Attachment and Cannabis Use Prevention in Youth

by

Alain F. Franchi

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APPROVED BY

Jennifer Campbell, PsyD, R.Psych., Capstone Supervisor, Master of Counselling Faculty

Kevin Barry, M.S.W., M.P.A., R.C.C., R.S.W., Faculty Reader, Master of Counselling Faculty

School of Health and Social Sciences

Abstract

British Columbia laws allow people as young as 19 years old to grow, buy, and use non-medicinal cannabis products, despite researchers warning of the significant risks to health and mental health for youth under 25 years old. The rising prevalence of cannabis use and harmful consequences for youth calls for more effective prevention methods. Some researchers link substance misuse to an unmet need for people to connect and bond. This capstone reviews the research relating substance and cannabis use in youth to attachment theory to inform prevention approaches to substance use for youth. The findings suggest that attachment-based prevention strategies can be effective, but research and interventions remain sparse. Furthermore, there is concern that recommendations such as preventing youth from associating with peers who use drugs could contribute to the stigmatization and discrimination against youth who may already be suffering from disconnection. There is a need for more research on the effectiveness of attachment-based prevention to reduce substance use and stigma and to foster connection. This capstone summarizes attachment-based prevention approaches for counsellors and educators to support youth and caregivers facing risks associated with cannabis use.

Keywords: attachment theory, substance use, prevention, cannabis, adolescents

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Table of Contents

Abstract 2

Acknowledgements 3

Chapter 1: Introduction 7

Overview of the Topic 7

Capstone Purpose Statement 11

Theoretical Framework: Attachment Theory 11

Contribution to the Field 13

Reflectivity and Positionality Statement 14

Definition of Terms 16

Outline of Capstone Project Chapters 19

Chapter 2: Literature Review 21

Biological Factors of Attachment and Cannabis Use 21

Genetics Influences Over Attachment and Cannabis Use 21

Attachment and Physiological Responses to Stress 23

Brain Attachment Processes and Cannabis Use 25

Psychological Processes of Attachment and Substance Use 26

The Formation of Attachment in Children and Youth 26

Attachment Style and Youth Substance Use Risk 28

Trauma, Abuse, Neglect, Attachment Style, and Substance Use 31

Social and Environmental Factors of Attachment and Youth Cannabis Use 32

Parent-Child Relationship *33*

Siblings, Friends, and School Influences *35*

Diversity and Inclusion Considerations *36*

Attachment-based Prevention for Youth Cannabis Use 38

Prevention in the Community *38*

Prevention in Counselling *39*

Prevention with Families *41*

Prevention in Schools *43*

Summary 44

Chapter 3: Discussion and Applied Practices 47

Discussion 47

Limitations in Attachment and Substance Use Studies *47*

Gaps in Attachment-based Substance Use Prevention *49*

Application 50

Recommendations for Families – For youth, parents, or caregivers *51*

Recommendations for Counsellors *52*

Recommendations for Schools *52*

Recommendations for the Community *53*

Reflection on Personal Learning 54

Final Thoughts 55

References 56

Appendix 73

Attachment-Based Youth Cannabis Use Prevention Recommendations 73

Recommendations for Families – for youth, parents, or caregivers 73

Recommendations for Counsellors 74

Recommendations for Schools 75

Recommendations for the Community 76

Chapter 1: Introduction

Cannabis use is a controversial topic, and with cannabis legalization in Canada, understanding the impact of consuming cannabis and having practical approaches to protect youth against the risks associated with using this substance is critical (Hamid et al., 2022). The first chapter of this capstone will review why it is urgent to focus on cannabis use in adolescence and find better ways to reduce the draw that youth experience toward using this drug. After identifying the challenges surrounding cannabis use in youth, presenting the objectives for this research project, the theoretical lens, and the contribution of this research to the counselling field, I will reflect on values and experiences that drew me to learn more about attachment theory and youth cannabis use. This introductory chapter will conclude by defining terms central to this research and outlining the content of the rest of this capstone research project.

Overview of the Topic

While cannabis use is controversial, cannabis is also revered by some people and cultures as a medicinal and mystical plant (Aggarwal, 2021). It is further famous for its conviviality (Vanderbruggen et al., 2020) and prosocial factors (Vigil et al., 2022). There are considerable debates and discrepancies among researchers and the public on the potential for cannabis to alleviate mental health concerns, such as anxiety, sleep, post-traumatic stress, depression and bipolar disorder (Turna et al., 2017). Haines-Saah and Fischer (2021) argued that cannabis legalization added to the confusion and controversy because there were doubts that regulation would achieve the government's declared goals of protecting youth from the risks associated with cannabis. They added that focusing on the clinical risks also distracted from addressing social inequities that affect disproportionately marginalized and racialized youth.

There are concerns about the popularity of cannabis use among youth, exposing consumers who start using the drug under the age of 25 to possible long-term health and mental health risks (Hosseini & Oremus, 2019; Zuckermann et al., 2021). One concern is that early cannabis use may cause symptoms of psychosis, depression, or anxiety (Hosseini & Oremus, 2019). In their meta-analysis, the authors noted strong support for a higher risk of psychosis. Almost 55 percent of studies considered in their research linked early cannabis use to higher symptom levels. For youth, early cannabis use is also associated with memory issues (Duperrouzel et al., 2019), a reduction in intelligence quotient (Power et al., 2021), and poorer cognitive functioning and academic performance (Cyrus et al., 2021). Researchers have also long observed a relationship between consuming cannabis and exacerbating schizophrenia symptoms in people with vulnerabilities (Hamilton, 2017). Williams (2020) reported much literature calling cannabis a gateway drug because youth who use cannabis are over 100 times more likely to start using cocaine than youth who never use it. The researcher also observed an increased risk of developing an opioid use disorder. However, for some at-risk youth, smoking cannabis may protect them from starting injection drugs (Reddon et al., 2018).

The contemporary trend toward an increase in harmful concentrations of delta-9-tetrahydrocannabinol (THC) (Chandra et al., 2019), the psychoactive agent of cannabis, further blurs the complex picture when attempting to understand and communicate about cannabis use risks and youth. Youth frequently using high-potency cannabis significantly increases their probability of developing an anxiety disorder or a cannabis use disorder (CUD) (Hines et al., 2020). Furthermore, people may be unaware that CUD is challenging to treat. Not only are there no well-established medications that reduce cannabis withdrawal symptoms (Connor et al., 2021; Zhand & Milin, 2018), but psychotherapeutic approaches have only shown moderate results in

lowering consumption, and people do not consistently achieve abstinence (Connor et al., 2021; Walther et al., 2016). People may not be motivated to stop using cannabis if they do not experience distressful side effects, such as unwanted substance-induced psychosis from using the drug (Schnell et al., 2023).

Undeterred by the potential harm exposed in the research, youth's perception of the risks related to consuming cannabis has lowered since 2011 (Hamid et al., 2022), which may, in part, explain the youth cannabis use prevalence in Canada. According to the Government of Canada (2020), in 2019, 26.4% of 15 to 24-year-olds surveyed used cannabis in the past three months (Government of Canada, 2020). In 2022, 37% of 16 to 19-year-old youth and 50% of 20 to 24-year-old (i.e., young adults) surveyed had used cannabis within 12 months (Government of Canada, 2022). Hammond et al. (2021) reported an increase in the use prevalence of more potent cannabis products, such as vaping oils and liquids, from 24.2% in 2017 to 52.1% in 2019 among US and Canadian youth who consumed the products in the past 30 days of their study. In their research on CUD prevalence in the USA, Han et al. (2019) found that 52.4% of young adults (18-25 years old) had used cannabis. 5.6% had a CUD diagnosis after one year of using cannabis, 7.7% after two years, and 9.1% after consuming cannabis for three years. For youth (12-17 years old), the authors found that 15.3% had used cannabis. Out of those, 10.9% qualified for a CUD after using cannabis for one year, 15.3% after two years, and 20.6% after using cannabis for three years.

DeVillaer (2023) summarizes that reasons youth use cannabis is a complex and multidimensional question that includes a combination of factors such as seeking pleasure, new experiences, curiosity, desire for self-expression of maturity, need for emotional relief from boredom and other life stressors, and that peer acceptance is a contributing factor. This last point

aligns with the established link between the drive toward using drugs and the need for people to connect and bond emotionally (Fletcher et al., 2015). These observations suggest that a better understanding of the relational factors related to attachment in youth engaging with substance use, such as cannabis, would help improve prevention and treatment programs.

Porath-Waller et al. (2010) found that drug use prevention programs are inexpensive compared to health and mental health treatments and the social and judicial costs associated with cannabis and other substance use. The authors highlighted how even a modest reduction in drug use resulting from prevention programs could be highly cost-effective. However, educational and prevention strategies are sparse and inadequate (Hamid et al., 2022). Parents are disempowered and unsupported when facing drug use, lacking resources and blaming themselves for their inability to prevent the problematic use of cannabis (Haines-Saah et al., 2019). Watson et al. (2019) criticized that risk-based prevention messaging campaigns focusing primarily on the possible harm from use and promoting abstinence can be counterproductive. They noted that such an approach increased the intent to use because young people tended to dismiss the risks from their observations of the effect of cannabis on their peers: youth see many peers not engaging in high-risk use or experiencing adverse effects. The researchers advised having a more balanced communication and engaging youth in conversations about cannabis rather than having an authoritative approach. Norberg et al. (2013) further denounced the paucity and quality of prevention interventions for cannabis use in youth and suggested the development of innovative multi-modal prevention interventions.

Following a review of ten studies on adolescent and substance use disorder (SUD) and thirteen related to adults and SUD that linked attachment styles and substance use, Schindler and Bröning (2015) suggested that preventive interventions and treatments aiming to improve

attachment security would well complement other prevention approaches to address substance use in youth. In effect, current prevention strategies may lack such consideration because, as Hamid et al. (2022) report, they usually focus on risks, abstinence, and adolescent personality and values.

