings on whether cannabis benefits or harms treatment outcomes for depression and anxiety and explores options on how to approach working with cannabis-using populations when treating depression and anxiety. The entire capstone project was reviewed by multiple readers to ensure the project met the minimum requirements and was well presented. This review included time for proofreading and editing to ensure American Psychological Association’s style compliance.

Contribution to the Field

The intent of this capstone is not only to examine the limited literature that exists on cannabis and its impact on treatment outcomes for depression and anxiety but also to act as a guide for practitioners in the field who may find the conversation on cannabis-use difficult to navigate given its complex relationship with treatment outcomes for depression and anxiety. Incorporating a harm reduction framework into practice includes educating clients on the potential impacts of cannabis use while in treatment and initiating the conversation on harm reduction strategies to reduce the potential limitations of therapeutic progress caused by cannabis use. If a client is resistant to limiting cannabis use or engaging in harm reduction strategies, another perspective is to best support the client in their use and explore its potential therapeutic benefits (Feingold, 2020; Stuart-Maver, 2020). In this way, the conversation can be centred on

how to use cannabis appropriately for their potential benefit and discuss ways to acknowledge if their cannabis use is becoming dysfunctional in their therapeutic progress. This capstone intends to apply to both scenarios, in that it provides sound data to practitioners for both the harms and benefits of cannabis use when in treatment for depression and anxiety.

Reflexivity and Positionality Statement

This topic is significant due to personal experience in navigating the post-legalization cannabis landscape in Canada. Having reached adulthood in 2018, I have observed the widespread use of cannabis in my social and family circles. While cannabis has existed for centuries, the legal status change in Canada in 2018 has created an opportunity for research to grow, yet the data that exists is still quite limited despite the widespread use. Therefore, the gap between the prevalence of use and the evidence supporting therapeutic versus problematic use regarding the effect of cannabis on clients in treatment for depression and anxiety drives my interest.

From an observational standpoint, I have seen cannabis function as something more harmful than beneficial to anxious and depressive symptoms. These observations inform my hypothesis that existing literature will demonstrate that cannabis may act more harmful than not for users in treatment for depression and anxiety. I can acknowledge the potential for cannabis as a therapeutic tool; however, my position is that cannabis use does more harm than good in the long term. I conceptualize cannabis as providing a temporary escape from depression and anxiety symptoms, with the risk of developing a dependency if temporary relief is needed frequently. Consequently, to mitigate my own biases, I approach this research with the goal of identifying the most effective ways to support clients who experience depression or anxiety while also using cannabis and who may be at risk of developing dependency or developing cannabis use disorder

(CUD). This goal is further accomplished by exploring the literature with a harm reduction lens in order to focus on supporting clients, rather than seeking literature that supports established biases.

Post-legalization of cannabis in Canada, I find that the use of cannabis is widespread, yet the long-term effects of frequent use are poorly understood. Many users seem to be uninformed or resistant to understanding and acknowledging the potential mental and physical impacts of cannabis. From an observational perspective, it seems as though cannabis has received widespread acceptance on the same scale as alcohol, which has well-documented risks. My perspective places cannabis as a substance with potential to be exploited similarly to the potential of alcohol, acting as a detriment to one's wellbeing when misused. My critical stance does not limit my interest in the potential holistic and therapeutic applications of cannabis. My research interest applies to critically analyzing whether data supports therapeutic applications beyond the temporary relief of depression and anxiety symptoms. I am approaching this investigation hoping that the outcome of this capstone challenges my initial assumptions, and that data supports the therapeutic use of cannabis.

Definition of Terms

This section will be used to define common terms used throughout the capstone. The definition of terms is as follows:

Anxiety: Anxiety is a natural response to danger, whereas an anxiety disorder is classified as intense and persistent worry or fear about situations that occur on a daily basis. While everyone has a form of anxiety as a natural response to dangerous stimuli, anxiety disorders differentiate themselves by having this response to everyday situations. Within the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*), anxiety is characterized as

excessive fear and related behavioral disturbances about events or activities, where an individual has difficulty controlling the worry (American Psychiatric Association [APA], 2013; Mayo Clinic, 2025).

Anxiety symptoms: Common anxiety symptoms are feeling nervous, restless and rapid breathing, sweating, trouble sleeping, increased heart rate, and avoiding situations due to fear of anxiety. Additionally, the *DSM-5* classifies the following symptoms as diagnostic criteria for anxiety: excessive anxiety and worry occur more days than not for 6 months about events; difficulty controlling the worry; anxiety is causing significant distress; disturbance is not attributed to substances; disturbance is not better explained by another disorder; and anxiety and worry are associated with restlessness, fatigue, difficulty concentrating, irritability, muscle tension, and sleep disturbance (APA, 2013; Mayo Clinic, 2025).

Anxiolytic: Anxiolytics are a type of medications that prevent and treat anxiety and anxiety symptoms. Typically, anxiolytics are found in prescription pill forms (Whitten & Bhandari, 2025). In the context of cannabis, cannabis is argued to potentially have anxiolytic effects. Therefore, it is argued that cannabis can act as a deterrent to anxiety symptoms or the disorder itself.

Cannabis: Cannabis, also known as marijuana, refers to the plant *Cannabis sativa*. It is a plant with historical roots in Asia, which found its way around the globe, including Canada (Health Canada, 2023).

Cannabis use disorder: A diagnosis of combined cannabis abuse and dependence, where one displays a problematic pattern of cannabis use which leads to dramatic dysfunction and impairment. The *DSM-5* classifies the following symptoms as diagnostic criteria: strong urge to use cannabis, important social and occupational activities are reduced due to cannabis, persistent

desire to cut down however unsuccessful, cannabis is consumed in larger amounts over a longer period than intended, cannabis use results in failure to fulfill obligations at work or school, consistent cannabis use despite persistent social or interpersonal issues, cannabis use in situations where it is hazardous, and continued cannabis use despite knowledge of associated issues and the development of high tolerance (APA, 2013; Patel & Marwaha, 2024).

Cannabis strains: A term used to describe the classification of the cannabis plant. Cannabis strains present themselves under "sativa" or "indica," which is based on the morphology and genetic differences of the particular plant. This distinction was historically placed due to the plant's places of origin and characteristics. Both sativa and indica plants are classified under cannabis; however, unique to the classifications, they differ in chemical compounds like cannabidiol (CBD) and tetrahydrocannabinol (THC; Herwig et al., 2025).

Cannabinoids: Cannabinoids are the chemicals that exist within the cannabis plant. There are over 100 different cannabinoids. Cannabinoids are what cause the body and brain to react to cannabis, as they have an effect on cell receptors in the brain (Health Canada, 2023).

Cannabidiol: Cannabidiol, also known as CBD, is a cannabinoid within the cannabis sativa plant, comparable to THC. However, CBD differentiates itself from THC by not producing psychoactive effects. Rather, CBD is a cannabinoid that may act as the therapeutic property of cannabis (Health Canada, 2023).

Depression: Depression is classified as a mood disorder that causes a consistent feeling of sadness and loss of interest. Depression can affect one's daily functioning, leading to emotional and physical problems. Under the *DSM-5* (APA, 2013), a key feature to depression is the feeling of a depressed mood or loss of interest or pleasure in all activities lasting at least two weeks. To

be classified as depression, individuals must also experience depression symptoms during the same two-week period (APA, 2013; Mayo Clinic, 2022).

Depression symptoms: Common depression symptoms include feelings of sadness, hopelessness, irritability, lack of energy, suicidal thoughts, and physical pains. Additionally, the *DSM-5* classifies the following symptoms as diagnostic criteria for depression: depressed mood most of the day and nearly every day, diminished interest or pleasure in activities, significant weight loss, insomnia, psychomotor agitation, fatigue or loss of energy, feeling worthless or excessive guilt, diminished ability to think or concentrate, and recurrent thoughts of death (APA, 2013). Additionally, the listed symptoms cause significant distress or daily dysfunction, and the symptoms are not associated with substance use or another condition (APA, 2013; Mayo Clinic, 2022).

Harm reduction: A framework designed to minimize as much harm as possible associated with substance use outcomes, which spans across the individual, psychological, legal, and social landscapes (Haddad et al., 2024). This framework encourages practicing pragmatism and humanism approaches to substance use, where substance use is accepted without moral judgment (Haddad et al., 2024).

Self-medication hypothesis: A hypothesis that attempts to explain the relationship between mental health and substance use. It is based on the idea that individuals use substances to temporarily alleviate symptoms of mental health disorders, which may develop into further substance-related complications (Beletsky et al., 2024; Feingold, 2020; Stuart-Maver, 2020)

Tetrahydrocannabinol: Delta-9-tetrahydrocannabinol, also known as THC, is the psychoactive component of cannabis that produces the “high” when consuming cannabis. THC is one of the cannabinoids in cannabis among many others (Health Canada, 2023).

Outline of Chapters

The chapters that are presented in this capstone begin with Chapter One, which consists of the introduction to the topic, briefly discussing the key terms and the applicability of the topic to the counselling field, and my personal interest to the topic. Chapter Two consists of the literature review, and Chapter Three consists of a discussion of the findings from the literature and how it applies in practice. Chapter Two begins with foundational concepts of cannabis, including how it affects the brain and the self-medication hypothesis and how it applies to cannabis and its interaction with mental health. The remainder of the chapter explores the effects of cannabis on depression and anxiety symptoms and how the complex relationship affects treatment outcomes. Chapter Three focuses on a discussion of what was found in the literature and how it relates to the research question, limitations within the literature, how the findings can be applied in practice, personal learnings from the entire capstone project, and a final overview of the entire capstone project.

Chapter Two: Literature Review

This chapter explores existing literature that discusses the impact that cannabis consumption has on treatment outcomes for anxiety and depression and aims to answer the following research question: What is the impact of cannabis on mental health treatment for depression and anxiety? The literature review is organized thematically to synthesize findings across multiple studies in an attempt to understand the complex relationship between cannabis use and treatment outcomes for anxiety and depression. The literature review begins with a general discussion of the effects of cannabis on the brain and mental health, to lay the groundwork for how cannabis might affect symptoms of depression and anxiety. This introduction helps facilitate a general understanding of why cannabis may be considered harmful for those who are in treatment for anxiety and depression. The research is presented and examined using a harm reduction framework, to use what is found in the literature as a direction for clinicians to understand and incorporate into their practice with clients who may be experiencing the negative side effects of cannabis while in treatment settings. The literature that is presented focuses on how cannabis affects not only depression and anxiety symptoms and treatment outcomes but also how it applies in a clinical setting. Presenting the literature in this way provides context for clinical application of the findings in how clinicians might see what is found displayed in real-world scenarios, like with clients, and how they can be treated.

The following sections of the literature review explore how cannabis affects anxiety and depression, as well as its impact on treatment outcomes. It is important to note that both depression and anxiety have multi-faceted etiological presentations, and the development of these disorders occur uniquely for every individual and depend on a multitude of environmental, genetic, and neurotransmission risk factors (Mayo Clinic, 2022, 2025). This capstone

acknowledges the complex nature of these disorders and its interaction with cannabis. Rather than being written with a specific stance in mind, the intent is to review and explore the literature and discuss the findings objectively.

