EXPLORING ATTACHMENT, TRAUMA, AND CANNABIS USE IN PSYCHOTIC DISORDERS: A QUALITATIVE STUDY OF PATIENT AND FAMILY PERSPECTIVES

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ABSTRACT

Background: Psychotic disorders are debilitating mental illnesses that affect individuals in physical, emotional, psychological, and social ways. Both biological and environmental factors are thought to play a role in illness occurrence and severity. Previous studies suggest that insecure attachment, trauma, and cannabis use are major environmental factors contributing to the severity of psychotic illness. Despite the known vulnerabilities created by these risks, little is known about the understanding that patients and families have with respect to these risks. It remains unclear how the interplay of these risks unfolds, creates pathways of vulnerability, and whether these pathways are recognized and addressed by patients and their families. While many researchers and clinicians are aware of these problems, it seems that not all patients are, indicating a disconnect in knowledge translation between patients and healthcare providers. Research also highlights the critical role that family members play in recovery for those with psychotic disorders, making their perspectives an important tool to consider in clinical treatment. Although resources for patients and family members currently exist, recovery remains challenging, prompting the emergence of specialized clinics focused solely on psychotic disorders, such as the Early Psychosis Intervention Program (EPIP) in Saskatoon, SK. Therefore, the primary aim of this study is to qualitatively examine the understanding that patients and family members have regarding these risks in relation to their illness, and to explore the role of the EPIP clinic in their recovery.

Method: Patients and family members were recruited from the EPIP clinic at Royal University Hospital or from the Schizophrenia Society of Saskatchewan. Semi-structured qualitative interviews were conducted with patients experiencing first-episode psychosis (17) and their family members (9). Interviews were recorded, transcribed, coded, and analyzed using thematic analysis based on Braun and Clarke's six-phase framework. An inductive, reflexive, constructivist approach was utilized in the analysis.

Results: Five major themes were generated 1) Cannabis use: From early appeal to lasting harm; 2) Shifts in relationships mirror shifts in recovery; 3) When it comes to risk factors for psychosis, more is always more; 4) Clear as mud: Patients' and families' understanding of things that matter; and 5) The rocky road to recovery: From initial confusion to final healing.

The final themes reflect mixed levels of understanding regarding the risks from both patients and family members. The study suggests that those who are more aware of the risks and implement changes to address them— such as quitting cannabis, developing stable and trustworthy relationships, and adopting a trauma-informed approach — seem to recover better than those who do not. Overall, the current study reflects that the literature might not always accurately translate into the lives of those affected, highlighting a need for clinical steps to address this gap in knowledge translation. Furthermore, the unanimous success of the EPIP clinic is clearly evident in all the patients and family members interviewed.

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I would like to extend my heartfelt thanks to my supervisor, Dr. Camelia Adams, for her unwavering support and always pushing me to excel in all aspects of my academic career. I will always remember her kindness, and admire her expertise. I truly would not be the student, researcher, or person I am today without her. I would also like to express my gratitude to my supervisor, Dr. Robert Laprairie. I am thankful for being included in his lab meetings, and for the opportunities he provided to grow as a researcher. His academic knowledge and kindness have guided me throughout my thesis, and will continue to guide me in my future academic endeavours. I would like to thank the entirety of my research advisory committee including Dr. Stephen Adams, Dr. Lloyd Balbuena, Dr. Linda McMullen, and Dr. Lachlan McWilliams. Their feedback helped shaped the work of this thesis, and deepened my understanding of this topic. I am also deeply thankful to my parents Brad and Jeanette, my sister Miranda, and my boyfriend Aladin for all their support. I feel privileged to be surrounded by such amazing people who encourage me to pursue my goals, and stand by my side throughout all aspects of life. Thank you for pushing me to do my best!