Capstone Purpose Statement

The risks and prevalence associated with youth cannabis use, the relational factors relating to the drive toward using substances, and the need for better prevention lead to wonder what attachment-based prevention approaches to cannabis use and misuse in youth look like in practice. This capstone aims to understand how attachment relates to cannabis use for youth and to summarize attachment-based cannabis use prevention approaches. This research will add to the literature on cannabis use prevention for youth by outlining, in a handout, attachment-based strategies, recommendations, and resources for caregivers, counsellors and educators to support families facing the risks of cannabis use and misuse.

Theoretical Framework: Attachment Theory

Understanding the relationship between substance use and attachment starts with reviewing the foundations of attachment theory, originating in the collaborative work of John Bowlby and Mary Ainsworth. In the historical account of their collaboration, Ainsworth and Bowlby (1991) recounted that during World War II, Bowlby, a British psychiatrist and Freudian psychoanalyst, worked with juvenile delinquents and youth who were affectionless and anxious. Bowlby linked their behaviours to the early separation from their primary caregivers, and he argued that Freudian analysts who focused on internal conflicts did not consider the influence of events in the children's lives enough.

Meanwhile, in Canada, William Blatz and her student Mary Ainsworth worked on a security theory, proposing that children were driven to explore the world and relied on their parents' care when feeling insecure (Ainsworth & Bowlby, 1991). They believed that as children learn skills to navigate and cope with the world's challenges, they slowly acquire independent security. During the early 1950s and 1960s, Bowlby and Ainsworth began collaborating while conducting separate research. As Bowlby followed Harlow's work showing that infant monkeys preferred having contact with a caring mother over obtaining food, he started to map out factors of infants' attachment behaviours toward their caregiver. He observed how the absence of an attachment figure activated separation anxiety. On her side, Ainsworth studied mother-child interactions and the formation of mother-child attachment by watching relationship ruptures and repairs following separation and reunions between the mother and child. These were the premises of the strange situation experiment she developed during the 1970s. She observed some infants feeling secure and some feeling insecure in their attachment to their caregivers. Insecure children could exhibit anxious, avoidant, or ambivalent behaviours (see definition of terms at the end of this chapter). Since the 1980s, further longitudinal research building on Bowlby and Ainsworth's work exposed the implications of mother-child attachment security or insecurity on later individual development through childhood, adolescence, and adulthood.

Amidst extensive research and being at the base of therapeutic approaches supported empirically, such as emotionally focused therapy (Greenberg & Johnson, 1988), some researchers criticize attachment theory. For example, Hazan and Shaver (1994) commented that Bowlby's attachment theory did not acknowledge enough biological and evolutionary processes in forming relationships. They questioned the concept of attachment to a primary caregiver,

asking if attachments could be singular or multiple, characterizing an individual or the relationship. They also wondered about the traits' stability and how much attachment characteristics belong to the parenting or the child's temperament. Choate et al. (2019) contested the cultural applicability, contending that this theory, developed from a Western-centric perspective, made ethnocentric assumptions and defined the normality for dyadic mother-child relationships that may not apply to all cultures. The authors gave the counterexample of communal indigenous systems that emphasized collective caregiving and the value of attachments directed toward a community of people rather than toward individuals.

Despite being the object of criticism and having cultural limitations, there is substantial literature on attachment theory and relative therapeutic approaches. Therefore, it is a crucial framework for understanding the developmental aspects of relationships. It may further inform possible prevention approaches to foster the connections and bond quality that may protect youth from substance use.

Contribution to the Field

Counsellors need accurate information and practical prevention strategies to help youth and parents reduce the risks related to youth cannabis use and misuse. This capstone research aims to fill an information gap about the role of attachments in cannabis use in youth to promote more effective conversations and prevention methods. Approaches fostering secure attachment and connection contribute to the destigmatization of substance use, and this is crucial because, as Unger (2015) points out, stigmatization is a barrier to preventing and treating substance misuse. While the legalization of cannabis in Canada may have started reducing the stigma toward cannabis users, youth may still experience stigma about their intersectional identities, such as gender, sexual orientation, race and socioeconomic status.

Furthermore, aiming to raise awareness about the needs of people who use drugs and to destigmatize substance use, Johann Hari said, "The opposite of addiction is not sobriety; the opposite of addiction is connection" (TED, 2015, 14:21). His idea is congruent with the research supporting that substance use may relate more to attachment challenges and isolation than to risk-taking behaviours and requiring abstinence. What would happen if youth consuming cannabis were viewed as having attachment challenges and seeking love, connection, or support for their mental health rather than lacking character or looking for trouble? Would society be more inclined to offer empathy, support and resources? When feeling isolated, insecure, or socially challenged, would youth feel safer and welcome when seeking help rather than being stigmatized and seeking refuge in substance use?

To address concerns about cannabis use in youth post-legalization, researchers recommend 1) increasing the information about risks and harms, 2) enhancing the service provider education and training, 3) reducing stigma and minimization, 4) considering diversity, inclusion, equity and anti-racism views while approaching cannabis use in youth (Kourgiantakis et al., 2023). After reviewing the research in chapter 2, this capstone will contribute to the field by addressing some of these recommendations in chapter 3.

Reflectivity and Positionality Statement

I am a cisgender, heterosexual, white man of French and Italian origin. I grew up in France in a middle-class family who valued education before emigrating to Canada for my work career during early adulthood. I lived most of my life in the dominant culture. My privileged location prevented me from suffering significant social justice-related trauma. I have an able and overall healthy body and mind and have not experienced addiction. While my privileges protected me, they also impeded my understanding of people using substances to cope. My work

as a volunteer at a crisis centre and counselling studies raised my awareness of this pervasive societal problem. It transformed my understanding and gave me more compassion for people's suffering, often externalized into substance use.

From early childhood, my parents taught me the risks of rapidly developing an addiction when consuming alcohol or recreational drugs. They conveyed their concerns about my health if I used tobacco or other mind-altering substances. On my side, I trusted they had my interest in mind rather than being dogmatic. On their side, they were confident in my ability to make safe decisions about substance use. My attachment to my parents protected me from the pervasive social pressure to consume or misuse alcohol, tobacco, cannabis, and other drugs.

In the years leading to the legalization of cannabis in BC, I supported a teenager who experienced adverse effects after using cannabis. While unsure about their motivation to use this substance, I inferred multiple factors, such as curiosity for new sensations, peer influence, the need to belong and affirm themselves, lack of social engagement at school, and, more importantly, adverse childhood experiences, such as experiencing bullying at school in previous years and the divorce of their parents. While illegal at that time, cannabis was widely available. Given my theoretical knowledge about drugs, I was surprised how many youth and adults argued that cannabis was a "safe drug," less harmful than alcohol or tobacco. Unfortunately, the adolescent developed a cannabis use disorder within six months of first use. The consequences were staggering, ranging from poor functioning at school, including poor grades, lateness, absenteeism, isolation from peers who were not consuming, and disruptive behaviours, to loss of sleep, anxiety, degradation of the relationship with their parents, lack of motivation, desire to drop out of school and inability to stop using cannabis. Despite a turnaround and a supportive

environment, the reduced functioning and low grades during these formative years may have limited their career options.

This experience and my beliefs about drugs' risks and adverse effects drive me to help youth and to learn more about attachment and cannabis use. I wonder if more awareness in society of the attachment theory, the longing for connection, and the link with substance use may have prevented this adolescent from developing an addiction to cannabis.

As a final thought, McKay et al. (2011) found the 2005 "Do Bugs Need Drugs" information campaign to reduce antibiotic consumption in BC effective because it targeted children and allowed them to reach and influence their parents. It facilitated a rapid intergenerational propagation of attitude change toward antibiotics. I hope that providing youth, families, and schools with the information in chapter 3, such as youth who seek drugs may need meaningful social connection, attachment, and adequate support, will have the above effect to permeate the destigmatization of youth cannabis use through society more rapidly.

Definition of Terms

Adverse Childhood Experiences (ACEs): childhood trauma such as physical, sexual and emotional abuse, neglect, household dysfunctions, and violence that may have negative health and mental health consequences in adulthood (Felitti et al., 1998).

Ambivalent attachment: a form of insecure attachment where an infant exhibits positive and negative responses toward their caregiver, such as seeking closeness and resisting close contact while reuniting with their caregiver after a separation (Ainsworth et al., 1978).

Anxious-avoidant attachment: a form of insecure attachment where an infant may not engage in exploring the world when the caregiver is absent and tends to avoid or be indifferent to the caregivers (Ainsworth et al., 1978).

Anxious-resistant attachment: a form of insecure attachment where an infant may be anxious in the presence of their caregiver, distressed if the caregiver is absent, and angry when reunited with their caregiver, while sometimes also resisting contact with them (Ainsworth et al., 1978).

Attachment: a specific aspect of the parent or caregiver-child relationship that involves making the child feel secure and protected (Benoit, 2004).

Attachment-based prevention: specific to this capstone, approaches considering attachment theory to reduce youth cannabis use and misuse to avoid risks of harm (see *prevention*).

Attachment style: within Bowlby's (1988) attachment theory, an attachment style is a way to relate to others in relationships and intimate relationships. People's attachment style is influenced by the quality of the attachment bond they had as children with their caregivers. The theory identifies four attachment styles: secure, anxious-resistant, anxious-avoidant and disorganized attachment style. Mary Ainsworth and her colleagues also classified the attachment styles as secure and insecure, with insecure attachment characterized as anxious, avoidant and ambivalent attachment style (Ainsworth & Bowlby, 1991).

Attachment theory: theory developed by John Bowlby and extended by Mary Ainsworth and other researchers stating an evolutionary need for children to form emotional attachment bonds with their caregivers and adults with significant others (Ainsworth & Bowlby, 1991). The theory describes different attachment styles influencing people's emotional development and stability.