Section A: General Overview of Cannabis, the Brain, and the Self-Medication Hypothesis

Cannabis and the Brain

Cannabis can influence our mood and cognition by promoting body relaxation and decreasing or increasing emotions, among other effects (Kancherla et al., 2021). The literature suggests that for those who are battling depression and anxiety, this influence on the body can be perceived as beneficial due to the relaxation and mood-altering properties that cannabis may provide, which offers temporary relief from distressing symptoms (Beletsky et al., 2024; Feingold, 2020; Stuart-Maver, 2020). Beletsky et al. (2024) attempted to investigate the causal pathways and mechanisms between cannabis and anxiety by performing an extensive, systematic search of the literature that exists on the relationship between cannabis use and anxiety. The researchers examined literature from 2008 to 2022 using the PubMED and MEDLINE databases. They searched for studies using the terms “anxiety,” “anxiogenic,” “anxiolytic,” “cannabis,” “THC,” “GAD,” “PTSD,” “marijuana,” and “OCD.” The authors included all studies written in the English language that examined anxiety and cannabis and that focused on finding a causal link (Beletsky et al., 2024). While this article discusses current findings regarding cannabis and its mechanisms, it is a review of existing literature, which suggests that the studies included present different approaches, methodologies, and variations in the findings. Beletsky et al. found that cannabis acts as a method of relief for those suffering from anxiety, and this is the most probable explanation for why there is a relationship between cannabis and mental health symptomology.

While Beletsky et al. (2024) incorporated all studies allowing sufficient data to be extracted, a challenge with this approach is the lack of exclusionary criteria, which could help in excluding studies that did not provide sound data. However, as the authors note, the lack of studies on cannabis and its interaction with mental health symptomology facilitates a need for more research. Therefore, it is understandable why all data was considered, regardless of the geographical population, applicability of findings, and the research approach of the studies included.

In comparison, Feingold (2020) and Stuart-Maver (2020) present a commentary on the ethical and clinical dilemmas of working with cannabis-using clients who may use to self-medicate, which acts as a support to the findings from Beletsky et al. (2024). The findings from Beletsky et al., which suggest that cannabis is used for anxiety relief, are supported by Feingold and Stuart-Maver by acknowledging the use of cannabis for anxiety management and discussing ways in which clinicians can support clients who may choose this approach. While the articles from Feingold and Stuart-Maver are helpful in understanding how a clinician could navigate the complexities of self-medication with cannabis and its impact on treatment outcomes, the authors do not specify their research approach and geographical population applicability, similar to Beletsky et al. The articles by Feingold and Stuart-Maver act more so as a tool for clinicians to support cannabis-using clients, while also respecting ethical and clinical boundaries.

Several studies have shown that cannabis has the potential to promote effects like mania, hallucinations, and worsening of depression and anxiety symptoms (Crippa et al., 2009; Haller, 2024; Kancherla et al., 2021; Kedzior & Laeber, 2014; Smolkina et al., 2017). These effects may occur due to the disruption of neurotransmission function and the potential for cannabis to alter chemical balance in the brain in ways that could worsen depression and anxiety, among other

mental health concerns (Navarro et al., 2022). Additionally, cannabis components like THC can promote symptoms that resemble schizophrenia (e.g., memory loss, anxiety, etc.; Kancherla et al., 2021). Therefore, if cannabis is used on a chronic basis, some cases can reflect disorders like depression, bipolar disorder, and schizophrenia. The user may still see cannabis as therapeutic due to the self-medication hypothesis, which is discussed in the next section. However, if the user has one of the above-listed disorders or a combination of them, frequent cannabis use could be worsening the symptoms of the disorders (Beletsky et al., 2024; Kancherla et al., 2021; Temple et al., 2014).

Cannabis primarily interacts with the brain through the endocannabinoid system. This system is integral to regulating mood, stress, and emotions (Morena et al., 2016; Navarro et al., 2022). When cannabis enters the body, it can disrupt neurotransmission and alter brain chemistry, which can become problematic with the continued use of cannabis (Navarro et al., 2022). This alteration and disruption of neurotransmission is concerning for vulnerable individuals who struggle with mental health, as their brain chemistry may already be altered slightly, and they may be more vulnerable to external factors like cannabis (Navarro et al., 2022). These effects may make a user more vulnerable to developing psychiatric disorders (Navarro et al., 2022). Chronic cannabis use has been shown to lead to changes in brain function like in areas responsible for memory, emotional regulation, and everyday functioning (Nader & Sanchez, 2018). These maladaptive effects can also persist even after cessation of use, with recovery possible after an extended period of abstinence (Yücel et al., 2016).

There is also research that supports the beneficial potential of cannabis, specifically CBD, and its interaction with the endocannabinoid system. Lee et al. (2024) conducted a literature review that examined the current state of knowledge on CBD and its potential therapeutic

application through its interaction with the endocannabinoid system. While the authors fail to give detail into how they performed their literature review or which databases they consulted, the authors described their area of interest as being focused on the pharmacological properties of CBD, the mechanisms of action, and its potential use for medical conditions (Lee et al., 2024). The results of their study demonstrated that there are cases where CBD has been used to help treat a variety of cases concerning posttraumatic stress disorder (PTSD), physical chronic diseases, and stress (Lee et al., 2024). CBD binds to the CB2 receptor, which is found in immune cells of the peripheral nervous system. The activation of this receptor can trigger an immune response that may help reduce inflammation, which suggests that CBD may have physical healing properties in addition to alleviating mental health symptoms (Lee et al., 2024). While the results of this study are promising, the lack of a methodological description and inclusionary criteria for the studies included in their review bring into question the reliability and validity of their data.

The Self-Medication Hypothesis: An Attempt to Find Causality

The self-medication hypothesis is pertinent in understanding the relationship between cannabis use and mental health symptoms. The hypothesis is a consistent theme throughout the literature (Beletsky et al., 2024; Turner et al., 2018). The self-medication hypothesis originally attempted to find psychological causation between anxiety disorders and substance use, which found that substances are perceived as a coping mechanism to suppress difficult symptoms relating to mental health disorders (Turner et al., 2018). Therefore, the hypothesis suggests that substance users may consume substances as a form of self-treatment for untreated or inadequately treated mental health disorders due to the perceived efficiency of substance use as a coping mechanism (D. Hall & Queener, 2007; Turner et al., 2018). Robinson et al. (2011)

attempted to study and test this hypothesis. Their research explored the relationship between self-medication and the development of substance use and anxiety disorders through a quantitative, longitudinal survey administered through the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) between 2001 and 2005 in the United States. This longitudinal survey includes measures of sex, income, ethnicity, age, geographical location, education, and marital status (Robinson et al., 2011). Additionally, the Alcohol Use Disorder and Associated Disabilities Interview Schedule-IV from the fourth edition of the *DSM* was used to make diagnoses concerning anxiety, personality, and substance use disorders (Robinson et al., 2011).

The survey assessed the severity of the respondent's anxiety presentation and whether their presenting symptoms related to substance use, effectively associating the two in order to test whether the relationship demonstrated the hypothesis (Robinson et al., 2011). The results of the study confirmed the hypothesis, indicating that self-medication acts as a risk factor for the development of anxiety and substance dependency. This finding suggests that users initially turned to substance use to self-medicate difficult symptoms associated with anxiety (Robinson et al., 2011). The findings from Robinson et al. (2011) are crucial in understanding the role of the self-medication hypothesis and cannabis use. However, it is important to note that the findings may be limited in terms of geographical location and year of study. Robinson et al. conducted their study out of the United States and focused on data between 2001 and 2005, meaning that replicating the same study within Canada and in the current day may yield different results based on differing attitudes within Canada and current trends. However, these findings are consistent with results from other studies attempting to find causation between mental health disorders and cannabis use (Beletsky et al., 2024; Turner et al., 2018), suggesting that despite the limitations, the results are important to consider. Consequently, this hypothesis suggests that individuals with

mental health symptoms and conditions like depression and anxiety may turn to cannabis as a form of self-treatment (Feingold, 2020).

The self-medication hypothesis relates cannabis use to the temporary alleviation of anxiety and depression symptoms (Quello et al., 2005). Most cannabis users report having anxiety symptomology before using cannabis, suggesting that some users turn to cannabis as a self-medication tool (Beletsky et al., 2024). Cannabis users may be experiencing anxiety and depression in their day-to-day lives and then turn to cannabis as a quick fix to alleviate their symptoms due to the relaxation and stress relief properties (Temple et al., 2014). Therefore, the appeal of cannabis for self-medication is understandable from the perspective of those potentially struggling with mental health symptoms. Cannabis can provide immediate relief for some symptoms, like low mood and feeling anxious, due to its properties (Temple et al., 2014). Therefore, the idea of reduced anxiety or improved mood may act as a motivating factor to self-medicate, especially for those who have not found an alternative method of relief.

The self-medication hypothesis also reveals potential issues with cannabis use in the context of mental health treatment for depression and anxiety (Quello et al., 2005). When cannabis is relied on to manage symptoms, there is the possibility that users may be less motivated to engage in other therapeutic interventions, or they may be hesitant to develop alternative coping strategies (Lowe et al., 2019). Having a means to temporarily relieve symptoms may drive one to use cannabis more frequently, in turn creating a dependence (Mojtabai et al., 2012). As a result, the self-medication hypothesis may suggest that individuals with depression and anxiety justify cannabis use based on properties of cannabis that align with their symptoms (Robinson et al., 2011; Wallis et al., 2022).

Quello et al. (2005) reviewed existing literature that focused on mood disorders and substance use in an attempt to discuss the complex relationship. While the authors fail to give specifics on the inclusion criteria for the studies examined, the article acts as a discussion on the complex interaction between substance use and the development of mood disorders and provides recommendations for clinicians on navigating the complexities with clients (Quello et al., 2005). Pertinent to the self-medication hypothesis, Quello et al.'s findings suggest that individuals with anxiety may use cannabis for its calming effects, while those with depression may use it to help improve mood. However, these are short-term benefits, and they may facilitate long-term mental health issues and restrict treatment progress (Wallis et al., 2022).

Self-medication with cannabis is concerning because it occurs without clinical guidance or supervision and lacks standardized dosing or supervision to prevent adverse negative effects (Asselin et al., 2022). There is the possibility that individuals may worsen their symptoms of depression and anxiety, consume too much at one time, or develop patterns of problematic use that interfere with their daily functioning (Lowe et al., 2019). The self-medication hypothesis emphasizes the importance of working with clients in addressing depression and anxiety symptoms with therapeutic evidence-based approaches and treatments rather than clients relying on symptom management with cannabis. Indeed, cannabis may provide temporary relief, but it may not be able to treat the root cause of depression and anxiety or help individuals develop healthy, long-term coping mechanisms (Lowe et al., 2019). The findings from previous studies regarding self-medication (Beletsky et al., 2024; Robinson et al., 2011; Turner et al., 2018) suggest that long-term cannabis use may act as a vicious, re-occurring cycle. Specifically, when mental health disorders are left untreated, users may self-medicate for temporary relief, which may exacerbate existing symptoms and prompt them to use again (Colder et al., 2019; Lowe et

al., 2019; Renard et al., 2014). Early intervention is crucial, and the introduction of long-term, sustainable coping mechanisms may act as a model for change in users stuck in this cycle (Colder et al., 2019; Lowe et al., 2019).