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LIST OF ABBREVIATIONS

2-AG= 2- arachidonylglycerol

AEA= Anandamide

APA= American Psychiatric Association

CB1R= Cannabinoid 1 Receptor

CB2R= Cannabinoid 2 Receptor

CBD= Cannabidiol

CMHN= Community Mental Health Nurse

DSM = Diagnostic and Statistical Manual of Mental Disorders

DSM-5 = Fifth Edition

DSM-3 = Third Edition

ECS= Endocannabinoid System

EPIP= Early Psychosis Intervention Program

PTSD= Post-Traumatic-Stress Disorder

REB= Research Ethics Board

THC= Delta-9-tetrahydrocannabinol

WWI= World War I

WWII= World War II

REFLEXIVITY STATEMENT

In qualitative research, it is important to acknowledge the role of the researcher, as data analysis and subsequent results largely depend on the researcher's perspective. I hold a constructivist approach, believing that data only hold value when they are interpreted. This means that one set of data can hold many different meanings. I admire the beauty of qualitative research for this very reason, as it reflects our diverse opinions, viewpoints, and approaches to life. Analyzing data this way accurately represents how we live and absorb knowledge in the real world. I think that hearing the stories and first-hand perspectives of those with lived experiences is one of the most powerful forms of knowledge. With that being said, there are a few things to note about myself, the researcher, to establish reflexivity in this research.

My name is Samantha. I was born a biological female, and also identify as female. I am heterosexual, and I am currently 26 years old. I was born in Canada to an upper-middle-class Caucasian family, and I have lived in a prairie city for my entire life. I acknowledge the privilege I have of being born in a beautiful, safe, first world country, to a loving and supportive family. This privilege includes the academic opportunities I have had, and my ability to pursue a university career, including a BSc. Hon. Degree that was awarded in 2021, and the completion of this master's thesis. I recognize that a university education is an honour, yet a potential bias in my research, since the backgrounds of those interviewed do not always match mine. I pride myself in holding empathy, compassion, and understanding for those who have led, and currently lead a different life than me. However, it is important to note that I have never experienced some of the topics discussed firsthand.

Despite this, I have faced adversity in my life. I have had unhealthy relationships, personal mental health struggles, and a period in my life where I was uncertain about my future. This is one of the reasons that I wanted to do research in psychiatry, since I feel that mental health is such an important topic, with many unknowns. The stability in my relationships now— with two supportive parents, a fantastic sister, and wonderful boyfriend— have been the key to beneficial things in my life. This topic was frequently discussed in interviews, and something that personally resonates with me. While this may introduce bias in my viewpoints regarding relationships/attachments, I believe it serves as a strength, and enables me to connect with participants on an emotional level to understand the substantial effects that their relationships have on their lives. It was fulfilling to hear that many of the strained relationships had repaired, and most were living happy and stable lives.

As I am not a clinician and do not work with patients first hand, my perspectives and personal background may shed new light on a population that is often unheard, or only viewed from a clinical perspective. Therefore, as you read through the work of this thesis, please keep these considerations in mind.

PREAMBLE

Mental health is a growing concern in Canada and around the world, and it is important to acknowledge its significance. In order for society to function optimally, the people who make up the society should be healthy. Therefore, when individuals struggle with health concerns, particularly mental health issues, it affects everyone. Psychosis is largely considered one of the more difficult mental illnesses to manage, since aspects of reality are lost, social skills are hindered, and cognitive symptoms are sometimes quite severe. Although the number of people who suffer from psychotic disorders is relatively small compared to other forms of mental illness, the impact on the quality of the life, and the resources required to support someone in a psychotic episode, are substantial. While medications can help with symptoms to some extent, clinicians observe that patients continue to struggle, indicating that there is more to the story. This observation, along with an extensive review of previous literature, is how the three environmental risk factors of insecure attachment, trauma, and cannabis use were chosen to be investigated.

It is established that these three risks have a role in illness and recovery, but it is less clear what patients understand about these risks. There appears to be disconnect, since patients continue to struggle with their illness because of these risks despite advice from clinicians. For instance, a patient might persist in using cannabis and engaging in harmful relationships, despite their doctor's recommendations. Therefore, this research aims to utilize a qualitative approach through semi-structured interviews to hear patients' stories directly, as it is crucial to understand what is actually translating from the literature, and our hospitals. Research is meaningful only if those affected benefit from it. Thus, the first objective of this study is to explore the common understanding of these risks in relation to their illness. Clinicians have also observed that those who have supportive families who are involved in their recovery tend to do better than those who do not. This, combined with the known role of insecure attachment, makes the perspectives of family members an arguably equally important aspect to recovery, which has had limited qualitative investigation to date.

Another objective of this study is to investigate the risks of insecure attachment, trauma, and cannabis use in relation to each other. Both qualitative and quantitative research on all three risk factors combined is limited, making this a novel area of investigation. Finally, this research also seeks to explore the relevance of a specialized early intervention psychosis clinic (EPIP) that is relatively new to the province. These objectives combined hope to shed light on new clinical approaches that may increase treatment success in patients. We hope this will help improve the lives of those who suffer with psychotic disorders, as well as their families.