Emotional intelligence: a form of social intelligence that consists of monitoring and discriminating emotions and feelings for self and others to guide one's thoughts and actions (Salovey & Mayer, 1990).

Cannabis: a plant species used as a recreational drug, also known as marijuana and hashish (when concentrated as pure resin). The drug contains a psychoactive agent, delta-9-tetrahydrocannabinol (THC), which gives a sense of euphoria, well-being, easy laughter and perceptual distortion (APA, 2023). THC impairs concentration, short-term memory, and food craving. Other observed adverse effects are anxiety, panic and hallucinations (i.e., cannabis intoxication and cannabis-induced psychotic disorder) when taken at higher doses. People may develop tolerance and withdrawal syndrome as in a CUD (APA, 2023).

Disorganized attachment: within the strange situation experiment and related to the attachment theory, a form of insecure attachment where a child does not show consistent behaviours when separating or reuniting with their caregiver (Ainsworth et al., 1978).

Hypothalamic-Pituitary-Adrenal (HPA) axis: a complex feedback loop involving the brain's structures of the hypothalamus, pituitary gland and adrenal glands, producing hormones that regulate various functions in the body such as the metabolism, immunity and emotions (Selye, 1936).

Insecure attachment: within the attachment theory, an insecure attachment is a range of negative caregiver-child relationships characterized as anxious, avoidant, and ambivalent (Ainsworth et al., 1978).

Prevention: policies or actions to reduce the prevalence of health problems and related risk factors in the population (Oxford University Press, n.d.).

Secure attachment: a secure attachment is a positive caregiver-child relationship characterized by the child's confidence in the caregiver's presence, showing mild discomfort when the caregiver leaves, and rapidly reconnecting with positive affect when the caregiver returns (Ainsworth et al., 1978).

Substance Misuse: repeated substance use that causes significant negative consequences, such as loss of control, failure to meet responsibilities, disabilities, social issues and health concerns (Buddy, 2023).

Substance Use: a pattern of use of substances that alter one's physical and emotional state and that can have harmful consequences, such as nicotine, caffeine, alcohol, opioids, stimulants and cannabis (Buddy, 2023).

Youth: according to the United Nations (n.d.) definition, youth is not a universally defined age group. Youth represents people between 15 and 24 years old. However, given that people start using cannabis at a younger age, in this capstone, the term youth will encompass ages 10 to 25, including late childhood, teenagers, adolescents and young adults.

Outline of Capstone Project Chapters

Enhanced prevention approaches are needed to reduce the prevalence and risks of early cannabis use in youth. To ground the research on attachment-based prevention approaches, chapter 2 of this capstone will review the literature on attachment, youth cannabis use, and the link between the two. It will examine the biological basis of attachment and the influence of cannabis on the brain's attachment systems. Next, the review will consider the psychological processes of attachment, such as the development of attachment in children and youth, the link between attachment style and substance use, and the factors that may impede the development of

secure attachments. Then, it will explore the social and environmental factors influencing the youth attachment style and drive toward substance use.

Chapter 3 will revisit the project's purpose and the research question – what attachment-based prevention approaches to cannabis in youth would look like in practice. I will discuss and comment on the findings in this capstone, highlighting learnings and current knowledge. Next, I will share the limitations, constraints, structural power and systems that maintain societal inequities or gaps in contemporary literature. Finally, I offer a handout for mental health professionals and educators, which includes accessible attachment-centered information and prevention resources that may foster destigmatizing conversations about youth cannabis use.

Chapter 2: Literature Review

Some researchers have long considered the possibility that addiction could be an attachment disorder (Fletcher et al., 2015; Flores, 2001; Padykula & Conklin, 2010; Thorberg & Lyvers, 2010; Unterrainer et al., 2017). This chapter will review the literature linking attachment and cannabis misuse in youth and how this can inform cannabis use prevention approaches. The first part of this review examines the research related to biological factors of attachments and cannabis use. The second part of this review analyzes the research on psychological attachment processes linked to substance use. Next, this review considers social and environmental factors of attachment and youth cannabis use. The last part of this chapter reviews the research on attachment-based prevention of youth cannabis use.

Biological Factors of Attachment and Cannabis Use

From early observation in animal studies, theorists have long considered attachments an evolutionary process grounded in biology, a motivational system driving social interactions to serve the species' survival (Oliveira & Fearon, 2019). Themes such as the role of genetics, brain development, brain systems supporting attachment behaviours, and physiological responses to stress are recurrent in the literature (Fuchshuber et al., 2020; Gerra et al., 2019; Oliveira & Fearon, 2019; Olsson et al., 2013; Schindler & Bröning, 2015; Serra et al., 2019; Wedel et al., 2022). This section will discuss the research related to these themes.

Genetics Influences Over Attachment and Cannabis Use

Agrawal and Lynskey (2006) reviewed ten years of family, twin, and adoption studies examining the relationship between genetic factors, environment and cannabis use. Most studies in their review found that cannabis use, misuse or dependence had a significant heritability ratio ranging from 0.17 to 0.67. They also observed the substantial influence of shared environmental

factors within a range of 0.26 and 0.85 and more modest non-shared environmental factors within a range of 0.15 and 0.25. The authors did not find strong support for the heritability difference between men and women. However, this research did not focus on attachment and researchers warned that interpreting the meaning of heritability can be confusing: a 50% heritability does not mean that cannabis use is 50% due to genetic factors. It means that half of the difference in individuals for cannabis use is statistically due to genetics. Furthermore, heritability can vary as it is affected by factors such as sample size, age, environment and social-political trends.

Oliveira and Fearon (2019) looked for evidence of genetic influences on attachment style. Twins and other genetic studies results were inconsistent or not replicated, and the authors concluded there is little evidence of the genetic impact on attachment security or insecurity. Furthermore, the research did not establish a link between temperament and attachment classification. While an individual's temperament, which relates to their genetic makeup, may play a small role in anxious attachment, researchers dismissed the influence of temperament for disorganized and avoidant attachment styles. The authors explain that attachments are formed from the interaction between the child's temperament and the caregiver's traits. It suggested strong support for environmental factors' predominant role in predicting early childhood attachment style.

Olsson et al. (2013) found a link between substance use, including cannabis, and the repeated DRD4 genes and 7R+ alleles that control dopamine receptors in the brain for people with insecure attachment styles. Gerra et al. (2019) also found a weak but possible association between some genes, such as the Taq1A SNP ANKK1, with cannabis use and attachments because these genes influence cannabinoid and dopamine receptors in the brain's attachment

system. However, these researchers found that this was only correlated with the presence of significant environmental factors. Only subjects exposed to emotional and physical neglect had more risk of developing a cannabis use disorder, not those in optimal parenting conditions. Nevertheless, as male subjects had an increased risk of becoming addicted than females, the authors concluded that genetics could contribute to cannabis use.

Attachment and Physiological Responses to Stress

One factor related to attachment and physiological responses to stress is the heart rate. Oliveira and Fearon (2019) measured infants' heart rates and cortisol response levels during the strange situation procedure. They found that securely attached infants had their heart rate returning to normal more quickly after reunion with their caregiver than insecure infants, indicating that securely attached infants were regulating their emotions more effectively. They also observed that avoidant infants showed the same elevated heart rates as secure and anxious infants despite having a composed attitude during the separation from their caregiver phase of the experiment. It demonstrated that a composed attitude did not imply a lack of distress.

Furthermore, infants who were insecurely attached showed greater cortisol levels. While infants with disorganized attachments had a lower baseline cortisol level than other infants, they experienced the most significant cortisol increase during the experiment's stress phase. Anxious infants most reactive to the separation from their caregiver showed the most cortisol increase from their baseline. The authors concluded that insecure children demonstrated heightened physiological responses to stress and poorer downregulation. This research revealed a greater stress-response sensitivity of the Hypothalamic-Pituitary-Adrenal (HPA) axis in insecurely attached children. Furthermore, it showed that the HPA axis is very sensitive to the quality of parental care during the early stages of infant development. The researchers deduced that such

sensitivity was shaping the future functioning of the HPA axis. Congruent with these observations, Wedel et al. (2022) highlighted that chronic exposure to racial and sexual orientation discrimination, for example, could lead to limbic system dysregulations, resulting in maladaptive cognitions and behaviours, further leading some people toward substance use. It suggests the importance of preventing youth from experiencing negative social and environmental experiences to address substance use.

Another factor related to attachment and physiological responses to stress is hormones. Hormones such as oxytocin play a central role in the attachment bond between parents and children (Serra et al., 2019) and the formation and maintenance of social relations (Fuchshuber et al., 2020; Lewis et al., 2020). For example, Fuchshuber et al. (2020) explain that soft physical contact and social affection increase oxytocin, which interacts with many brain regions related to pro-social interactions and promoting social connection. The authors studied the baseline oxytocin levels in drug users compared to a control group of people who did not use drugs. They observed a slight decrease in oxytocin levels in response to an attachment stimulus for people who used substances. However, they highlighted that more studies would be needed to increase the statistical significance of their findings.

Oliveira and Fearon (2019) supported that early adverse caregiving experiences may have a long-term impact on the development of oxytocin-related systems in children's brains and low levels in individuals. They inferred that transgenerational maltreatment might be related to oxytocin because it is a known mediator of parental behaviour. In their study about the role of oxytocin in trauma, attachment and resilience, Sharma et al. (2020) correlated reduced oxytocin levels and increased attachment insecurities. They explained that adverse childhood experiences (ACEs) often imply ruptures in social bonds and loss of sense of identity and safety. The authors

found that increasing oxytocin levels improved resilience to traumatic experiences, pair bonding and desire for affiliation. These findings suggest that promoting protective oxytocin-producing experiences would help prevent cannabis use in youth.