This section is important for counsellors to understand in order to engage in discussion with clients about their cannabis use and how it may impact their functioning and therapeutic progress. The self-medication hypothesis offers a framework to help understand why clients may turn to cannabis as a coping mechanism, which allows a clinician to approach cannabis-using clients with a discussion surrounding their use of cannabis and how it may impact their presenting symptoms of depression and anxiety (Beletsky et al., 2024; Turner et al., 2018). Addressing this potential reason for chronic cannabis use early in treatment can help break the cycle of self-medication that may worsen symptoms of depression and anxiety.

Section B: The Relationship Between Cannabis and Anxiety

The relationship between cannabis and anxiety presents itself in a paradoxical fashion that is clear among multiple studies. Cannabis is commonly used to cope with mental health challenges and stress (Thiessen & Schütz, 2024). The cannabinoids themselves within the cannabis plant have been theorized to act therapeutically towards different psychiatric disorders and related symptoms (Thiessen & Schütz, 2024). However, cannabis use, especially early cannabis use, is consistently associated with the development of mental health challenges including depression, psychosis, and anxiety (Thiessen & Schütz, 2024). This relationship may be able to explain some of the contradictory findings in the literature and highlight the importance of considering with a client not just whether they use cannabis but also the quantity, frequency, and type of cannabis in terms of how CBD-dominant or THC-dominant it is (Hutten et al., 2022; Turna et al., 2017).

Cannabis Acting as an Anxiety-Inducing Substance

Multiple studies demonstrate that cannabis can increase anxiety symptoms and potentially lead to clinically relevant anxiety disorders. A quantitative meta-analysis by Kedzior and Laeber (2014) examined 267 pieces of literature and analyzed 31 studies that met their inclusionary criteria. The studies included had to include data from the general population, anxiety diagnoses in cannabis users, cannabis use in cases with no anxiety, and sufficient data to compute effect sizes. The studies included in their analyses covered a wide variety of approaches, including longitudinal and cross-sectional designs, allowing for a mix of extracted data. Populations included adolescents in and out of high school and adults of age in their respective jurisdictions. Additionally, the studies used a variety of validated assessment tools (Kedzior & Laeber, 2014). Combining the variety of methodological approaches promotes the applicability of the findings to the general population.

The authors found through their analysis that the general population with various anxiety disorders, or anxiety and depression, were more likely to use cannabis or had a dependency on the substance compared to those who did not have anxiety disorders (Kedzior & Laeber, 2014). Within the diagnostic criteria for the inclusion of studies in their meta-analysis, one criterion was the clinical diagnosis of anxiety. There was a small positive association between anxiety and cannabis use within this subgroup of studies (Kedzior & Laeber, 2014). Additionally, for the included studies that reported cannabis use at a baseline and measured anxiety levels at a follow-up as a longitudinal design, these studies found that anxiety levels were higher when measured at the follow-up.

This study demonstrates that cannabis users who may or may not be dependent on the substance but who use cannabis frequently have a higher chance of developing clinical anxiety

(Kedzior & Laeber, 2014; Lowe et al., 2024). The longitudinal research design included in their meta-analysis provides evidence for the potential role of cannabis in anxiety development. Following cannabis users over time may provide a better chance at establishing relationships between cannabis use and anxiety symptoms due to the longer period of study and points of assessment. The finding that anxiety levels increased from baseline to follow-up among the cannabis users suggests that cannabis use may contribute to anxiety development rather than simply being a response to pre-existing anxiety that was present at baseline (Lowe et al., 2024; Xue et al., 2021). The association between cannabis use and anxiety was found to be significant in the meta-analysis, among other factors like gender, age, and genetics (Kedzior & Laeber, 2014). This finding suggests that while cannabis use is associated with increased anxiety risk, it is not the sole factor in anxiety development (Bortolato et al., 2010; Kedzior & Laeber, 2014).

In support of these findings, research by Crippa et al. (2009) found associations between cannabis use and anxiety symptoms. Similar to Kedzior and Laeber (2014), Crippa et al. performed an extensive, quantitative systematic internet search using key terms like “cannabis,” “THC,” and “anxiety” among other terms to attempt to synthesize the relatively limited data on the association between anxiety and cannabis. While the authors fail to give specifics on inclusionary criteria and specific methodologies of the studies included, it is noted that all studies published since 2008 written in the English language were identified, suggesting that all papers based on the search terms were considered (Crippa et al., 2009). It is important to note that since Crippa et al. acts as a literature review, the studies examined demonstrate a variety of methodologies and approaches to their research. This suggests that while the data is valuable, the findings from the studies may vary depending on how the authors approached their respective studies, including how they assessed cannabis use (frequency, dosage, etc.). That being said,

Crippa et al. found that cannabis could cause acute and short episodes of anxiety, like a panic attack in inconsistent users compared to habitual users. Additionally, cannabis that is taken in high doses has the potential to cause fear and anxiety at intense levels. While the findings suggest that anxiety levels are dose-dependent, anxiety levels also seem to scale with the frequency of cannabis use, as the reported levels of anxiety were higher among frequent cannabis users than non-users (Crippa et al., 2009; Hanna et al., 2017). Those who find themselves dependent on cannabis also see higher levels of anxiety, along with the severity of symptoms seeing higher levels the more one uses cannabis (Crippa et al., 2009; van der Pol et al., 2014).

As suggested by the findings from Crippa et al. (2009), the distinction between inconsistent and habitual users highlights the importance of tolerance in cannabis usage. Inconsistent users may be more at risk of anxiety-inducing effects because they have not yet developed tolerance to the psychoactive effects of THC. However, this suggestion that habitual users may not experience anxiety-inducing effects does not mean that other cannabis-related issues, like dependence, cognitive impairment, and interference with daily functioning, cannot happen (Lichenstein, 2022; Zvolensky et al., 2008). The dose-dependent response relationship between cannabis and anxiety identified in this study provides valuable insight in understanding the role of cannabis in anxiety development. The finding that higher doses are more likely to cause anxiety suggests that those who self-medicate with cannabis may make symptoms worse if they increase their consumption in response to developed tolerance or if their symptoms are not immediately relieved (Crippa et al., 2009; Lowe et al., 2019). The finding that the frequency of cannabis use affects anxiety also suggests that regular cannabis use may lead to a cycle where users experience increased anxiety when not using cannabis, leading them to use more frequently to avoid other possible anxiety-inducing effects, like withdrawal-related anxiety (Bahji et al.,

2020). This cycle can contribute to the development of problematic cannabis use and make it more difficult for users to discontinue use even when they recognize that it may be facilitating or contributing to anxiety issues (Crippa et al., 2009).

A study by Thiessen and Schütz (2024) further examined the potential relationship between cannabis and anxiety. The study examined the relationship between cannabis and related factors (i.e., frequency of use, age of first use, and mental health outcomes) by assessing participants at a treatment center for psychiatric patients who have comorbid substance use disorders, and where participants had to be in treatment for at least one month and stable enough to be able to participate. To assess the participants' mental health in relation to cannabis use, the researchers used the Symptom Checklist-90-Revised (SCL-90-R). The SCL-90-R is a 90-item questionnaire that is used to assess mental health disorders and psychological distress (Thiessen & Schütz, 2024). This questionnaire is a validated tool and was used to assess depression, anxiety, and psychosis in the selected population. The study found associations between self-reported anxiety symptoms and cannabis use, which, compared to similar literature, is consistent with previous findings (Crippa et al., 2009; Kedzior & Laeber, 2014; Thiessen & Schütz, 2024). Like the studies by Kedzior and Laeber (2014) and Crippa et al. (2009), positive associations were found between cannabis use and worsening mental health status within Thiessen and Schütz's (2024) study. The use of the SCL-90-R in this study provides a standardized measurement of psychological distress that allows for monitoring and screening of clients to provide validated indicators of anxiety (Smits et al., 2015). With that in mind, in relation to Kedzior and Laeber and Crippa et al., the consistency of findings across studies using different methodologies and assessment tools provides more concrete evidence for an association between cannabis use and increased anxiety symptoms.

The treatment center setting of this study is helpful in understanding the impact of cannabis on treatment outcomes for depression and anxiety. The participants that took part in this study were already engaged in mental health treatment, which suggests that cannabis use may interfere with therapeutic progress and treatment outcomes because of higher self-reported anxiety and continued cannabis use (Bedard-Gilligan et al., 2018). It may also suggest that individuals with both cannabis use and mental health disorders may require unique interventions that incorporate approaches to target the disorder while making room for slow or lack of progress due to confounding factors, such as negative side effects of using cannabis, like reduced motivation (Buckner et al., 2021; Pacheco-Colón et al., 2018). Additionally, including the frequency of use and the age of first use as variables in this study addresses the patterns of cannabis use in relation to mental health outcomes. Earlier age of cannabis use initiation and more frequent use were both associated with worse mental health outcomes, which suggests that the timing and frequency of cannabis use may play a role in determining the risks in using cannabis pertaining to anxiety (Rup et al., 2022; Thiessen & Schütz, 2024).

Anxiolytic Potential of Cannabis

Despite the evidence for cannabis-induced anxiety, there is also research supporting the potential of cannabis to act as an anxiolytic, particularly relating to specific components of the plant. While much of the research suggests the idea that cannabis overall is harmful to anxiety symptom development (Crippa et al., 2009; Kedzior & Laeber, 2014; Thiessen & Schütz, 2024), some users may turn to cannabis as an anxiolytic, as up to 60% of clients who are seeking treatment for anxiety found that symptoms of anxiety persist after taking pharmaceuticals (Turna et al., 2017). A gap between treatment and anxiety symptom alleviation creates an opportunity and motivation for people to experiment with self-medication. In Canada and the United States,

anxiety ranked in the top five conditions for which medical cannabis is prescribed, helping alleviate other symptoms like stress and promoting relaxation (Turna et al., 2017).

Turna et al. (2017) completed a comprehensive meta-review of cannabis compounds and their relation to psychiatric conditions like anxiety and depression. The study consulted databases like PubMed, MEDLINE, and PsychINFO using search terms “cannabis,” “THC,” “cannabidiol,” “endocannabinoid,” “anxiety,” and “depression.” The authors acknowledge that due to the limited amount of data concerning cannabis and its therapeutic applications, all data from published articles were included. However, Turna et al. fail to distinguish the methodologies used by the articles in their meta-analysis. While the data is important to consider, it is also important to note that the included studies vary in approaches, and while the approaches are not explored, this has potential influence over the findings included in their analysis. Concerning their findings, one component of cannabis, CBD, was found to demonstrate consistent anxiolytic effects (Blessing et al., 2015; Turna et al., 2017; Wright et al., 2020). CBD has been effectively shown to have similar anxiolytic effects as isapirone, which is a receptor partial agonist. This finding means that CBD can be compared to a drug that can block and stimulate a receptor, which can act as an anxiolytic (Turna et al., 2017). In one study, when participants were asked about their levels of anxiety 90-minutes post administration of CBD, levels were reported to be lower overall (Turna et al., 2017).