This thesis will begin with a brief introduction to the background of the three risk factors being discussed, attachment, trauma, and cannabis use, as well as an investigation into psychotic disorders. The second chapter will discuss the methodology used in this qualitative research, including Braun and Clarke’s six-phase framework for thematic analysis. Then, subsequent chapters will provide an in-depth analysis, including descriptions of themes and relevant interpretations generated from these themes. Finally, the thesis will conclude with a discussion of clinical implications, strengths and limitations, and recommendations for future research.

CHAPTER 1: INTRODUCTION

1.1 Background

Psychotic disorders are defined as "abnormalities in *one or more* of the following five domains: delusions, hallucinations, disorganized thinking (speech), grossly disorganized or abnormal motor behaviour (including catatonia), and negative symptoms."[1] In those with psychotic disorders, individuals often go through periods of time where symptoms are worse, which is referred to as an "episode."[2] While psychosis affects a small percentage of the population, individuals suffering often face substantial challenges such as high rates of homelessness and unemployment,[3,4] a reduced life expectancy often due to increased suicide rates,[1,5–7] and an overall diminished quality of life.[7] Individuals with psychotic disorders frequently face stigma and shame, creating further barriers to recovery.[8–10] Furthermore, psychotic disorders have a significant economic cost, with estimates as high as two billion dollars per year in Canada.[11] These striking impacts highlight the need to help individuals with psychotic disorders not only to improve their quality of life, but to also help society as a whole.

Psychotic disorders are thought to be caused due to a mixture of genetic predispositions and environmental risks.[12–14] Some of the known environmental risks include insecure attachment,[15] psychological trauma,[16] and cannabis use.[17] Insecure attachment refers to those who have difficulties in forming close trusting relationships or relying on others, and often have disturbed views of the self.[18,19] Insecure attachment has been correlated with several mental health disorders, and has been shown to make psychiatric treatment success more difficult.[20] Psychological trauma, another key risk factor, similarly has lasting effects on individuals, creating lasting biological, emotional, and interpersonal effects, which once again hinders one's recovery.[21–23] Finally, cannabis use has been implicated in worsening psychotic disorders, particularly cannabis that contains high THC.[24] However, it is still relatively unclear what the exact role of cannabis is, and its role warrants further investigation.

So, it is clear that the study of psychotic disorders is complex, with many factors influencing illness occurrence and severity. These complexities have prompted specialized treatment clinics to emerge that address treatment for psychotic disorders using a biopsychosocial model. These programs consider how these risks translate to real life and subsequently treat patients through different programs and educational models, often including patients' families, utilizing a team-based approach. One of these treatment centres is the Early Psychosis Intervention Program in Saskatoon.

However, despite the emergence of these programs and the known danger of these risks, few studies currently exist that consider all three risk factors in relation to each other, and how they may connect and interrelate to influence the psychotic experiences of individuals. Moreover, these risks do not exist independently of a person, who has a variety of experiences and

perspectives themselves. Therefore, these first-hand perspectives of the patients themselves are also valuable, and can perhaps give insights into why these risks exist, or how these risks are used to help or harm their illness. These considerations help form the main aim of this study which sets out to explore the patients' perspectives regarding these three risks, and how the perception of these risks may connect to influence one's psychotic illness. To expand this aim, the perspectives of family members have also been considered, which have been shown in previous research to be either a critical tool, or a potential detriment, to recovery.[25,26]

To fulfill these goals, patients and family members were interviewed in a semi-structured qualitative manner. These interviews were analyzed according to Braun and Clarke's six phase framework,[27] where themes were formed to capture the important patterns within the participants' stories. These themes are examined, interpreted, and discussed extensively in the following chapters. It is the hope that these findings will aid in researchers' and clinicians' understandings of the experiences and perceptions surrounding psychotic illness, and how these may play beneficial or detrimental roles in recovery. This research may also help shed light on existing gaps in knowledge, potentially influencing improved treatment methods and knowledge translation strategies.

This thesis begins with a detailed discussion of attachment, which can be seen in the following section 1.2.