Brain Attachment Processes and Cannabis Use

The limbic system, including the mesolimbic and mesocortical areas, is a part of the brain that controls emotions and behaviours related to our survival. It regulates responses, such as fight, flight or freeze, and, among others, the relations to self and others (i.e., social cognition, theory of mind), motivation, feeding, reproduction, bonding and caring for children (Rajmohan & Mohandas, 2007). The limbic system is involved in regulating the attachment process through the release of endogenous hormones such as endorphins (i.e., endogenous opioids making us feel good) and cortisol (i.e., making us respond to stress) (Schindler & Bröning, 2015) and other neurotransmitters such as dopamine, involved in reward systems (Oleson & Cheer, 2012). Regarding attachment, when a child experiences separation from their caregiver, there is an increase in stress hormones and a deficit in endorphins, creating emotional distress and insecurity (Oliveira & Fearon, 2019; Schindler & Bröning, 2015; Sharma et al., 2020). Upon reunification with the caregiver and their comforting presence, dopamine mediates the release of endorphins that reduce the child's stress by increasing feelings of calm, euphoria, sedation, and relief of fear and sorrow (Schindler & Bröning, 2015). Psychotropic substances such as cannabis and opioids interfere with these brain circuits, artificially generating pleasing sensations and making them attractive to people with insecure attachments (Schindler & Bröning, 2015). Long-term use of these substances, particularly at younger ages, disrupts and alters these functions and may induce addictions and other issues, such as lack of motivation (Oleson & Cheer, 2012). It is concerning because, when facing challenges, youth may trade the short-term rewards from cannabis use for

substantial risks to their present and future mental health. It can further reduce their motivation to get help, develop as adults, and engage with life.

Psychological Processes of Attachment and Substance Use

A better understanding of the physiological factors and processes related to attachment and substance use establishes a ground to explore the developmental psychological mechanisms of attachment and substance use. Knowing the psychological processes behind attachments would inform the development of attachment-based prevention strategies fostering secure attachments that seem protective against cannabis use in youth.

The Formation of Attachment in Children and Youth

Schindler and Bröning (2015) described attachment as a system that develops through parent-child interactions modulating distance-closeness so the child can explore the world. When the child feels unsafe, they may return for comfort to the reliable, secure base provided by their caregiver. It allows them to feel safe again and learn coping strategies. The authors explain that throughout childhood, these interactions will enable the child to develop schemas of their inner world and how relationships with others work. The child's internal working models (IWMs) regulate their emotions through negative experiences and foster establishing close relationships (Bowlby, 1999; Delius et al., 2008; Fletcher et al., 2015; Owen, 2018). In other words, children become securely attached through positive relational experiences that help them develop coping mechanisms, increase emotional self-regulation and become less dependent on others (Schindler & Bröning, 2015). With excessive negative relational experiences with their caregivers, the child may learn counterproductive regulation strategies and develop insecure attachment patterns (Schindler & Bröning, 2015). Depending on the type of negative interactions, the child may become anxiously attached, manifesting in overactive behaviours such as seeking their

caregivers' attention, risking developing negative views of themselves, and internalizing symptoms (e.g., anxiety, sadness, loneliness) (Schindler & Bröning, 2015). The child may also develop avoidant attachments, which manifest as deactivating behaviours aiming to turn away from their distress, risking developing externalizing symptoms (e.g., anger, aggression, hyperactivity that may be aversive to others, withdrawal) (Schindler & Bröning, 2015).

Children and youth who develop anxious attachment styles tend not to pay attention to their emotional needs and avoid interpersonal relationships because they do not trust in the support of others (Estévez et al., 2017; Jacoby, 1995). In more extreme cases, such as abuse, neglect, traumatic experiences, loss, parental psychopathology and substance use, the child risks developing a disorganized attachment style. It manifests as anxious and avoidant behaviours and an elevated risk of developing psychopathologies (e.g., borderline personality disorder) (Schindler & Bröning, 2015). Schindler (2019) remarked that insecure attachments are not necessarily pathological but may still related to mental health and disorders. The author warns counsellors of difficulties establishing therapeutic relationships with insecurely attached clients because of their negative views of self, others and relationship expectations.

Positive IWMs development is crucial because it influences individual experiences and attachments to others throughout life (Carley & Adams, 2023; Fletcher et al., 2015). Evidence shows that early attachment style remains, at least, moderately stable through youth (Carley & Adams, 2023; Fraley, 2002). Early childhood relational experiences with their caregivers shape (a) the development of balanced relationships with their peers (Delgado et al., 2022; Estévez et al., 2017; Zimmermann, 2004); (b) the child's abilities to manage their emotions (Bowlby, 1999; Carley & Adams, 2023; Delius et al., 2008; Estévez et al., 2017; Fletcher et al., 2015; Owen, 2018); and (c) mental health during adolescence (Estévez et al., 2017; Oldfield et al., 2016).

During adolescence, youth expand the basis of secure attachment with their family to others, developing their sense of autonomy (Estévez et al., 2017; Van Petegem et al., 2013), spending less time with their caregivers (Estévez et al., 2017; Moretti & Peled, 2004) and moving towards mutual reciprocity with family and friends (Estévez et al., 2017; Priel et al., 1998).

Attachment Style and Youth Substance Use Risk

According to Schindler and Bröning (2015), youth undergo massive emotional and relational changes during adolescence, and researchers have strong empirical evidence that attachment style is a determinant of substance use. For example, it was found that youth with avoidant attachment are likely to be involved with opioids, while other insecure attachment styles may gravitate toward other drugs. In their studies of attachment and substance use in college students, Serra et al. (2019) found that students with insecure attachments were at a higher risk for cannabis, tobacco, and polysubstance dependence than students with more secure attachments. During adolescence, insecure attachments manifest in both externalizing behaviours, such as taking risks and trying drugs, and internalizing behaviours, such as coping with emotional dysregulation and instability, lack of control, and the drive to self-medicating to face emotional pain (Schindler & Bröning, 2015). Schindler and Bröning (2015) describe the function of substance use, problem behaviours, impulsivity, and negative peer affiliations as a youth's distraction from unfulfilled attachment needs. In other words, psychotropic substances may be a substitute for relationships and a tentative to compensate for the lack of attachment strategies (Schindler, 2019).

Fletcher et al. (2015) also linked substance use to the avoidant attachment style. They inferred that adult and interpersonal relationships might seem unpredictable and frightening to youth with this attachment style, which may explain why they might favour substance use's

immediate gratification. The authors saw addiction as a self-regulation disorder, a need for connection and comfort to reduce suffering from an alienated sense of self, and an alternative to relationships rather than a hedonistic aspiration. They explain how a new attachment bond is created with the substance as a substitute for interpersonal relationships. Therefore, they believe addiction could be a misguided effort to self-repair. This view concurs with that of Thorberg and Lyvers (2010), who also saw substance use as a refuge for difficulties with emotional regulation, frustrated desire for intimacy, pain of rejection, anger, and ambivalence about establishing close relationships.

Attachment issues may lead to substance use from negative parent-child interaction that may create long-term affect regulation challenges (Elisardo Becoña et al., 2014; Estévez et al., 2017; Gause et al., 2022), difficulty with separation and individuation, and relational problems (Estévez et al., 2017; Rice et al., 1995). For Estévez et al. (2017), neglect may lead to negative self-concepts and feeling unlovable, two factors leading to substance use. They added that youth with avoidant attachment styles may not be aware of their attachment needs and assume no one would support them. These impediments and negative assumptions may drive them away from relationships and toward substance use to compensate for their dissatisfaction with relationships.

Addiction in youth is more prevalent for those with externalizing behaviours (i.e., corresponding to avoidant traits) than those with internalizing behaviours (Schindler & Bröning, 2015; Trucco et al., 2016; Winters et al., 2008). It is even more prevalent for those with disorganized attachment (Schindler & Bröning, 2015). Schindler and Bröning (2015) infer that substance use for youth with disorganized attachment was an attempt to cope with post-traumatic stress symptoms and other distress. However, their research showed more limited evidence for the relationship between substance use and internalizing behaviours (i.e., corresponding to

anxious traits). They suggested that more longitudinal studies would be needed to understand this relationship and, overall, the role of attachment in the development of addiction.

A secure attachment style protects youth against substance use (Elisardo Becoña et al., 2014; Gause et al., 2022; Schindler & Bröning, 2015). Schindler and Bröning (2015) reported that a more securely attached 14-year-old will consume less substance at 16 years old, and a more securely attached 13-year-old will have fewer alcohol binge experiences at 15 years old. However, the authors warn that while insecure attachments are linked to substance use, secure attachments also play a role in the youth's drive to experiment with drugs.

Schindler and Bröning (2015) presented three disrupted attachment processes related to substance use in youth: (a) a reduced and distorted exploration of the environment, including risk-taking behaviours that would not happen if the use did not consume substances; (b) a reduction in the perception of their inner worlds and that of others, as a possible motive of using substances, not to feel the distress of traumatic memories, and (c) preventing and not engaging in relationship appropriate for their age group. The authors highlighted that these three attachment development disruptions impact future attachments during adulthood. Schindler (2019) saw a fourth attachment process problem, as they viewed substance as a substitute regulation reward for social interaction. Estévez et al. (2017) characterized emotional dysregulation as the lack of control in managing impulses and negative feelings and difficulty engaging with goal-directed behaviours and accessing strategies to regulate emotional state. They observed how the reduced ability to regulate emotions increased risk-taking behaviours and correlated to substance use addiction and insecure attachments. The authors further reported a correlation between lower levels of emotional intelligence and intensive drug use. They concluded that the lack of alternative ways to respond to negative emotions might increase the desire to seek and extend the

state of positive feelings generated by substance use and may make it harder to stop using drugs. Understanding the link between a youth's level of emotional intelligence and the drive to use substances is crucial. It suggests attachment-based prevention approaches, such as educating youth and parents about the essential concepts of emotional intelligence and how to develop it.