The comparison between CBD and isapirone is important because isapirone is a pharmaceutical compound that has been studied for anxiety treatment. The fact that CBD shows similar effects suggests that it may have legitimate therapeutic potential for anxiety management and treatment (Blessing et al., 2015; Turna et al., 2017). Although, it is also important to note that research on CBD is still novel and in early stages, especially when compared to

pharmaceutical treatment (Wright et al., 2020). Similar to the findings from Turna et al. (2017), Crippa et al. (2004) investigated the role of CBD in mediating anxiety through neuroimage scans of the brain. One group of participants was given a placebo capsule, while other participants were given 400 mg of CBD. The results were consistent with findings from other studies, demonstrating the therapeutic potential of CBD in reducing activity in areas in the brain responsible for anxiety, like the amygdala and hippocampus, compared to the placebo-controlled group (Crippa et al., 2004). Therefore, combining the similar effects of CBD as isapirone and the anxiolytic effect through action on limbic and paralimbic areas of the brain, the results are promising in understanding the potential for cannabis to act as a benefit to treatment outcomes for anxiety (Crippa et al., 2004; Turna et al., 2017).

The findings from the previous studies suggest that acknowledging the differences between CBD and THC are important to understand when considering the potential of cannabis for therapeutic applicability (Crippa et al., 2004; Turna et al., 2017). While cannabis itself contains THC and CBD compounds together, the ratio of CBD and THC varies between different strains and products of cannabis, which can greatly impact the effect when consuming (Pennypacker et al., 2022). When using cannabis as a potential pathway for treatment, the emphasis should be on higher CBD and lower THC products for treating anxiety because THC may exacerbate anxiety symptoms while CBD may provide relief and potentially block cannabinoid receptors that are activated by THC (Corroon & Phillips, 2018; Lichenstein, 2022). CBD does not bind to the same receptors as THC and does not produce intoxication (Kicman & Toczek, 2020). It instead appears to interact with the neurotransmission systems involved in anxiety, potentially offering therapeutic benefits without the psychoactive effects of THC (Crippa et al., 2009; Kedzior & Laeber, 2014; Melas et al., 2021; Thiessen & Schütz, 2024).

The literature reveals that the relationship between cannabis and anxiety is difficult to understand and dependent on several factors, including dosage, frequency of use, and the cannabinoid (THC vs. CBD) consumed (Blessing et al., 2015; Thiessen & Schütz, 2024; Turna et al., 2017; Wright et al., 2020). Particularly noteworthy for the consideration of cannabis as an anxiolytic is the echoing of the self-medication hypothesis. Framing cannabis as an anxiolytic suggests that users who turn to cannabis as a method of relief may be able to do so without complications associated with THC, potentially acting as a legitimate resource for self-medication despite the negative effects of THC (Corroon & Phillips, 2018; Crippa et al., 2009, Kedzior & Laeber, 2014; Lichenstein, 2022; Thiessen & Schütz, 2024), According to a quantitative meta-analysis by Beletsky et al. (2024), the researchers found that the self-medication hypothesis had a major impact on the relationship between anxiety and cannabis and was generally the most apparent reason why many individuals suffering from anxiety resorted to using cannabis. This finding suggests that while THC-dominant strains may not be therapeutically beneficial, engaging in discussion about THC and CBD-dominant strains with clients in treatment for anxiety may help them make more informed choices regarding their choice of cannabinoid-dominant cannabis.

This section is critical for clinicians to understand as it highlights the complex relationship between cannabis and anxiety that must be navigated when working with cannabis-using clients who may be using to manage anxiety symptoms. Understanding the difference between cannabinoids and the therapeutic potential of CBD provides clinicians the tools to help clients understand how their choice of cannabis might be impacting their anxiety symptoms despite the perceived temporary relief.

Section C: The Relationship Between Cannabis and Depression

The relationship between cannabis use and depression presents an equally difficult pattern to interpret. Commonly found within the articles and studies on cannabis and its connection to mental health treatment outcomes is a gap in knowledge in the connection between the two, like whether cannabis may lead to mental health disorders like depression (Churchill et al., 2025). Additionally, there are inconsistencies in the literature on the influential severity that cannabis use has on mental health (Troup et al., 2016). Contextual variability of depression symptoms is a factor in these inconsistencies. Some people may use cannabis more heavily and consistently during periods of increased depression symptoms, while others may find that cannabis use worsens their depression during certain circumstances (Murkar et al., 2022). Comorbidity is also common amongst individuals experiencing depression, including anxiety disorders. Cannabis use may affect these comorbid conditions differently than depression itself, and the interactions between cannabis and multiple mental health conditions are not well understood. This complexity makes it difficult to isolate the cannabis-specific effects on depression from its effects on comorbid conditions (Hasin & Walsh, 2021; Smolkina et al., 2017).

Cannabis-Induced Depression

Studies generally agree that major depressive disorder (MDD) and cannabis use disorder (CUD) are comorbid, presenting themselves together more frequently than by chance (Smolkina et al., 2017). According to the World Health Organization (2025), MDD is the leading cause of disability in the world, and cannabis is one of the most commonly used illicit drugs in the world (Kuhns et al., 2022). To help understand the relationship between cannabis and depression,

Smolkina et al. (2017) took a twin model approach investigating this potential comorbidity through the lens of the 13-comorbidity model developed by Neale and Kendler (1995).

Smolkina et al. (2017) demonstrate a strong methodological approach for examining the relationship between cannabis use and depression. By comparing identical twins who share the same genetics but may have different cannabis use patterns, the researchers were able to better control for factors relating to genetics that might influence both cannabis use and the risk of depression (Smolkina et al., 2017). Additionally, this design helps address some of the limitations in other studies, where it may be difficult to separate environmental and behavior factors (Johnson et al., 2010). Furthermore, the use of the 13-comorbidity model provides a framework for understanding the different ways that CUD and depression might be related. Using these models of co-morbidity helps the authors move beyond finding a correlation to finding factors that facilitate a better understanding of the nature of the relationship. However, this model of comorbidity was developed in 1995, which could act as a limitation due to the difference in understanding of comorbidity 30 years ago compared to what the literature currently contains.

Smolkina et al.'s (2017) study included 2,410 twins born between 1972 and 1979, with an average age of 32 years old. The twins were interviewed over the telephone using the Structured Assessment of the Genetics of Alcoholism (SSAGA-OZ)—a reliable and valid assessment tool to collect information on patterns of *DSM-IV* symptomology across a range of substance and mental health disorders (Smolkina et al., 2017). The study found, in line with other cross-sectional studies, that depression and cannabis use were dramatically comorbid (Smolkina et al., 2017). Generally, identical twins with CUD were more likely to demonstrate symptoms of depression compared to twins without CUD.

The larger sample size and the use of the SSAGA-OZ contribute to reliable findings. The SSAGA-OZ is a well-established tool that has been used in different studies. While the telephone interview format could be limiting in some capacity, it also allows for comprehensive assessment of a large number of participants across a wide geographic area (Acion et al., 2019). The finding that identical twins with CUD were more likely to have depression symptoms than their sibling without CUD provides some evidence for a causal relationship. Because identical twins share the same genetic predisposition to both CUD and depression, differences in depression symptoms between twins are more likely to be attributed to environmental factors, including cannabis use, than genetic makeup (Smolkina et al., 2017; Vink et al., 2007). Out of the 13 co-morbidity models, the random multiformity model of CUD and depression and the model that CUD causes depression best explain the relationship between cannabis and depression. The random multiformity model assumes that once an individual has passed the threshold to develop CUD, then the risk of developing symptoms of depression has increased (Smolkina et al., 2017). With the CUD causing depression model of comorbidity, the assumption is that the liability of developing depression rests on cannabis usage, and the risk increases continuously as cannabis use occurs and CUD increases (Bonn-Miller et al., 2014; Pacek et al., 2020; Smolkina et al., 2017).

The two best-fitting models provide insight into the nature of the cannabis and depression relationship. The random multiformity model suggests a threshold effect where reaching a certain level of CUD suddenly increases depression risk (Kuhns et al., 2022; Smolkina et al., 2017). This model implies that there may be a point in cannabis use where mental health consequences are more likely to occur. This threshold could have an important implication for

prevention and early intervention, so it is important to potentially discuss with clients if early intervention is needed.

The causal model suggesting CUD causes depression implies that cannabis use may directly have a role in the development of depressive symptoms (Kuhns et al., 2022; Smolkina et al., 2017). This effect has the potential to occur through various mechanisms and effects of cannabis, including the disruption of neurotransmission, the interference with how human cognition interprets rewards and its processes, or the impairment of cognitive and social functioning (Marmorstein & Iacono, 2011; Navarro et al., 2022; Smolkina et al., 2017). Both models suggest that CUD, rather than occasional cannabis use, is the key factor in developing depression (Kuhns et al., 2022; Smolkina et al., 2017). This distinction is important because it suggests that clients who develop problematic cannabis use patterns, compared to clients who consume cannabis casually, may be more at risk for developing depression. This risk would be important to discuss with clients in order to assess if harm reduction concerning cannabis use is necessary in relation to early intervention.

A comprehensive meta-analysis by Haller (2024) further supports these findings from Smolkina et al. (2017). Haller searched the PubMed database and identified a total of 1,143 studies, 156 of which were included based on the inclusion criteria. Out of the cross-sectional studies, 79% found a positive correlation between cannabis consumption and depression by demonstrating that those with higher levels of depression also had high levels of cannabis consumption (Haller, 2024). For the longitudinal studies, initiating or increasing cannabis consumption was associated with worsening depression symptoms in 81% of studies. Additionally, withdrawal from cannabis was found to be followed by improvement of depression in 55.6% of studies (Haller, 2024). The high percentage (79%) of cross-sectional studies finding

positive correlations is strong evidence for an association between cannabis use and depression (Haller, 2024). In addition, the high percentage (81%) of longitudinal studies finding that cannabis use predicted worsening symptoms of depression provides stronger evidence for a causal relationship, as these studies established that cannabis use was initiated prior to the worsening of depression. This point is consistent among other studies that investigated the relationship between cannabis use and depression (Bonn-Miller et al., 2014; Kuhns et al., 2022; Lev-Ran et al., 2014). Further, the fact that withdrawal from cannabis was associated with improvements in depression symptoms in 55.6% of studies provides even more support for a causal relationship between cannabis use and depression. This pattern suggests that cannabis use may actively contribute to depression symptoms, such that removing cannabis as the external factor to developing depression allows for improvement of symptoms (Haller, 2024; Kuhns et al., 2022).