1.2 Attachment

1.2.1 Origins of Attachment

Attachment theory was first formally characterized by the joint work of John Bowlby and Mary Ainsworth. John Bowlby, a British psychiatrist, introduced the concept of attachment in *The Nature of the Child's Tie to his Mother (1958),*[28] where he described the essential bond or "attachment" formed between an infant and their mother in the early stages of life. Bowlby stressed the distinction between physiological dependence (the need to meet basic needs such as food), and psychological attachment, urging that they be viewed as separate but equally important roles for an infant. This paper was shortly followed by two other articles authored by Bowlby: *Separation Anxiety (1959),*[29] and *Grief and Mourning in Infancy and Early Childhood (1969).*[30] These papers elaborated on the behaviours that are seen in the absence of an attachment figure, which could be due to adverse family experiences, or the death of an attachment figure without adequate replacement.

Following inspiration from Bowlby's initial publications on the theories of infant attachment, Mary Ainsworth sought to test these theories in a real-world setting. This led to the pivotal 1955 Uganda study.[31] In this study, Ainsworth followed 26 families in Uganda with infants aged 0-24 months, and observed the interactions between the caregiver and the child. This study highlighted the correlation between the mother's form of care and the behaviours of the child. For instance, children who experienced more support, sensitivity, and love from their mother tended to cry less, and seemed more content in their environment. Conversely, children who received less or negative attention cried more, even with assurance from their mother. These findings were later confirmed in "The Strange Situation" experiment,[32] the first laboratory tested

study involving infant attachment. This study involved a series of scenarios with a mother and infant, including leaving the infant with a stranger, and leaving the infant completely alone. Similar to the observational studies, infants who were in the presence of their mother felt more comfortable and secure to play and explore, versus being alone or in the presence of a stranger. While these results were expected, interesting behaviours of the infants were also documented upon reunion with their mother, which was previously theorized by Bowlby in 1959.[29] This shortly led to the original classifications of attachment including secure attachment, insecure avoidant attachment, and insecure resistant attachment in 1970.[33]

Securely attached infants were those who were justifiably upset when their mother left, but happy upon reuniting. When met with a stranger they were hesitant when alone but curious when their mother was present. These infants were comfortable to explore their environment, and sought comfort from their mother when in distress. About 70% of the infants displayed this form of attachment. Infants with insecure avoidant attachment felt no anxiety when separated from their mother. They did not cry or become distressed, and did not seek attention or reassurance from their mother when they returned. These infants interacted minimally with the stranger when presented, and behaved indifferently to being alone. About 15% of infants displayed this form of attachment. Lastly, infants with insecure ambivalent/resistant attachment displayed extreme and excessive levels of distress when they were separated from their mother. When their mother returned, they were often inconsolable or even displayed anger or rejection towards their mother. These children were scared of a stranger when presented, and were not comfortable to explore their environment, even when their mother was present. These behaviours were present in the remaining 15% of infants.[34,35]

1.2.2 Attachment in Adulthood

Bowlby and Ainsworth set the stage for the theory of attachments and demonstrated their significance and reliability in infants. But, does this relate to adulthood, and the relationships that come later in life? Hazan and Shaver aimed to answer this question in their revolutionary 1987 paper, *Romantic Love Conceptualized as an Attachment Proces.*[36] In this study, several hypotheses surrounding adult love and attachment processes were examined. These included the frequencies of the different attachment styles in adulthood, and the type of experiences that people with different attachment styles have in romantic relationships. It also aimed to determine how people relate their attachments style to their views on love and trust, how these attachments compare to previous childhood attachments, and if insecurely attached individuals were more or less lonely that securely attached individuals. The results in adults, as expected, mirrored the work of Ainsworth in several ways. Securely attached individuals composed the majority of the sample at 56%, and reported less subjective loneliness than those with insecure attachment. Furthermore, the adult attachment style had a strong influence on how individuals approached romantic relationships, and viewed their own capacity for love and worthiness. This study also provided a model to classify adult attachment styles, which includes secure attachment, anxious attachment, and avoidant attachment. This is once again similar to Ainsworth's model of attachment in infants.

Shortly after the adult model of attachment was created by Hazan and Shaver, an additional four category model **(see Figure 1.1.)** was coined by Bartholomew in 1990.[37] This model specifically focuses on distinguishing the two forms of avoidant attachment in adults, proposing that this style could either be fearful or dismissing depending on how one views oneself. This

classification also determines how dependent one is on others for fulfillment. This model highlights the importance of the relationship with the self, and shows that those who do not feel deserving of love tend to have an insecure attachment style, which later negatively affects their romantic relationships. Overall, those with insecure attachment types (including preoccupied, dismissing, or fearful), tend to have a hard time forming healthy, meaningful, and supportive relationships throughout adulthood.