Trauma, Abuse, Neglect, Attachment Style, and Substance Use

There is extensive support in the literature that ACEs may lead to insecure attachment (Carley & Adams, 2023; Fletcher et al., 2015; Lewis et al., 2020; Mason et al., 2017; Schindler & Bröning, 2015). Trauma, abuse, and neglect are all apparent risk factors for insecure attachments (Schindler & Bröning, 2015; Lewis et al., 2020). 30 to 50% of children who are victims of maltreatment such as sexual abuse, violence, bullying, neglect, parents with psychopathologies and or substance use develop disorganized attachments (Schindler & Bröning, 2015). Carley and Adams (2023) noted the dual effect of insecure attachment style: if ACEs foster the development of insecure attachment, insecure attachment in childhood further elevates the risk for future adolescent abuse and trauma.

In their research, Mason et al. (2017) confirmed how sexual abuse in childhood related to cannabis use in adolescence. They explained that maltreatment experiences in childhood disrupted the parent-child relationships and mapped the following sequence of events: child maltreatment experiences led to a lower level of parental attachment and resulted in greater youth involvement with cannabis use, connection with peers using cannabis and cannabis use in adulthood. The earlier and more severe levels of childhood trauma are associated with insecure and disorganized attachment styles and predict earlier initiation and more pronounced levels of substance use (Lewis et al., 2020).

Childhood trauma can have significant physiological and psychological effects, creating vulnerabilities and elevating the risk of developing psychosis, other comorbid disorders, and cannabis use, which can aggravate psychosis (Carley & Adams, 2023). In their study on the interaction between attachment, trauma, cannabis and psychosis, Carley and Adams (2023) found that cannabis use creates vulnerability to further trauma. They linked childhood trauma to increased cannabis use and misuse. Adults with insecure attachments tend to use higher amounts of cannabis and with a higher frequency than people with secure attachments. The researchers concluded that trauma and cannabis may have an additive effect, increasing the risk of developing psychosis at all ages. The authors highlighted how attachment styles further influenced the treatment and recovery of psychosis, such as securely attached patients having shorter stays in psychiatric hospitals and better outcomes in treatment and adaptation to the disorder.

For Fletcher et al. (2015), the experience of neglect, abuse or loss can lead to ruptures in attachment with the primary caregivers and create attachment trauma. People surviving these traumas may cope with painful memories by avoiding close relationships and using or abusing substances. The author also explained that trauma reduces emotional regulation capacities. In these cases, they concluded that substance use was an attempt to self-regulate. The vast literature on the link between ACEs, attachment insecurity and substance use informs this capstone, highlighting that the most important preventive measure against youth substance use is to protect them from experiencing ACEs.

Social and Environmental Factors of Attachment and Youth Cannabis Use

Several social and environmental factors influence attachment and cannabis use in youth. This section will start by looking at some of the specific aspects of the parent-child relationship.

Next, we will examine the influence of siblings, friends, and school. This part will conclude with a review of diversity and inclusion considerations.

Parent-Child Relationship

After better understanding the formation of attachment and relation to drug use from the youth perspective, this section focuses on the parent-child relationship because caregivers are the first social relations that children experience.

The primary caregiver's attitude from birth is central to forming the child's attachment styles (Ainsworth & Bowlby, 1991). One main proposition of attachment theory is that attachment style remains somewhat stable over life, even if researchers found that attachment style can evolve (Davila et al., 1997; Jones et al., 2018). Therefore, parents' attachment style influences youth mental health (Genc & Arslan, 2022) and substance use (Jones et al., 2015). Jones et al., 2015 studied the indirect effect of parents' attachment style on youth substance use. They found that the parental involvement in the youth's life depended on the parent's attachment style: on one side, mothers with avoidant traits sent unintentional signals that they would rather not know about the details of their adolescent's life, and therefore, the youth would be less likely to report about their distresses or drug use. On the other side, fathers and mothers with anxious attachment traits would be concerned that their children would not want a relationship with them and would perceive them as withdrawing information regardless of the actual level of disclosure. The research found that greater maternal avoidant attachment in mothers and greater anxious attachment in fathers were indirectly related to greater adolescent substance use.

Furthermore, if children's attachment style relates to their substance use risk, parents' attachment style may also contribute to parental drug use. Researchers studied the influence of parental substance use on children. Schindler (2019) reported mixed evidence that parents who

used substances could not fully engage with their children. Daniels (2019) contended that many studies on the effect of parental cannabis use on attachment with their children contained samples where alcohol was prevalent and had no control for the interaction of alcohol and cannabis. Therefore, the author concluded that such research did not establish the influence of parents' consumption of cannabis on their ability to foster secure attachment with their children. McLaughlin et al. (2016) even found that for some youth, having parents using drugs can be a protective factor from using drugs themselves, as they may directly experience the adverse effects of drugs on their parents and family.

Mason et al. (2017) further examined how parental attachment may influence cannabis use in youth. The authors found that youth's strong attachment to their parents may discourage them from using cannabis. However, in their study, the protective factor of secure attachment seemed indirect because it related to the parent's disapproval of the youth associating with peers who used cannabis rather than the direct disapproval of cannabis use. Other researchers found that the better the relationship between parent and child, the less likely the youth will be involved with using drugs (Estévez et al., 2017; McLaughlin et al., 2016). Estévez et al. (2017) specified that secure parental attachment reduced risky behaviours, including drug experimentation.

Furthermore, Lewis et al. (2020) noticed that attachment relationships may have a bidirectional link to substance use. Not only insecure and disorganized attachments are factors that lead to substance use, but substance use also contributes to the deterioration of relationships. Tu et al. (2008) found that youth who frequently used cannabis were generally less satisfied with their families than those who did not consume the drug. They were more attached to the group with whom they were using drugs because the consumption of cannabis can bias the perceptions of social cues and can protect them from the social anxiety many would experience otherwise.

Substance use, insecure attachments and emotional dysregulation are risk factors that further increase relational problems with peers and parents (Schindler & Bröning, 2015).

In summary, childhood maltreatment experiences at an early age disrupt parent-child relationships (Manson et al., 2017). Therefore, prevention approaches to substance use must consider the parents' attachment styles and the effect of parents or children using drugs in the parent-child relationship.

Siblings, Friends, and School Influences

According to McLaughlin et al. (2016), there are many reasons why sibling substance use influences whether a youth will start using drugs. A sibling using drugs may stress parents and disrupt family dynamics, increasing chances of neglect of the child who does not use drugs for the mere focus and deployment of resources on the sibling who is using drugs. Older siblings or siblings of similar age who use substances are role models and may supply the substances. However, for some, such siblings may also be a protective factor. For example, the sibling may have experienced adverse consequences from drug use and may want to protect their younger brothers or sisters from similar negative experiences.

Over parental influences, the attitude of friends toward the consumption of cannabis (e.g., peer pressure and behavioural modelling) is one of the most potent predictors of youth starting to use cannabis (Manson et al., 2017). The research by Zaharakis et al. (2018) corroborated that close friendships increased the risk of exposure to cannabis and predicted lifetime cannabis use. On the contrary, association with healthy groups of friends was a protective factor. While youth may have problems communicating their concerns with their parent, they look up to their friends for support (McLaughlin et al., 2016).

Researchers who studied the influence of the attitude toward school on substance use found that attachment to school, a pro-social institution, may be influential in cannabis use (Bryant et al., 2000; Dever et al., 2012; Vogel et al., 2015; Zaharakis et al., 2018). Zaharakis et al. (2018) explain that in early adolescence, youth with a negative view of school develop a weaker attachment to the institution. Subsequently, they may associate with others who share similar negative thoughts about school and engage or get influenced into troublesome activities, such as consuming cannabis. However, Dever et al. (2012) found that the relationship between school bonding and lower substance use remains relatively weak. They found it could apply more to high school students than middle school and that gender and risk-taking moderated this relationship. Nevertheless, encouraging school bonding is relevant to prevention as it may reduce cannabis use in youth.

Diversity and Inclusion Considerations

Some research on youth substance use suggests that boys are more likely to use substances than girls: boys gravitate more toward illegal drugs, and girls tend to abuse more prescription drugs (Estévez et al., 2017). However, Banducci et al. (2018) suggested that childhood emotional abuse increases the likelihood of substance use more for girls than boys. They added that childhood emotional abuse was associated with an increased risk of cannabis use through high school.

Considering gender identity, while many studies attempt to understand gender differences in attachment and substance use by looking at binary differences (i.e., male vs. female), many do not consider the influence of gender diversity (e.g., transgender and genderqueer people) on attachment and cannabis in youth. In a scoping review of risk and protective factors for substance use in youth from gender and sexual orientation minorities, Kidd et al. (2018) showed

the following gap: in over the 97 studies considered, only 9.3% reported findings on gender and sexual minorities youth risks to substance use. These were due, for example, to discrimination, stigma and bullying, but there was no specific research on protective factors for youth in gender minorities. While few studies examine how gender plays in attachment, a meta-analysis by Gorrese (2016) reports that insecure attachments to peers affected adolescent girls more strongly with internalizing issues such as depression and anxiety symptoms. However, this study did not investigate links to cannabis or other substance use. A recent study by Sizemore et al. (2022) looked at attachment insecurity and sexual abuse in transgender women and showed that having secure attachment buffered the effect of depression and substance for this group.

Wedel et al. (2022) found that youth experiencing racial discrimination in different groups in the USA (i.e., Black, Asian, Hispanic, and interracial people) are at higher risk for substance use. However, they could not conclude any particular cannabis use pattern related to racial discrimination. They also found that sexual discrimination against youth from diverse sexual orientations was a stronger predictor of cannabis use than racial discrimination. Among African-American male youth, researchers found that perceived racial discrimination decreased school engagement and increased affiliation with peers who used substances (Brody et al., 2012; Jelsma & Varner, 2020). While researchers found that discrimination increased substance use for that group, they did not find that substance use increased discrimination (Brody et al., 2012; Hurd et al., 2014).