The Potential Therapeutic Role of CBD in Depression

While there are studies and data that support the idea that cannabis aggravates depression, there is research that also challenges these findings. Cannabis is a complex substance, with various kinds of terpenes, compositions, and forms of consumption. Therefore, studying cannabis is difficult due to how many confounding factors are involved (Haller, 2024). However, one such promising component of cannabis is CBD, as previously discussed, which has gained popularity for having the reputation to “cure” mental health problems (Wieckiewicz et al., 2022). While CBD has been explored for its application in potentially treating anxiety, it is as important to explore its therapeutic potential for treating depression, since the literature is limited on its findings for other potential applications.

CBD is considered to be much more in line with therapeutic benefit to treat depression rather than THC for their antidepressant effect (Haller, 2024). This therapeutic benefit is due to its serotonergic signalling, which can be attributed to antidepressant-like properties (Melas et al., 2021). The complexities of cannabis as a substance are important to consider for its potential therapeutic applications. Cannabis contains over 100 different cannabinoids, terpenes, and other compounds that interact in complex ways to produce the overall desired effect (André et al., 2024). This complexity of cannabis suggests that research on cannabis itself may not accurately reflect the effects of individual compounds like CBD or THC. The serotonergic signalling mechanism mentioned for CBD is important because many traditional antidepressant medications work by interacting with serotonin systems in the brain (Melas et al., 2021). Selective serotonin reuptake inhibitors (SSRIs), which are among the most commonly prescribed antidepressants, increase the serotonin in the brain in synaptic spaces (Chu & Wadhwa, 2023). If CBD works in a similar fashion, it could potentially offer itself as an antidepressant, comparable to what is already established through pharmaceutical treatments (De Gregorio et al., 2019). However, the serotonergic effects of CBD appear to be different from those of antidepressants. Rather than blocking the serotonin reuptake, CBD interacts with serotonin receptors directly, potentially offering a different pathway for therapeutic intervention (Chu & Wadhwa, 2023; Miao et al., 2025). This difference could be beneficial for people who have adverse effects to traditional antidepressants (Chu & Wadhwa, 2023; Miao et al., 2025).

The differences between CBD and THC are extremely important for understanding the potential therapeutic role of cannabis in treating depression. While THC is associated with psychoactive effects of cannabis and has been shown to worsen depression symptoms in some individuals (Bonn-Miller et al., 2014; Haller, 2024; Kuhns et al., 2022), CBD does not produce

intoxication and may have therapeutic benefits (De Gregorio et al., 2019; Kicman & Toczek, 2020). This distinction suggests that CBD-based treatments, and by association, recreational CBD use, could potentially offer benefits without the problematic aspects of recreational THC (Kicman & Toczek, 2020). This difference is important for clinicians to understand in order to explore which cannabinoid-dominant cannabis clients may be using, which can allow for more informed discussion surrounding how their use may impact their treatment progress.

Solowij et al. (2018) studied the potential therapeutic benefits of CBD through daily administration to see if it affected symptoms of depression among anxiety, psychosis, and cognitive performance pertaining to chronic cannabis use. They recruited 20 cannabis users who received daily CBD administration for 10 weeks and were monitored each week face-to-face. Participants were given 200 mg of CBD per day while continuing their near daily use of cannabis. While the research design allows for qualitative data collection, a challenge with this approach is the small number of participants limiting the applicability to a wider population. Additionally, the findings are at risk of desirability bias due to the lack of a placebo group (Solowij et al., 2018).

The amount of cannabis consumed varied among the participants. The results of this study showed that there were no side effects with CBD, and overall, it was well tolerated by the participants. The participants demonstrated a dramatic reduction in depressive symptoms and improved cognitive ability from baseline to post-treatment (Solowij et al., 2018). Additionally, two significant findings emerged from this study: cannabis users experienced less of a euphoric effect from cannabis, and CBD had more of an effect on users who were dependent on cannabis compared to nondependent users (Solowij et al., 2018).

The lack of side effects observed in Solowij et al.'s (2018) study has importance for clinical applications. Psychiatric medications can have side effects that can limit their potential and efficiency with some individuals (Cascade et al., 2009). The fact that CBD was well tolerated, demonstrated by Solowij et al. (2018), suggests that it could be a viable alternative treatment for those who would prefer to avoid pharmaceutical medications. The improvement in cognitive ability is useful for depression treatment, as cognitive symptoms such as difficulty concentrating, memory problems, and general dysfunction are common in depression and can impact the quality of life and daily functioning of individuals (Mayo Clinic, 2022). If CBD can improve cognitive symptoms while also addressing mood symptoms, it could be extremely beneficial over traditional antidepressants that can actually worsen cognitive function in some cases (Popovic et al., 2015).

The finding that CBD reduced the euphoric effects of cannabis in Solowij et al.'s (2018) study is also significant for several reasons. First, it suggests that CBD may help individuals reduce their cannabis use by making it less rewarding (Solowij et al., 2018). Second, it suggests that CBD can interact with the effects of THC, which support theories about the interaction between cannabis compounds (Corroon & Phillips, 2018; Turna et al., 2017). Third, it suggests that CBD might be useful as a treatment for CUD itself. These findings are significant in that it demonstrates the potential therapeutic uses not only for depression but also for reducing potential harm through disincentivizing the chronic use of cannabis while in treatment should a client agree to do so (Solowij et al., 2018).

Solowij et al. (2018) also found that CBD had an effect on users who were dependent on cannabis compared to nondependent users. This finding suggests that the potential therapeutic benefits of CBD may be most pronounced in individuals with a more severe case of CUD, or

who may simply be frequent users of cannabis in general. This finding could help identify which individuals are most likely to benefit from CBD and suggests that CBD might be useful as part of treatment for CUD (Solowij et al., 2018). Engaging in conversation surrounding the compound-dominant cannabis consumed by clients would be beneficial for understanding if a client could reduce the potential adverse effects of THC versus the effects of CBD.

A similar study by Wieckiewicz et al. (2022) attempted to further investigate the therapeutic potential of CBD. Rather than qualitatively investigating the role of CBD with weekly monitoring and face-to-face interviews like that of Solowij et al. (2018), the authors performed an internet-based study that recruited 90 participants through social media, tasking participants to self-report the use of CBD to manage depressive symptoms (Wieckiewicz et al., 2022). The questionnaire involved sociodemographic questions, frequency and dosage of CBD consumption, CBD-influenced effects after consumption, and depressive symptoms in adherence to the Hospital Anxiety and Depression Scale (HADS; Wieckiewicz et al., 2022). Similar to the findings in previous studies, CBD was found to be helpful in alleviating symptoms of depression (Corroon & Phillips, 2018; Solowij et al., 2018; Wieckiewicz et al., 2022). Out of all the respondents, 86% revealed that CBD helped in managing depressive symptoms, suggesting that self-medicating with CBD is a potentially viable avenue for those who need at-home, immediate remedies to help manage their symptoms (Wieckiewicz et al., 2022). However, self-medicating with CBD lacks supervision and clinical guidance, and as mentioned previously, is considered dangerous due to the lack of studies supporting it as an at-home remedy and clinical use (Asselin et al., 2022; Wright et al., 2020).

Quality of Life Impacts and Bidirectional Relationships

The impact cannabis can have on depression symptoms is also reflected in its impact on overall quality of life (QoL), which includes social life, relationships, and work/school (Rup et al., 2022). Heavy cannabis usage, as well as individuals diagnosed with CUD, are typically associated with greater self-reports of lower QoL scores. On the other hand, abstinence from cannabis and lower frequency of usage are associated with higher QoL scores (Rup et al., 2022). The findings from Rup et al. (2022) indicate that heavy cannabis users and individuals with CUD have lower overall QoL (Goldenberg et al., 2017). Combining these findings with findings from previous studies concerning CBD (Haller, 2024; Solowij et al., 2018; Wieckiewicz et al., 2022), this distinction is important because it identifies areas where cannabis could be affecting clients where it might not be as clear if they were to reflect on their own.

Additionally, cessation of use may not immediately return their QoL to the level of non-cannabis users (Goldenberg et al., 2017). This finding, combined with the association between heavy cannabis use and lower QoL scores, suggests that while cannabis may provide temporary relief, it may interfere with the development of healthier coping strategies and social connections that can contribute to long-term well-being (Colder et al., 2019; Goldenberg et al., 2017; Rup et al., 2022). Heavy cannabis use may also interfere with educational and occupational functioning, leading to reduced opportunities and achievement over time (Thompson et al., 2019). The bidirectional nature of the relationship between cannabis use and QoL creates challenges for both research and treatment outcomes. Poor QoL may motivate to use cannabis as a coping mechanism and cannabis use may then further deteriorate QoL, creating a cycle that can be difficult to break (Colder et al., 2019). Understanding and discussing this cycle is important for

developing effective interventions like the development of healthy coping mechanisms that can target both cannabis use and factors that can contribute to lower QoL.

The finding that cessation of use did not immediately return low QoL scores to the level of non-cannabis users reinforces the importance of finding replacement coping mechanisms in treating depression and anxiety (Goldenberg et al., 2017). By maintaining healthy coping mechanisms rather than cannabis use, users and clinicians can discuss if there are noticeable positive impacts from the development of alternative coping methods and implement more of what is acting as a benefit to their treatment progress and higher QoL.

Cannabis use and the onset of depression or depressive symptoms may have a bidirectional relationship (Kuhns et al., 2022; Langlois et al., 2021). Under the lens of self-medication, this relationship begs the question of whether those with depression choose to engage in cannabis use to medicate, or if cannabis use acts as a precursor to depression or depressive symptoms that then leads to more cannabis use (Kuhns et al., 2022; Langlois et al., 2021; Wallis et al., 2022). One study found that individuals who were nonusers of cannabis and had past-year MDD were found to be at high risk of initiating cannabis use (Kuhns et al., 2022). Additionally, based on the self-reported reasons for cannabis use, researchers found that 34% of users use it as a way to deal with depression (Kuhns et al., 2022; Wallis et al., 2022). The finding that individuals with past year MDD were at high risk of initiating cannabis use provides strong evidence for depression as a risk factor for cannabis use initiation (Kuhns et al., 2022). This pattern also supports the self-medication hypothesis by suggesting that individuals experiencing symptoms of depression may seek relief through the initiation of cannabis use (Kuhns et al., 2022; Langlois et al., 2021; Wallis et al., 2022.) However, this initial use may then lead to

patterns of use that can eventually worsen depression symptoms, creating the cycle previously mentioned (Colder et al., 2019).