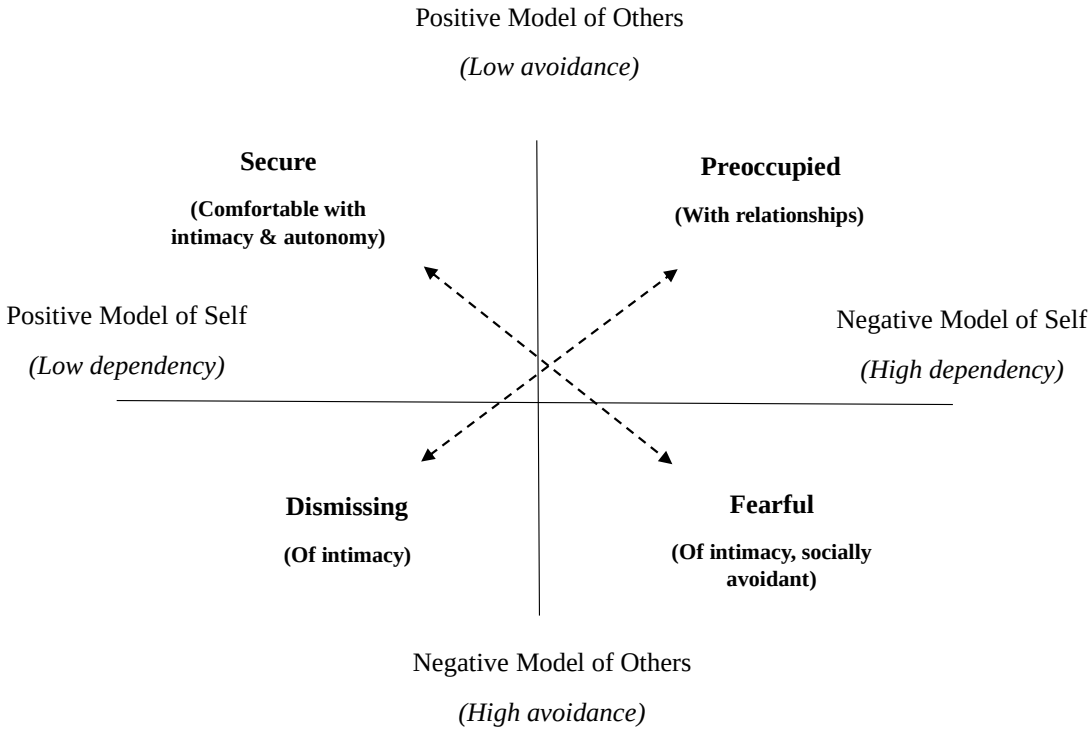

Figure 1.1.

Bartholomew's Four-Factor Model of Adult Attachment (adapted from Bartholomew 1990)[37]

The question of whether attachment stays consistent from infancy to adulthood is still under debate. Various meta-analyses and longitudinal studies have investigated this topic, but the results have been inconsistent.[38–41] However, since the focus of this research is in adults, the consistency of attachment from youth through adulthood is not necessarily relevant. For those interested in this topic, a more in-depth examination can be found in the meta-analyses referenced.

1.2.3 Modern Views of Attachment

Current understanding of attachment utilizes the two-dimensional model developed by Clark and Shaver in 1998 **(Figure 1.2.).**[42] This model examines two main characteristics: attachment anxiety, and attachment avoidance. It is thought that those with secure attachment have low attachment avoidance, and low attachment anxiety. This causes them to form healthier and more trusting relationships with others in adulthood,[18] have improved resilience,[43] self worth,[19] and

agreeableness/success in clinical treatment.[44] Insecure attachment, which includes preoccupied, dismissing avoidant, and fearful avoidant, generally have a mixture of high and low levels of attachment anxiety and avoidance, depending on the type. These types of attachments make adult relationships more difficult,[18] sometimes cause a disturbance in the view of the self,[19] and has been correlated to occur with a multitude of mental health disorders, including psychosis.[45,46] Insecure attachment has also been shown to make psychiatric treatment more difficult, due to the challenges clinicians face in forming a close trusting relationship with their patient, and the inability of the patient to rely on helpful supports.[20,47]