While Jeffers et al. (2021) associated higher cannabis use among people with lower education and economic status, we have not found studies specifically considering the interaction between attachment, cannabis use, and youth in families of lower socio-economic status. Furthermore, some researchers contest the universality of attachment theory (Choate et al., 2019;

Keller, 2018). They express their ethical concerns about promoting interventions fostering attachments, a concept developed from a Western-centric lens, to different cultures, such as subsidence-based traditions (Keller, 2018) or Indigenous culture that values collective caregiving (Choate et al., 2019). In this light, attachment-based prevention approaches must be sensitive to diversity and inclusion concerns so that interventions do not exacerbate stigma and discrimination that contribute to the problems they are trying to solve.

Attachment-based Prevention for Youth Cannabis Use

The risks and harm to this population and the continuous increase in youth cannabis use raise experts' concern that promoting abstinence may be an outdated substance use prevention approach, and new types of discussion between parents and youth need to happen (Barghiel, 2023). Furthermore, despite the consequences of attachment wounds influencing substance use and severely affecting families, little research has been conducted on the effectiveness of attachment-focused substance use prevention (Fletcher et al., 2015). In this section, we will examine the literature on attachment-based prevention of youth cannabis use, reviewing attachment-based prevention in the community, prevention in counselling, prevention within families, and prevention at the school level.

Prevention in the Community

The single most critical prevention of substance use in youth, applicable to all levels of society, is to protect children from ACEs (Carley & Adams, 2023; Fletcher et al., 2015; Lewis et al., 2020; Mason et al., 2017; Schindler & Bröning, 2015). In addition, prevention programs must address inequities, stigma, and discrimination (Unger, 2015). Dr. Gabor Mate, who worked with youth with addiction in Vancouver, BC, during the opioid crisis, gave critical insights into the changes needed in how the community must view youth substance use, misuse and addiction.

For him, addiction must be destigmatized because it has its roots in suffering in childhood, trauma, and social injustices, all affecting decision-making later in life (Mate, 2018). The focus should not be on the behaviour (i.e., substance use or misuse) but on changing societal attitudes, showing compassion and empathy for youth's suffering and addressing the trauma through nurturing connections (TED, 2015; Maté, 2018; Musset, 2020), respect and trust (Maté, 2018). Maté (2018) invites people to reflect on what may have reduced their ability to hear and see children, to show up for them in ways they need, rather than passing on intergenerational pain and trauma. He also reminded us that communities should provide basic needs for youth. It includes giving access to health-conscious opportunities and lifestyle, such as physical activity and healthy food, to help them connect with nature and their body.

As a general rule, researchers recommend avoiding exposing children and youth to substances and delaying the onset of use as much as possible (Scholes-Balog et al., 2020). Tu et al. (2008) also recommended that prevention programs consider the influence of gender due to differences in cannabis use patterns between boys and girls. For example, in their study, the authors found that cannabis use correlated to boys' school grades and Indigenous status, while it was only associated with mental health for girls.

Prevention in Counselling

Counsellors have privileged access to family members and are in a favourable position to assess, address, and foster substance use prevention in youth. In their extensive literature review on attachment and youth substance use, Schindler and Bröning (2015) recommended six attachment-based prevention strategies for counsellors. First, the primary prevention strategy is about developing attachment security. Counsellors can help parents improve their caregiving and communication skills and their sensitivity to their children (Maté, 2018; Schindler & Bröning,

2015), and it is essential to do so for at-risk youth who are bullying or discrimination victims. Counsellors may help develop these skills by inviting parents to gain insight into their attachment styles. Parents may explore their childhood attachment experiences with their caregivers and gain an understanding of how it may affect their parenting (Maté, 2018; Schindler & Bröning, 2015).

A second prevention strategy for counsellors focuses on parental substance misuse. Studies have shown that parental substance misuse carries a significant risk of their children developing drug issues. Therefore, counsellors should explore these concerns with parents.

A third prevention strategy for counsellors is to focus on the therapeutic relationship (Schindler & Bröning, 2015), building emotional connection, respect and trust (Maté, 2018) with their clients to foster and model the development of secure attachments.

A fourth strategy suggests that counsellors explore or review recordings of caregiver-child interactions with their clients.

A fifth strategy for counsellors is to teach clients emotional regulation and stress-coping strategies, which are part of developing the attachment process (Schindler & Bröning, 2015). It includes teaching youth to care for their mind, body and spirit (Maté, 2018).

Lastly, working with families is the most effective way for counsellors to transform attachment (Schindler & Bröning, 2015). Maté (2018) reminds parents how a youth's problematic behaviours are often signs of issues within the family system. When working with complex, insecure attachments, counsellors must pay close attention to the various attachment interactions within the family (Schindler & Bröning, 2015). Counsellors must be ready to offer individual and parental support to families facing youth substance use (Schindler & Bröning,

2015), including providing education and information such as the *Lower-Risk Cannabis Use Guidelines (LRCUG) for Youth* (Fischer et al., 2017).

Many evidence-based counselling interventions exist for the treatment of attachment issues. These include, for example, Attachment-Focused Family Therapy, Emotionally Focused Couple Therapy, and Mentalization-Based Therapy (Fletcher et al., 2015). These approaches are only provided here for reference and will not be reviewed in this capstone.

Prevention with Families

Positive attachment and parent-child relationships protect youth from substance use (McLaughlin et al., 2016). However, as of 2015, family-based and attachment-oriented cannabis use prevention programs for at-risk youth remained scarce or nonexistent (Schindler & Bröning, 2015). In their qualitative study on Australian youth substance use and family influences, Scholes-Balog et al. (2020) investigated the behavioural and social factors leading to youth cannabis use. The authors found multiple factors contributing to early youth cannabis use, including early tobacco smoking and binge drinking, familial contexts with antisocial behaviours, low family management, and weak attachments to parents. From the multitude of factors influencing cannabis use, they deducted that preventive approaches targeting the familial environment should be multimodal to delay the onset of cannabis use effectively.

As youth transition from childhood to young adulthood, parent's influence over their children transforms (Mason et al., 2017; Rusby et al., 2018; Stapley et al., 2021). While this influence may be less direct in the later years, parents should attempt to delay the onset of cannabis use as much as possible (Mason et al., 2017). Jones et al. (2015) recommended that parents remain aware and involved in what is happening in their youth's lives to notice unexpected changes in behaviours. Given the challenges of doing so as the youth emancipates,

they recommended having multiple informants (e.g., father, mother, grandparents) who may have different functions in the family systems. However, the authors warn about the importance of remaining aware of the informant's possible biases. For example, they highlighted how parents' attachment styles facilitated or impeded the exchange of confidence. Low parental monitoring may leave youth at risk of being influenced by friends who use substances (Jones et al., 2015; McLaughlin et al., 2016). In McLaughlin et al.'s (2016) study, youth reported they could be afraid to disclose substance use because of the possible consequences on their relationship with their parents. They could feel guilty for their actions, not wanting to upset their parents or face discipline. As preventive measures, the authors suggested that parents focus on activities that foster parent-child secure attachments, such as spending quality time with their children and using effective communication and listening skills within the family. For example, spending time together allows for monitoring the youth, developing trust that can lead to disclosure, noticing behavioural changes, and intervening early in case of substance use. The youth in the study were less likely to use substances if their parents were caring, loving and supportive. The study also highlighted the importance of mutual trust, where children trusted their parents, and parents also trusted their children, granting them autonomy.

McLaughlin et al. (2016) link attachment quality and preventive approach to authoritative parenting style. For the researchers, authoritative parenting consisted of (a) empathic listening and good communication skills, including the sharing of feelings; (b) finding a balance between granting autonomy and monitoring to mitigate the influence of peer groups; (c) allowing mistakes and understanding that youth is a period of experimentation; (d) having clear and safe boundaries; (e) encouraging and rewarding confidences and disclosures; (f) offering support to the youth when needed; (g) avoid overreaction and involving their friends in arguments, and (h)

understanding that while discipline could be effective, it is not always the best way. The authors also recommended educating and fostering discussions with parents about adapting their parenting styles to their children's temperaments and birth order to promote secure attachment. Lastly, they encouraged educating parents about substance use and how to talk to their children and manage conflicts related to substance use.

Prevention in Schools

Researchers emphasized the importance of the youth's bond with social institutions such as schools (Bryant et al., 2000; Dever et al., 2012; Vogel et al., 2015; Zaharakis et al., 2018), as it establishes social norms and may deter substance use (Zaharakis et al., 2018). Intervention should favour remediation approaches such as counselling over punitive measures for substance use (Evans-Whipp et al., 2015). Zaharakis et al. (2018) found that focusing prevention on developing solid bonds with these institutions, creating a favourable climate, and fostering participation and attachment to students and teachers reduced substance use. The authors reported that extracurricular activities within the school environment might help with positive engagement toward their school and limit risks of exposure to other peer groups potentially involved with drugs. Parents' reinforcement of positive attitudes and attachment toward the school and parents' participation in extracurricular activities also helped reinforce positive social norms and youth's positive views toward school.

When youth are exposed to parental substance use or misuse, schools can alleviate the adverse effects by providing the space to educate them about problematic behaviours related to substance use. Schools should offer support and resources to youth and their families (McLaughlin et al., 2016). Maina et al. (2020) highlighted that, in Canada, schools must consider substance use prevention that is inclusive and appropriate to everyone, including Indigenous

youth. The authors recommended tailoring evidence-based programs in collaboration with Indigenous communities and being sensitive to cultural beliefs.

Summary

Chapter 2 of this capstone aimed to understand the link between attachment and youth cannabis use and to learn about attachment-focused prevention. First, the review revealed an inconclusive or weak link between genetic factors, attachment, and cannabis use and that more research is needed in this area. However, biological studies exposed how environmental factors strongly influence brain structure development linked to attachments and emotional management. Early ACEs shape the long-term sensitivity of the HPA axis. Dysregulation in hormone levels such as cortisol (i.e., stress hormone) and oxytocin (i.e., bonding hormone) relates to attachment insecurity and the draw toward substance use. Research has also shown how cannabis and other substances like opioids further interfere with and dysregulate social attachment systems in the brain.