The bidirectional relationship also has an important implication for treatment planning. Individuals displaying symptoms of depression and problematic cannabis use may need integrated treatment approaches so that both are treated simultaneously, as treating only one presenting issue at a time while ignoring the other is less effective and could potentially enable and increase relapse (Sato, 2022). The patterns of cannabis use and depression symptoms may also vary between individuals, where some people may experience depression first and initiate cannabis use later, while others may be using cannabis recreationally and later develop depression, depicting a bidirectional relationship that varies between cannabis users (Kuhns et al., 2022; Wallis et al., 2022). Understanding unique differences in the cannabis and depression relationship is crucial for developing treatment approaches. Factors such as age of first use, genetics, social support, and current treatments may all influence how cannabis use and depression interact with each other (Chu & Wadhwa, 2023; Kuhns et al., 2022; Langlois et al., 2021; Miao et al., 2025).

Section D: Implications for Treatment Outcomes

The literature reveals important suggestions for mental health treatment outcomes when clients use cannabis consistently while in therapy for depression and anxiety. Since there is a high likelihood that a large portion of clients who are in therapy might use cannabis regularly (Feingold, 2020), it is important for clinicians to understand how cannabis use may affect therapeutic progress. The prevalence of cannabis use highlights the importance of screening for cannabis use in therapeutic spaces (Stuart-Maver, 2020). Many clients may not, on their own, disclose their cannabis use, especially if they are concerned about judgment from clinicians

(Feingold, 2020). Screening can help identify cannabis use patterns and allow for more individually tailored treatment planning that incorporates multiple approaches (Stuart-Maver, 2020). The interaction between cannabis use and different types of therapy may vary as well due to the effects that cannabis can have on the brain. Cognitive-behavioral therapy (CBT), for example, relies heavily on learning new thinking patterns and behavioral strategies, and it may be especially vulnerable to interference from cannabis due to its effects on memory and cognitive function (American Psychological Association, 2017; Cohen & Weinstein, 2018).

Interference With Therapeutic Progress and Outcomes

Previous studies suggest that frequent cannabis use may interfere with therapeutic outcomes for both anxiety and depression treatment. Since long-term cannabis use can facilitate anxiety symptom development (Crippa et al., 2009; Kedzior & Laeber, 2014; Lowe et al., 2024, Thiessen & Schütz, 2024; Xue et al., 2021), there is definite potential for cannabis to interfere with therapeutic outcomes for anxiety and depression. Similarly, if a client perceives that cannabis use is low risk, clients in treatment for depression may find temporary relief when using cannabis; however, the more one uses cannabis, the more likely they are to develop harmful patterns of cannabis use, which in turn can promote harmful, depressive symptoms (Kuhns et al., 2022; Langlois et al., 2021; Wallis et al., 2022).

The interference with therapeutic progress may occur through several mechanisms. Pacheco-Colón et al. (2018) conducted a meta-analysis including 22 studies that found that cannabis use may reduce motivation to engage in therapy or practice therapeutic skills outside of sessions due to changes in reward sensitivity in the brain associated with cannabis use. Furthermore, the temporary relief provided by cannabis may reduce the perceived need for developing alternative coping strategies or addressing the root issues pertaining to depression

and anxiety (Lowe et al., 2019). Additionally, cannabis use may impair cognitive functions necessary for therapeutic change, such as memory, attention, and executive functioning (Thames et al., 2014). The idea that self-medicating with cannabis may develop a sense of non-urgency in forming alternative coping methods is concerning, given that therapeutic motivation for change and skill building is important in the context of treatment for depression and anxiety. Individuals who rely on cannabis for depression or anxiety symptom management may be less motivated to engage in therapeutic work (Pacheco-Colón et al., 2018). In addition to changes in the reward system of the brain, the immediate relief provided by consuming cannabis could create a preference for cannabis as a coping strategy over longer-term, healthier strategies that require more effort but show greater benefits (Lowe et al., 2019; Pacheco-Colón et al., 2018).

Frequent cannabis use may also interfere with the development of distress tolerance skills, which are important for managing difficult emotional situations without resorting to an immediate escape and for enduring negative physical or psychological states (Morris et al., 2024). If a cannabis user is using the substance to avoid uncomfortable emotions, they may not develop the ability to tolerate and work through these emotions in a healthier way (Zvolensky et al., 2009). This pattern may hinder therapeutic progress and would be worth continually checking in on cannabis usage with clients to assess if a harmful pattern is developing but also promoting depressive symptoms. The literature consistently shows that while cannabis may provide temporary relief from symptoms, long-term use is associated with worsening of both anxiety and depression symptoms (Kedzior & Laeber, 2014; Kuhns et al., 2022; Langlois et al., 2021; Lowe et al., 2024; Wallis et al., 2022).

Conclusion

This literature review intended to examine and dissect a complicated relationship between cannabis use and mental health treatment outcomes for depression and anxiety. While the literature uncovered the potential of CBD as a component of cannabis that could be applied therapeutically, the dominant narrative suggests that recreational use of cannabis, especially when THC-dominant, is more likely to hurt the therapeutic process than act beneficially. The self-medication hypothesis is a central theme surrounding why cannabis use is prevalent among those who use it to cope, and the need to find alternative coping methods is of importance to maintain therapeutic progress. If the cycle of cannabis use as a means of self-medication is left undiscussed and untreated, the potential to create a detrimental cycle is high, and the potential to worsen symptoms of depression and anxiety can get worse over time.

Understanding how cannabis impacts depression and anxiety treatment enables clinicians to engage in effective discussions with cannabis-using clients. Clinicians can approach conversations about cannabis use, specifically regarding if cannabis benefits or harms the therapeutic process for the client, with data to support recommendations and interventions. Clinicians can also provide clients psychoeducation that incorporates how cannabis can positively and negatively impact their treatment outcomes specific to their presenting concerns (i.e., depression and anxiety), the complex relationship between cannabis and the brain, and how the self-medication hypothesis might influence their patterns of cannabis use. This approach to psychoeducation would allow for a thorough discussion on how cannabis might affect treatment outcomes for the client. Helping the client understand this complex relationship might promote a positive space to discuss cannabis use openly and judgment free. By creating a safe space to

discuss cannabis use, clinicians can work with clients to assess whether modifications to cannabis use patterns, or goals pertaining to cannabis use, is necessary.

Chapter Three: Discussion and Applied Practices

This capstone project is intended to investigate the role of cannabis in depression and anxiety treatment, specifically whether cannabis has a role in increasing or decreasing symptoms, and if it has any influence over treatment outcomes. Additionally, the capstone acts as a guide to develop competency for clinicians working with clients who may be using cannabis while in treatment for depression and anxiety. Therefore, the question was asked, what is the impact of cannabis on mental health treatment for depression and anxiety? Entering the research project with this question in mind was crucial to find data and synthesize the findings to understand thoroughly what kind of effect cannabis has on depression and anxiety and on treatment outcomes.

This topic was pursued because of how rampant cannabis use is with young adults and the seemingly lack of studies behind the impact long-term cannabis use can have on mental health. Cannabis has been used medicinally since 2000 BC (Crocq, 2020); however, it has only been legalized in Canada recreationally since 2018, meaning the accessibility of cannabis and its availability for use in studies is quite young, and there is need for more research in this area as part of a harm reduction framework for clinicians to understand how best to support clients efficiently and safely. Few studies attempt to discover and explore the relationship between depression, anxiety, and cannabis. Therefore, this topic choice was an opportunity to synthesize what little information is present in the literature concerning cannabis and its relationship to mental health and attempt to fill the knowledge gap.

Discussion

Methodological Considerations

Of importance, research on cannabis faces several methodological limitations and challenges. Many studies rely on self-reported data to investigate cannabis consumption, which can possibly skew data by way of recall and desirability bias (Haller, 2024). Additionally, the legal status of cannabis varies by country and state, which affects research validity, as cannabis users may be reluctant to discuss their cannabis use in places where the substance is illegal (Crippa et al., 2009). Furthermore, cannabis presents itself in many different strains and strengths, meaning that from one study to another, the effect of cannabis may not be the same, and results may be inconsistent (Troup et al., 2016). These methodological issues can create limitations in drawing conclusions about the effects of cannabis on mental health. Modern cannabis has led to higher THC concentrations, while CBD has remained the same in recreational cannabis for the most part (Freeman et al., 2021). This difference in the presentation of cannabinoids could mean that research conducted on older cannabis may not accurately reflect the effects of cannabis products available today.

Another prominent methodological challenge is the lack of standardizing of dosage in cannabis studies (Jugl et al., 2021). Cannabis products vary in their potency and delivery method. A person smoking cannabis may experience very different effects than someone who consumes edibles, even if it has the same amount of THC and CBD. This variability makes it difficult to establish clear dose-dependent responses and makes it difficult to understand what would be considered the right amount of cannabis for therapeutic dosing, as well as which cannabinoids. Additionally, depression and anxiety are often co-morbid with other mental health conditions. Participants in studies may have different presentations of symptoms and their severity as well as

different treatment histories (i.e., therapeutic approaches and methods) and comorbid conditions that can influence how they respond to using cannabis (Kozak et al., 2021).

Synthesis of Findings: Key Takeaways

This section acts as a synthesis of findings throughout the literature review. Over the course of the second chapter, cannabis and its impact on depression and anxiety treatment outcomes were presented through various mechanisms, ranging from factors that moderate the idea of cannabis-inducing depression like the self-medication hypothesis (Beletsky et al., 2024; Temple et al., 2014; Wallis et al., 2022), to how CBD can apply clinically to treating anxiety and depression (Blessing et al., 2015; Solowij et al., 2018; Turna et al., 2017; Wright et al., 2020).

To help synthesize these findings, key takeaways will be discussed in this section. These takeaways may act as a point of discussion with clients about cannabis use and how it can affect not only their mental well-being but their therapeutic progress as well (Feingold, 2020; Stuart-Maver, 2020). Based on findings from the literature review on how cannabis affects treatment outcomes for anxiety and the disorder itself, cannabis can increase anxiety symptoms, potentially developing clinically relevant anxiety disorders later on (Kedzior & Laeber, 2014; Lowe et al., 2024; Xue et al., 2021). Populations with anxiety symptoms were found to be frequent users of cannabis, with the assumption that those who use cannabis frequently may use it self-medicate, and this use can exacerbate their anxiety symptoms (Beletsky et al., 2024; Crippa et al., 2009; Kedzior & Laeber, 2014).

Additionally, findings indicate that cannabis can cause intense feelings of anxiety, like panic attacks, that can become worse and occur consistently with prolonged use of cannabis, possibly worsening anxiety symptoms (Crippa et al., 2009; Kedzior & Laeber, 2014). It was also found that anxiety levels seemingly scaled with the frequency of use, suggesting that those who

find themselves depending on cannabis may see higher levels of anxiety symptoms (Crippa et al., 2009). Overall, it is suggested that long-term cannabis use can facilitate anxiety symptom development, which means there is the potential for cannabis use to interfere with therapeutic outcomes and progress for anxiety treatment (Crippa et al., 2009; Kedzior & Laeber, 2014; Thiessen & Schütz, 2024).

However, there is evidence that specific components of cannabis, specifically CBD, may apply therapeutically for those in treatment for anxiety. CBD has been found to demonstrate anxiolytic behavior (Blessing et al., 2015; Turna et al., 2017; Wright et al., 2020). CBD shows potential by acting similarly to isapirone, which acts as a receptor partial agonist, and this finding indicates that CBD is similar to a pharmaceutical drug that can block and stimulate a receptor, exhibiting anxiolytic effects (Turna et al., 2017). CBD can also reduce activity in areas in the brain responsible for anxiety, like the amygdala and hippocampus, suggesting that CBD exhibits anxiolytic effects (Crippa et al., 2004).

Depression and cannabis have a complex relationship. Smolkina et al. (2017) investigated the relationship between depression and cannabis use through a twin study and found that identical twins with CUD were more likely to demonstrate depression symptoms compared to twins without CUD, suggesting that CUD and depression are likely related and exhibit mutual influence (Kuhns et al., 2022). Based on the models of co-morbidity by Neale and Kendler (1995), two models of comorbidity that explain the relationship between depression and cannabis are the random multiformity of CUD and the CUD causes depression model. The random multiformity model assumes that once an individual has developed CUD, the risk of developing depression increases (Smolkina et al., 2017). The CUD causing depression model assumes the liability of developing depression rests on intense cannabis use (Bonn-Miller et al., 2014; Pacek

et al., 2020; Smolkina et al., 2017). A meta-analysis by Haller (2024) concluded similar findings, where 79% of studies found a positive association between cannabis and depression, including worsening of depression symptoms the more individuals consumed cannabis. Similar to the influence of cannabis on anxiety symptoms and treatment outcomes, CBD was found to apply therapeutically to treating depression. CBD has been found to possess serotonergic signalling effects, which act similarly to anti-depressants (Haller, 2024; Melas et al., 2021). Additionally, Solowij et al. (2018) and Wieckiewicz et al. (2022) found positive associations in the reduction of depressive symptoms after consuming CBD. These results are promising for therapeutic applications of CBD for treating anxiety and depression. However, CBD research is still quite young and caution must always be exercised due to the lack of supervision and clinical guidance of CBD consumption (Asselin et al., 2022; Lowe et al., 2019).

The findings concerning cannabis and its relationship with depression and anxiety suggest a bidirectional relationship (Kuhns et al., 2022; Langlois et al., 2021). Whether depression acts as a precursor to the development of depression or vice versa remains unclear; however, the finding that individuals with past year MDD were found to be at high risk of using cannabis suggests that depression acts as a risk factor for cannabis use (Kuhns et al., 2022; Langlois et al., 2021; Wallis et al., 2022). Generally, it is suggested throughout the literature that cannabis has an impact on depression and anxiety treatment outcomes. The meta-analysis by Pacheco-Colón et al. (2018) found that cannabis may reduce motivation by changing the reward system in the brain, and this finding suggests that cannabis use may affect the motivation for activities related to therapeutic work. The finding that cannabis may affect more than just the symptoms of depression and anxiety, like QoL, is especially concerning due to the potential lack

of motivation to find replacement coping mechanisms if a client perceives cannabis as a low-risk relief method (Lowe et al., 2019; Rup et al., 2022).

Applied Practices

Applying an Integrated Approach

Studies note that further research is needed to examine and investigate how cannabis affects therapeutic outcomes for depression and anxiety. Cannabis research is quite limited, and there are several methodological challenges. Most studies that focus on the effect of cannabis rely on self-reported data (Haller, 2024). Self-reported data in itself is challenging especially concerning cannabis use as participants are at risk of recall and desirability bias (Haller, 2024). Additionally, cannabis itself is a complex plant that can produce different effects in different individuals, which could potentially facilitate inconsistent results (Freeman et al., 2021; Troup et al., 2016) With these challenges in mind, a framework that would be effective for clinicians working with clients who may use cannabis while in treatment for depression and anxiety would incorporate a focus of a combination of reducing the negative impacts of self-medicating and an integrated approach to target cannabis use and the presentation of depression and anxiety (Feingold, 2020; Sato, 2022; Stuart-Maver, 2020). By doing so, not only could clinicians educate clients and set consistent goals with clients on cannabis use, but they could also focus on specific harm reduction strategies and interventions to treat anxiety and depression.

Distinguishing Between Problematic and Non-Problematic Use

Before applying any integrated framework for treatment, it is imperative to distinguish between problematic and non-problematic cannabis use in order to understand whether such an approach is effective. Turner et al. (2014) attempted to operationalize the difference between problematic and non-problematic use in a clinical setting to treat problematic use effectively.

Problematic cannabis use presents itself with many risks and adverse negative effects, like addiction, respiratory and cardiac complications, and cognitive effects (W. Hall et al., 2019; Turner et al., 2014). These potential harms echo the importance of screening clients about cannabis use and monitoring cannabis usage, even if the client reports their use as occasional and non-problematic (Feingold, 2020; Stuart-Maver, 2020; Turner et al., 2014).

It is imperative that clinicians assess their clients on whether they fall into the high-risk category of cannabis-related harms, including young adults, those who use alcohol, those who show poor functioning academically or at work, and those who suffer from anxiety and depression, based on the suggestion of the self-medication hypothesis (Beletsky et al., 2024, Temple et al., 2014, Turner et al., 2014). To distinguish between problematic use and non-problematic use, clients should be assessed on their quantity and frequency of cannabis consumption. Clients who could be considered problematic users of cannabis may reveal they smoke/vaporize a number of grams in a specific time interval, generally consume daily or near daily, and report daily dysfunction (Turner et al., 2014). Those who use cannabis as a means of coping and as self-medication to manage anxiety and depression may also fall into this category (Beletsky et al., 2024; Temple et al., 2014; Turner et al., 2014).

The Importance of Recognizing Cannabinoid-Dominant Strains

The literature suggests that cannabinoids play a major role in treatment outcomes for depression and anxiety. THC-dominant cannabis appears to worsen depression and anxiety symptoms; meanwhile, CBD-dominant strains are showing promise for potential therapeutic application (Corroon & Phillips, 2018; Solowij et al., 2018; Wieckiewicz et al., 2022). This difference is important, as it suggests that not all cannabis use is equally as problematic for

clients in treatment, and some forms (i.e., CBD) might even provide benefits to the therapeutic process.

The difference in effects of THC and CBD also have a crucial influence over harm reduction approaches in therapeutic work. Instead of encouraging complete abstinence from all cannabis products, clinicians might encourage clients to transition from high-THC products to CBD-dominant products if clients are unwilling or hesitant to discontinue cannabis use entirely (Feingold, 2020; Stuart-Maver, 2020).

Educating clients about cannabinoids and their different effects can facilitate clients to make more informed choices when purchasing their cannabis if they continue to use while in treatment for depression and anxiety. Some clients might not be aware of the differences between THC and CBD; therefore, providing this information may help clients understand why they may experience different effects from different products. The potential therapeutic application of CBD is promising, but further research is needed. The current research is quite limited, and it is still unknown if there are long-term effects of CBD usage and how it can affect long-term outcomes of treatment for depression and anxiety (Wright et al., 2020).

Frequent monitoring of cannabis use patterns throughout treatment can help clinicians identify when cannabis use may be interfering with progress (Stuart-Maver, 2020). Changes in patterns of cannabis use may signal that clients are struggling with the therapy process or are using cannabis to avoid difficult emotions or situations addressed in therapy and should therefore be discussed (Dacosta-Sánchez et al., 2023; Zvolensky et al., 2009).

The assessment of cannabis use should include how a client's use relates to therapeutic goals and daily functioning. The Comprehensive Cannabis Motives Questionnaire (CCMQ) developed by Moffitt et al. (2025) provides a suitable assessment of cannabis use patterns. The

CCMQ is a 41-item questionnaire that assesses the motivation to use cannabis. The questionnaire assesses the following areas of use: food, medicinal, sleep, social, high, conformity, coping, and cognitive enhancement (Moffitt et al., 2025). The CCQM is a valid and reliable assessment to help clinicians and clients gain a thorough understanding of what drives the use of cannabis, allowing for the exposure of areas where patterns of cannabis use may be considered problematic. While the CCQM has been tested on various samples, it is not without its limitations. The CCQM was tested on U.K. and U.S. populations where cannabis is federally illegal. While the assessment can be considered reliable, there is the potential for differing perspectives in Canada due to the difference in legal status. The CCQM would benefit from sampling in Canada to ensure it retains its reliability and validity (Moffitt et al., 2025).

Questioning clients on what triggers their cannabis use and how it may affect their ability to engage in therapeutic discussions or homework can provide important information for treatment planning (Dacosta-Sánchez et al., 2023; Martin-Willett et al., 2024). For example, if a client is engaged in behavioral activation but is choosing to use cannabis to avoid the task, this kind of use would be considered problematic and an interference. Further, having a collaborative discussion with clients about their cannabis use and how it relates to their treatment goals can help clients develop awareness of how their cannabis use may be affecting their progress (Stuart-Maver, 2020). Instead of demanding abstinence from the substance, clinicians can work with clients to identify ways that cannabis use might be interfering with their treatment goals and develop strategies to address those interferences (Stuart-Maver, 2020).

Applying a MET-CBT Approach

If a client is assessed as displaying patterns of problematic cannabis use, Buckner et al. (2021) propose an integrated approach that incorporates CBT and motivational enhanced therapy

(MET). MET is an approach similar to motivational interviewing that specifically focuses on targeting problematic substance use designed to build client motivation, instill hope for a better future, and facilitate cessation of substance use (Miller et al., 1999). The study investigated the utility of a MET-CBT approach in association with integrated cannabis and anxiety reduction treatment (ICART), with the aim to assess its effectiveness in treating problematic cannabis use and anxiety (Buckner et al., 2021). The ICART approach focuses on psychoeducation, replacing problematic coping strategies and managing negative thoughts (Buckner et al., 2021). Given the effect of cannabis on depression and anxiety and its confounding variables (e.g., self-medication hypothesis, CBD effectiveness, cognitive effects, etc.), the findings from this study are assumed to be applicable to treating depression with the added stipulation that clinicians may need to tune their approach to fit individual unique needs.

Buckner et al. (2021) investigated the proposed treatment's effectiveness with 55 participants who met CUD criteria and different psychiatric disorders like anxiety, depression, and PTSD. Over the course of 12 sessions with each session highly organized, the study applied the proposed treatment in an attempt to measure its effectiveness. By measuring cannabis use at a baseline along with psychiatric illness severity, follow-up assessments were issued to test whether the proposed treatment impacted treatment outcomes. Clients responded well to treatment, demonstrating controlled cannabis cravings and skills to manage anxiety and emotional distress (Buckner et al., 2021). These findings suggests that the MET-CBT approach can be used as an integrative approach when working with clients who use cannabis while in treatment for depression and anxiety.