This chapter also examined attachment characteristics and psychological developmental processes, such as emotional self-regulation and the IWMs. These processes mature from relational experiences between children and their caregivers and evolve into attachment styles such as secure or insecure, including anxious, avoidant and disorganized attachment. The psychological research highlighted that 1) ACEs strongly predict insecure attachments, 2) youth with insecure attachments were more likely to engage in substance use and misuse, and 3) the development of secure attachments is a protective factor against substance use and needs to be prioritized as prevention. Furthermore, trauma, attachment insecurity and cannabis use and misuse can have additive effects that increase vulnerability and risk of developing or impeding healing from psychosis at all ages. However, the research on the link between attachment and

substance use remains sparse and tinted with weaknesses, such as possible confounding factors (e.g., alcohol), unreliable measurement of attachments, and a lack of consideration for diversity and inclusion.

Third, the social factors influencing the development of attachments and cannabis use showed that the quality of parent-youth relationships may affect youth's involvement with cannabis use. However, for some researchers, this influence may be indirect and more linked to the disapproval of the youth associating with groups using cannabis than the parent's disapproval of the substance itself. The researchers further noted that using cannabis may also be a factor that contributes to degrading the parent-youth relationship. Parents' attachment style also influences the development of secure and insecure attachments between the child and the caregivers, and parents with insecure attachments may indirectly affect the youth's involvement with cannabis. However, it is less clear if parents' consumption of marijuana affects their ability to establish secure attachments with their children. The influence of siblings and friends who use substances is a significant risk factor for youth cannabis use, but, in some cases, brothers and sisters can also help prevent youth from using cannabis.

Fourth, studies suggested considering gender and sexual minorities' stigma and discrimination when developing prevention approaches because male and female youth may be affected by substance use differently. For diverse racial groups, research showed that racism may have more influence on drug use than the stigma of using drugs. More studies must consider factors such as sex, gender identity, racism and socio-economics on attachment and drug use in youth.

Fifth, despite evidence of the link between attachment and substance use, little research has been conducted on attachment-based prevention of substance use in youth. The top

prevention priority in the literature highlighted to protect children and youth from ACEs. Researchers also stressed that efforts should go toward delaying the onset of cannabis use by avoiding substance exposure and preventing the youth from associating with groups using drugs. Questions were raised about this last recommendation because this may exacerbate stigmatization and discrimination and be counterproductive to fostering attachment security to protect youth from substance use. Considering the multiple reasons youth may start using cannabis, researchers advise developing multidimensional prevention approaches and taking gender differences into account. In counselling, therapists may focus on increasing parents' sensitivity, insight and skills toward fostering secure attachments with their children. When working with families, counsellors should promote emotional regulation and that parents remain involved as much as possible in their teenagers' lives. It is essential to boost their confidence and trust, secure attachments, and adopt an authoritative parenting style while adapting to the specific temperaments of their children. Researchers also highlight the importance of pro-social environments, such as schools, and foster positive attachment toward these institutions, which must support and educate students and parents about substance use. Given the Western cultural biases of attachment theory, creating substance use prevention programs in Canada must be culturally sensitive and adapted in collaboration with Indigenous people.

Chapter 3: Discussion and Applied Practices

The final chapter of this capstone will first briefly discuss the literature review findings on attachment and cannabis use prevention in youth, including a review of the limitations and gaps found in the research. Next, it introduces a handout of practical cannabis use attachment-based prevention recommendations, informed by the literature review. Lastly, before giving some final thoughts, I reflect on what I learned from this research project.

Discussion

The literature review exposed how, for youth, attraction toward substance use like cannabis may be less related to genetic factors than linked, among other factors, to unfavourable developmental conditions, such as exposure to ACEs and intergenerational trauma. Early exposure to detrimental relational and environmental factors influences the development and long-term sensitivity of children's HPA, the brain's attachment system function and other neuropathways. It may create a vulnerable base that fosters the development of insecure attachment styles, which may snowball into further relational challenges, attachment distress and maladaptive behaviours, such as using drugs like cannabis for its soothing effect by flooding the brain's attachment and reward systems. However, we have also found some limitations in the research related to attachment and substance use and found some gaps in substance use prevention literature.

Limitations in Attachment and Substance Use Studies

Despite some attention from researchers, particularly in the last decade, studies on the influence of attachments on substance use remain sparse (Schindler & Bröning, 2015). It limits the statistical power of the research and leaves the field with many open questions (Schindler & Bröning, 2015). According to Schindler (2019), a review of cross-sectional studies established

the link between insecure attachment style and substance use; however, longitudinal studies were less conclusive, exposing that insecure attachment was mainly a risk factor for people with higher levels of insecure attachment. The author wondered if the type of substance could be a confounding factor, as they found that opioid addiction was more frequent in people with avoidant attachment, while people with alcohol use disorders had more heterogeneous attachment patterns. In their review, Schindler (2019) noted that many attachment and substance use studies focused on single variables and disregarded some contexts and possible confounds. The review highlighted the need for more differentiation among different substances, the severity of substance use, mental health comorbidities, age groups and patterns of attachments. For example, they noticed that the link between attachment and substance use was stronger for youth than adults. They added that comparing studies was challenging for their meta-analysis research because of many methodological discrepancies.

Serra et al. (2019) have also criticized the research on attachment for too often relying on explicit measures of attachment that rely on meta-cognition. They argued that attachment processes are primarily unconscious; therefore, direct measurement through questionnaires may not be suitable to characterize unconscious processes and may not be accessible through introspection. They argued that implicit attachment measurement might better measure attachments because they found no significant link between explicit attachment and substance use, such as alcohol, tobacco and cannabis. They reported that it could explain the inconsistencies found in some studies that do not always support or only weakly support the relation between attachment and substance use.

In the literature review linking attachment, substance use and youth, we found only a few mentions of concerns for diversity and inclusion and the adverse effects of discrimination, such

as gender identity or sexual orientation. Given that attachment theory has been challenged for lack of cultural universality (Choate et al., 2019), it would be necessary for future studies of the psychological factors linking youth, substance use and cannabis to have more consideration for diverse populations and account for possible differences due to race, ethnicity, cultural identity, socio-economic, gender identity, and sexual orientation.

Gaps in Attachment-based Substance Use Prevention

In their research considering addiction as an attachment disorder, Flores (2001) stated that securely attached people respected and empathized with people in distress and had a capacity for concern for others. However, the prevention literature to date does not reference educating parents and youth on the adverse effects of stigmatization of youth who use or misuse cannabis, nor the relationship between substance use and attachment needs. On the contrary, we found that some research used terms that may foster stigmatization and discrimination, such as warning against "association with deviant peers" (Mason et al., 2017, p. 3) and recommended "preventing youth from engaging with deviant peers " (Zaharakis et al., 2018, p. 145). In a qualitative study, a youth discussed issues such as being "involved with the wrong sorts of people" (McLaughlin et al., 2016, p. 1849). Such wording expresses moralistic judgments and promotes discrimination because it implies that there are right and wrong kinds of people without acknowledging the context and origins of problematic behaviours. It exposes the need to raise societal awareness about the root causes of substance use, misuse and addictions, such as trauma and ACEs. More research in the field of prevention of youth substance use is needed to answer questions such as, what are the effects of ostracising youth who use drugs? How, as a society, can we safely reconcile science that advises preventing youth from associating with friends who are using substances to reduce their risks of substance use when these same friends' substance

use may be a cry for connection and help? How may these recommendations contradict societal aspiration to develop youth's empathy and social engagement? Would developing empathy, healthy boundaries and attachment with youth and inviting people to reach out rather than stigmatize and discriminate against youth seeking, using or misusing substances be effective attachment-focused prevention? Would raising awareness and educating youth about ACEs, trauma, attachment, and mental health be protective against cannabis and other drug use by encouraging them to seek help?

Application

The long-term health and mental health risks associated with youth cannabis use drive us toward finding effective drug use prevention interventions. Even when drug use prevention may be moderately effective, any success in preventing substance use in youth is worth the cost because it reduces the risks of negative long-term life-changing consequences, which are challenging to address and such negative emotional and economic impacts on individuals, families, and society as a whole. Despite the implementation of a legal framework attempting to limit the access of cannabis to youth, the rising prevalence of cannabis use in youth exposes the need for complementary approaches to dispensing information about risks and promoting or enforcing abstinence under the legal age. In this capstone, I have set out to understand the relationship between attachments and cannabis use in youth. From this literature review, I found practical and destigmatizing attachment-based cannabis use prevention information and approaches. I created a psycho-educational handout summarizing these attachment-based cannabis use prevention recommendations (see Appendix). The psycho-educational handout contains specific prevention recommendations for families, counsellors, school settings, and the community, and each is described in the following section. I hope presenting and distributing this

psycho-educational handout to youth, parents, caregivers, counsellors, educators, and policymakers will foster different and more connecting conversations about cannabis use and contribute to cannabis use prevention in youth.

Recommendations for Families – For youth, parents, or caregivers

Based on the literature review, one approach for attachment-based youth cannabis use prevention is offering several recommendations for families. Preventing cannabis use in youth involves a comprehensive approach aimed at delaying its onset. From an attachment perspective, preventing youth cannabis use involves understanding attachment theory and style and recognizing the impact on youth relationships and communication with caregivers and others. It is beneficial that caregivers adapt their parenting styles to the youth's temperament and birth order and engage in activities that foster the development of a caregiver-child secure attachment style, including spending quality time and developing practical communication skills.

Caregivers should strive to stay involved in the youth's life, monitoring activities and changes in behaviour. They should seek information from multiple sources, such as other family members, to better understand the youth's life. An authoritative parenting style is recommended, which includes empathetic listening, balanced autonomy and monitoring, allowing for mistakes, setting clear and safe boundaries, rewarding confidence and disclosures, offering support, avoiding overreactions, and questioning the effectiveness of discipline.

Caregivers should promote a positive attitude towards, for example, by participating in school activities. Within the family, learning about the Lower-Risk Cannabis Use Guidelines (LRCUG) (Fischer et al., 2017) can help foster discussions about cannabis use and manage conflicts related to substance use. Here to Help (https://www.heretohelp.bc.ca/) and local organizations such as Foundry B.C. (https://foundrybc.ca) provide resources and information about bullying, stigma,

discrimination, mental health, and substance use for individuals and helpers. Marijuana Anonymous (https://marijuana-anonymous.org) provides resources more specific to people facing and seeking help with cannabis addiction.

Recommendations for Counsellors

Based on the literature review, another approach for attachment-based youth cannabis use prevention is recommendations for counsellors. Within a therapeutic setting, counsellors can foster attachment security with their clients by building emotional connection, respect, and trust. They may use attachment-based therapeutic approaches such as attachment-focused family therapy, emotionally focused couple therapy, and mentalization-based therapy, paying particular attention to interactions within family systems.

Counsellors can assess parent-youth interactions and caregiving skills, for instance, by recording and reviewing these interactions. They can also help caregivers understand their attachment style by exploring their childhood experiences and raising awareness of how it affects their parenting style.

Providing psychoeducation about attachment style, authoritative parenting, including communication skills (e.g., Non-Violent Communication), emotional regulation, and stress-coping strategies is another important role of counsellors. They can assess and assist victims of bullying and discrimination, treat youth and parental substance use, and provide information such as the LRCUG.

Finally, counsellors can offer culturally appropriate resources to youth, such as resources for Indigenous people.

Recommendations for Schools

Based on the literature review, a third approach for attachment-based youth cannabis use prevention is recommendations for schools. Schools should focus on education about cannabis use, harm reduction strategies, and remediation rather than taking punitive measures or promoting abstinence. They can foster a positive view of the school and make it socially engaging by proposing extracurricular activities involving parents and youth and establishing social norms that deter substance use.

Schools can provide spaces to educate youth and parents and implement educational programs about bullying, mental health, and substance use. They can offer support and resources for youth facing substance use issues at home, such as Here to Help (https://www.heretohelp.bc.ca/) and Marijuana Anonymous (https://marijuana-anonymous.org), or local resources for youth, such as Foundry B.C. (https://foundrybc.ca).

If youth and families are struggling, schools can refer them to counselling. They can also offer culturally appropriate resources for youth, such as resources for Indigenous people. Educators and administrators can learn about crisis intervention models, such as the one provided in the linked resource.

Recommendations for the Community

A final approach for attachment-based youth cannabis use prevention, based on the literature review, is recommendations for the community. Communities must develop evidence-based, culturally appropriate resources in collaboration with diverse communities, such as Indigenous people. The focus should be on creating and promoting programs and policies that help prevent and address the root causes of youth suffering. These include ACEs, trauma, intergenerational trauma, mental health issues, discrimination, and stigma against non-dominant

groups, rather than focusing mainly on behaviours such as cannabis and other drug use and misuse.

Additionally, the government must increase the awareness of information and resources, such as the LRCUG, Here to Help (https://www.heretohelp.bc.ca/), Marijuana Anonymous (https://marijuana-anonymous.org) and Foundry B.C. (https://foundrybc.ca).

Reflection on Personal Learning

My interest in protecting youth from possible life-altering effects of cannabis and drug use drove this capstone research project. This experience enhanced my comprehension of attachment theory and the correlation between early life experiences and an individual's capacity for social interaction. I learned of the dual effect of ACEs leading to insecure attachment and driving youth toward substance use, and substance use leading to isolation and discrimination, leading to more disconnection and insecure attachment. I learned of the life protective factor of developing secure attachments and some ways to foster them. I realized how attachment security and ACEs are linked to long-term life challenges because they impair the ability to relate and create relational difficulty. For example, people with avoidant traits may not seek the help they need, and people with anxious traits may burn out their helpers.

During this capstone process, many factors challenged me, such as the scarcity of specific literature on attachment and cannabis use prevention, the lack of cannabis-specific prevention research despite the legalization, and the anecdotal consideration for cultural and diversity factors in social justice.

In light of my learning in this capstone, it shocks me that many policies and governmental funding and approaches to drug issues, such as the opioid crisis in B.C., seem to

focus primarily on the medical model of treatment for addiction (i.e., after the fact) and controversial social experiment lacking evidence such as the harm reduction “safer supplies” drug distributions initiative (Yanor, 2023). I wonder if more awareness of the relationship between attachment and substance use could help focus resources toward addressing intergenerational trauma, fostering connection and social justice issues. Such understanding drives me to learn more about attachment-based counselling approaches and to advocate for more research and implementation of effective substance use prevention focusing on social connection and social justice.

Final Thoughts

While cannabis use prevention for youth is a complex and multifaceted challenge, this capstone underscores the potential life-long benefits of fostering secure attachment, including better relationships and life satisfaction and protection against the drive to consume harmful drugs in the long run. The multiple facets of youth and cannabis use leave me curious, with a desire to continue exploring this field.

This capstone project promotes prevention over cure. It exposes how research can inform and influence benevolent and responsible practices and public health policies and lead to tangible societal changes. May this capstone promote more research on the topic and drive for a more equitable society. If this capstone inspires and protects just one youth, it will have served its purpose and the work that went into its realization.

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Appendix

Attachment-Based Youth Cannabis Use Prevention Recommendations

Recommendations for Families – for youth, parents, or caregivers

- The multiple factors influencing cannabis use require a multimodal approach with the objective of delaying the onset of cannabis use as much as possible.
- Learn about attachment theory and attachment style and consider the influence of one's attachment style on relationships and communication between youth, caregivers, and others.
- Caregiver may adapt their parenting styles to the youth's temperament and birth order.
- Engage in activities that foster the development of caregivers-child secure attachment style, including spending quality time and using practical communication skills.
- Caregivers should remain involved in youths' lives (i.e., activities, monitoring, and noticing behavioural changes).
- Caregivers should seek multiple sources of information to have a more complete view of what is going on in their youth's life (e.g., mother, father, grandparents).
- Caregivers may learn about and favour an Authoritative Parenting style, which consists of
    - empathic listening,
    - learning communication skills (e.g., Non-Violent Communication),
    - finding a balance between autonomy and monitoring to mitigate the influence of peer groups,
    - allow for mistakes,
    - have clear and safe boundaries,

    - reward confidence and disclosures,
    - offer support,
    - avoid overreactions and involving friends in arguments,
    - question the use of discipline as it may not always be effective.
- Foster a positive attitude toward school by having, for example, caregivers participate in activities proposed in the school context.
- Learn about the Lower-Risk Cannabis Use Guidelines (LRCUG) (https://www.camh.ca/en/health-info/guides-and-publications/lrcug-for-youth), foster discussions about cannabis use and manage conflicts related to substance use with youth.
- Here To Help (https://www.heretohelp.bc.ca/) and Foundry B.C. (https://foundrybc.ca/) contain information and resources for oneself and others about bullying, stigma, discrimination, mental health, and substance use.
- Marijuana Anonymous (https://marijuana-anonymous.org/) provides information and resources for people facing cannabis addiction.

Recommendations for Counsellors

As attachment-base youth cannabis use preventive interventions, counsellors may:

- foster developing attachment security with their clients and within families by
    - using attachment-based therapeutic approaches such as attachment-focused family therapy, emotionally focused couple therapy, and mentalization-based therapy, and modelling, and focusing on interactions within family systems,
    - building emotional connection, respect and trust in the therapeutic relationship,
- evaluate parent-youth interactions and caregiving skills, for example, by recording and reviewing their interactions,

- assess and help caregivers gain insight into their attachment style, explore their childhood experiences, and raise awareness of the effect of their attachment style on their parenting style,
- provide psychoeducation about
    - attachment style,
    - authoritative parenting, including communication skills (e.g., Non-Violent Communication),
    - emotional regulation and stress-coping strategies,
- assess and help victims of bullying and discrimination,
- assess and treat youth and parental substance use and provide information such as the LRCUG (https://www.camh.ca/en/health-info/guides-and-publications/lrcug-for-youth),
- offer culturally appropriate resources to youth (e.g. resources for Indigenous people).

Recommendations for Schools

- Foster on remediation over punitive measures.
- Provide education about cannabis use and harm reduction strategies rather than promoting abstinence.
- Make school a socially engaging place by proposing extracurricular activities involving parents and youth and establishing social norms deterring substance use.
- Foster a positive view of school among youth.
- Provide space to educate youth and parents and implement educative programs about bullying, mental health, and substance use.

- Offer support and resources for youth facing substance use issues at home, such as Here to Help (https://www.heretohelp.bc.ca/), Foundry B.C (https://foundrybc.ca/) and Marijuana Anonymous (https://marijuana-anonymous.org/).
- Refer youth and families who struggle to counsellors.
- Offer culturally appropriate resources for youth (e.g. resources for Indigenous people).
- Educators and administrators may learn about crisis intervention models such as https://crisiscentre.bc.ca/wp/wp-content/uploads/2010/09/Preventing-Youth-Suicide-Resources-for-Schools-Reaching-Out.pdf.

Recommendations for the Community

- Offer and develop evidence-based, culturally appropriate resources in collaboration with diverse communities such as Indigenous people.
- Create and promote programs and policies focusing on addressing the cause of youth suffering, such as ACEs, trauma, intergenerational trauma, mental health, discrimination, and stigma against non-dominant groups, over consequential behaviours such as cannabis and other drug use and misuse.
- Create more promotion campaigns for the dissemination of information, such as the LRCUG (https://www.camh.ca/en/health-info/guides-and-publications/lrcug-for-youth), Here to Help (https://www.heretohelp.bc.ca/), Foundry B.C (https://foundrybc.ca/) and Marijuana Anonymous (https://marijuana-anonymous.org/).