Considering the findings from Buckner et al. (2021) and Turner et al. (2014), the proposed framework should also integrate a harm reduction lens to ensure cannabis users remain

safe if they choose to use while in treatment, especially considering the cycle associated with the self-medication hypothesis (Colder et al., 2019; Lowe et al., 2019; Mojtabai et al., 2012) Working with clients who may be self-medicating with cannabis should start with a focus on strengths, resiliencies, and external resources (Substance Abuse and Mental Health Services Administration [SAMHSA], 2023). This model is taking a strength-based, solution-focused approach that focuses on the needs of the client and capitalizes on their past successes and current strengths. By doing so, it can help emphasize clients' functioning instead of pathologizing and focusing on weaknesses (SAMHSA, 2023). Additionally, focusing on these aspects helps clients develop healthier coping mechanisms, which includes replacing the use of cannabis as a coping mechanism with something functional that promotes emotional tolerance (Lowe et al., 2019; Mojtabai et al., 2012).

Before applying this approach, it is imperative that clinicians assess their own competency. In adherence to Principle II: Responsible Caring in the *Canadian Code of Ethics for Psychologists*, clinicians should only offer services in which they have established competence (Canadian Psychological Association [CPA], 2017). By reflecting on one's competence, a clinician can assess whether they have gained sufficient knowledge in working with such populations. If a clinician decides applying this approach and working with such populations is beyond their competence, they must take immediate action in gaining supervision or consultation to continue to work with the client should the clinician choose to use this approach (CPA, 2017). Continuing competence is essential before and throughout the therapeutic process with clients who may benefit from this approach. Regulated by the College of Alberta Psychologists (2023), clinicians cannot provide service unless competence is established through training and experience. Continuing competence under the context of applying this approach involves

constant consultation with other clinicians who are experts in working with related cases, and it is the ethical duty of the clinician to ensure they continue to seek supervision and training (College of Alberta Psychologists, 2023).

The Importance of the Therapeutic Alliance

It is imperative that clinicians foster a trusting and safe therapeutic alliance. Any client that perceives shame for using cannabis while in treatment for depression and anxiety is less likely to be open to discussing cannabis use and its impacts (Feingold, 2020; Stuart-Maver, 2020). A clinician may use their judgment if therapeutic progress is slow or absent; however, if a client is closed off about their about cannabis use, it would be difficult to ascertain if the stagnation is due to cannabis. Open communication surrounding risks and benefits of cannabis and routinely monitoring if a client is experiencing any negative side effects is important to assess how the client is progressing therapeutically. If the relationship is non-trusting, progress would be very difficult to achieve (Feingold, 2020; Stuart-Maver, 2020). When engaging in discussion around cannabis use with a client, it is important to maintain a balance. While the conversation would be surrounding their symptoms of depression, anxiety, and the use of cannabis while in treatment, clients also have the autonomy to use cannabis, which must be respected (CPA, 2017; Feingold, 2020). Therefore, it is important to focus on establishing a nonjudgmental relationship and conversation surrounding cannabis use and how it can affect not only depression and anxiety symptoms but their mental health as a whole (Ryan et al., 2011).

Treatment Recommendations

Reflecting on the findings from the literature, the integrated framework by Buckner et al. (2021) and the imperative aspects of the clinician and client relationship (Feingold, 2020; Stuart-Maver, 2020), this section explores treatment recommendations that aligns with the approaches

and findings previously discussed. These recommendations incorporate a combination of findings and personal conclusions drawn from the literature that represent how I, as a clinician, would move forward when working with cannabis-using clients who may represent the populations previously discussed.

When working with substance-using clients, fostering a trusting, therapeutic alliance is imperative for clinical progress and may act as one of the most important factors in addressing cannabis use (SAMHSA, 2023). This trust allows a client to feel safe to talk about their use openly and judgment-free, which can enable a clinician to assess the severity of use and how it may be affecting their treatment progress (SAMHSA, 2023).

Additionally, combining the trusting relationship with clinical assessment on cannabis use including frequency, dosage, and cannabinoid-dominant cannabis of choice is important. This assessment should include psychoeducation on how cannabis, specifically the cannabinoids, affects the brain and how it may affect their progress. This conversation should also include a discussion regarding their cannabis use patterns, acting as an assessment of risk-related factors of use. For example, if a client describes their use as only when there is emotional dysfunction, the conversation should take a harm reduction approach and discuss the idea of alternative coping methods to limit the potential for harmful cannabis use patterns to develop, along with other negative effects, based on the self-medication hypothesis (Beletsky et al., 2024; Temple et al., 2014). This process should become routinized to prevent any potential for CUD to develop and severity of depression and anxiety to worsen, and to maintain an open understanding between client and clinician of how cannabis could be interfering with treatment outcomes.

While clinicians should take interest in their client's cannabis use, there is a limit to the scope of influence. Clinicians can discuss the potential negative side effects (or positive effects,

depending on cannabinoid dominant-strains) with clients, though it is ultimately the client's decision whether they use and how frequent, how much, and what type. Therefore, while a clinician can suggest limiting use and provide psychoeducation on making informed choices when purchasing cannabis, suggestions can only go so far, and it is the client who must make the choice. It is the client who chooses whether they want to use or not, especially while in treatment, if they perceive it as therapeutic.

Acknowledgment with the client if it appears that their use is interfering with their progress is important, though a fine line exists between reducing harm and respecting the autonomy of the client (CPA, 2017). Every case is unique, and some clients may depict their use as beneficial to the outcome of treatment. For some clients, CBD might act as a benefit to their symptoms of depression and anxiety. It appears heavy cannabis use patterns interfere with more than they benefit therapeutic progress. Therefore, clinicians might want to incorporate harm reduction strategies throughout the therapeutic process to mitigate possible interference from cannabis use.

As previously discussed, working with such populations is a complex process to navigate given how complicated the relationship can be between depression, anxiety, cannabis use, and treatment outcomes. Therefore, integrating these treatment recommendations into the therapeutic work with clients may provide guidance and direction for clinicians who may find themselves unsure of how to approach such a complex landscape.

Ethical Considerations

While the intent of this proposed framework is to empower clients to reduce cannabis use while also treating anxiety and depression, clients may present themselves with unique needs pertaining to cannabis use. It is imperative that clinicians always consider ethical boundaries and

responsibilities in accordance with the *Canadian Code of Ethics for Psychologists* when working with clients (CPA, 2017).

Respect for Dignity and Cultural Influences

The literature presented in this capstone suggests that cannabis use while in treatment is inherently negative. However, clinicians must consider their role in accordance with Principle I: Respect for the Dignity of Persons and People within the *Canadian Code of Ethics for Psychologists* (CPA, 2017). Respecting cultural influences of cannabis use involves maintaining an awareness of sociocultural and religious influences (Rafei et al., 2023; SAMHSA, 2023). Incorporating culturally responsive approaches allow clients to feel heard, safe, and empowered. This approach may enable a client to feel unjudged and safe to be truthful about their use (SAMHSA, 2023). Clinicians must reflect on biases and the ability to provide services to clients who may use cannabis for spiritual and religious reasons, and for clients who may exhibit sociocultural influence as a reason for cannabis use while in treatment. There are many cultural traditions involving the use of cannabis for ceremonial purposes, traditional medicine, and recreational purposes (Rafei et al., 2023). Further, client-perceived risks of cannabis may differ based on cultural background, and this difference requires clinicians to discuss cultural influences with clients in order to form unique treatment approaches that incorporate a culturally informed framework (Prashad et al., 2017; Rafei et al., 2023). While it may be a difficult balance to achieve, this approach allows for ethical adherence and the incorporation of harm reduction strategies where necessary. It is imperative that clinicians always respect the choice and autonomy of their clients should they choose to use (CPA, 2017; Rafei et al., 2023; SAMHSA, 2023).

Responsible Caring

It is the responsibility of the clinician when working with clients who use cannabis to balance the potential harms and benefits according to Principle II: Responsible Caring (CPA, 2017). Under this principle, working with cannabis-using clients is a complex ethical balancing act, as the literature reveals the potential harmful effects of cannabis, while also respecting the potential therapeutic benefits and choice to use (CPA, 2017). This principle also emphasizes the responsibility to protect vulnerable clients, with the suggestion to seek ethical guidance if a clinician fails to maintain competence (CPA, 2017). The ethical responsibility of clinicians to balance harm and benefit is difficult, especially considering the potential for clients to perceive benefit from their cannabis use. A clinician might notice the limiting of progress for the client but is also required to maintain the boundary of respecting the choice to use. Taking a harm reduction approach involves acknowledging that substance use is inevitable; therefore, the role of the clinician is to encourage less harmful behavior when consuming (Stuart-Maver, 2020). Approaching cannabis-using clients with a harm reduction framework might serve to help balance promoting good and lessening harm, as it respects the autonomy to use while also promoting a clinician's ethical duty in adhering to Pricinple II (CPA, 2017; Stuart-Maver, 2020). Adhering to this principle therefore requires such competence, and this capstone aims to be a source where competence can be built to work with cannabis-using clients who are in treatment for depression and anxiety. Understanding the variations in presentation of cannabis and its effects on clients, and its potential influence on therapeutic outcomes, is crucial for caring responsibly (CPA, 2017).

Reflections on Personal Learning

This capstone project has been valuable in developing competency in working with cannabis-using populations. The literature suggests that cannabis can affect depression and anxiety treatment outcomes both negatively and positively, which was an assumption I had as a researcher entering this project due to personal exposure in my social circles. However, by completing this capstone project, I have gained an appreciation for how complex the relationship is between cannabis and mental health treatment outcomes and was delightfully surprised by the promising studies concerning the role of CBD in treating anxiety and depression. With how common cannabis use seems among young adults, this capstone has allowed me to develop skills and an understanding of how to navigate the complex relationship clients may have with their cannabis use and treatment outcome goals. Having already experienced this in my practice as a student, I feel I have gained a thorough and concrete understanding of how to engage in meaningful conversation and therapeutic practice with cannabis-using clients.

Final Overview

This capstone project examines the complex relationship between cannabis use and mental health treatment outcomes for depression and anxiety in a post-legalization landscape in Canada. Using a harm reduction framework, the literature was synthesized to examine whether cannabis can help or hinder therapeutic progress for clients receiving treatment for depression and anxiety. Overall, the literature reveals that while cannabis can provide temporary relief from distressing symptoms, the dominant narrative identified within the literature is that chronic use, particularly of THC-dominant strains, can worsen depression and anxiety symptoms and interfere with therapeutic progress. While the self-medication hypothesis does acknowledge the

temporary alleviation of symptoms, it is this cycle of relief-seeking that can perpetuate the symptoms that users are attempting to relieve.

The suggestion that CBD has therapeutic potential revealed throughout the literature suggests that while THC-dominant products may facilitate problematic patterns and effects, education and harm reduction strategies might benefit a client more so than complete abstinence. Clinicians, therefore, should assess use with cannabis-using clients and develop unique treatment approaches to target cannabis use when necessary.

Ultimately, this capstone reflects an area of research that is novel and requires much more literature to further cement the findings. Navigating the post-legalization of cannabis landscape presents a challenging ethical situation for clinicians to navigate, where client autonomy must be respected and potential harms minimized. Incorporating the research into practice might help clinicians adapt therapeutic approaches to target what is needed while also respecting the choice to use cannabis.

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