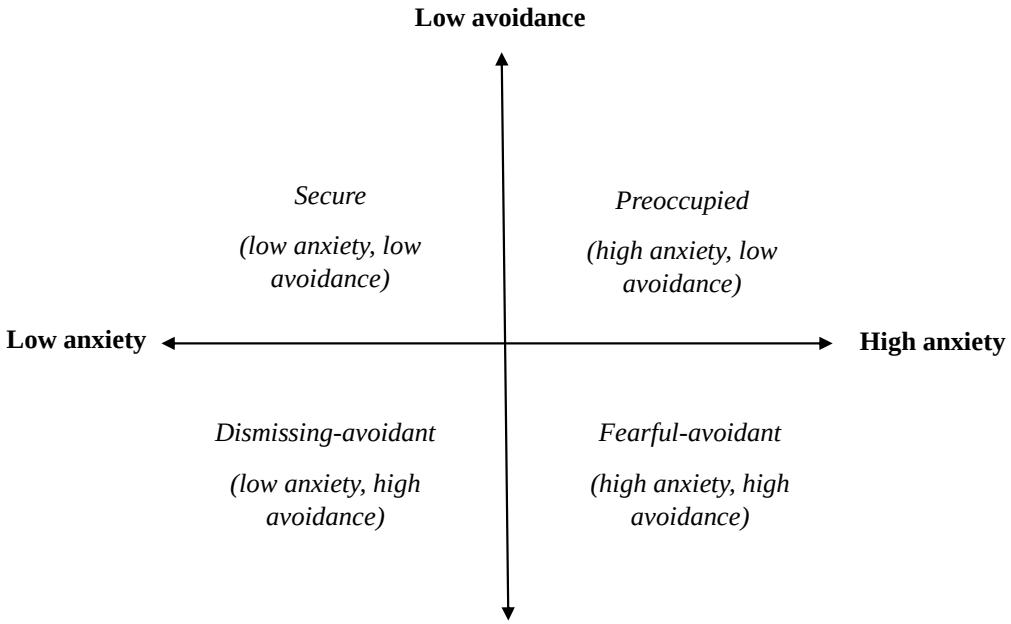

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Figure 1.2.

Two-dimensional model of attachment by Clark and Shaver (adapted from Fraley et al.)[48]

The scope of this research does not focus on specific types of insecure attachments, and is generalized to secure or insecure categories only. It should be noted that when insecure attachment is referenced later in this thesis, it could include either preoccupied, dismissing avoidant, or fearful avoidant/disorganized. Distinctions will not be made within the category of insecure attachment, since this was not evaluated. For a summary of the different attachment styles as they are currently characterized, **please see Table 1.1.**

Table 1.1.

Summary of Modern Attachment Styles

Attachment Category	Specific Types and Qualities
Secure (best)	• Low avoidance, low anxiety • Positive view of the self • Easier time forming healthy relationships- comfortable with others, not dependent on others
Insecure	Preoccupied • Low avoidance, high anxiety • Negative view of self, dependent on others • Sense of self derived from opinions and validation of others, difficulty in relationships, tend to be clingy
	Dismissing Avoidant • High avoidance, low anxiety • Positive view of the self, not dependent on others • Intimacy and forming relationships are difficult, self-sufficient, do not see value in relationships
	Fearful Avoidant/Disorganized • High avoidance, high anxiety • Negative view of the self, fearful yet dependent on others • Intimacy and forming relationships are difficult, negative self talk often present, scared of closeness and relationships in general but yet desire a sense of closeness • Arguably the most harmful form of attachment due to its contradictions

1.3 Trauma

Trauma is defined by the APA as:

> An emotional response to a terrible event like an accident, crime, natural disaster, physical or emotional abuse, neglect, experiencing or witnessing violence, death of a loved one, war, and more. Immediately after the event, shock and denial are typical. Longer term reactions include unpredictable emotions, flashbacks, strained relationships, and even physical symptoms like headaches or nausea.[49]

Trauma is an individual experience. For some, an event may have minimal effects, while for others, it may cause lasting trauma, resulting in clinical disorders such as post-traumatic-stress disorder (PTSD). As of 2021, Statistics Canada has identified that over two-thirds (64%) of people in Canada report at least one traumatic event throughout their lifetime. Among these, 21% indicated symptoms of possible PTSD.[50]

Therefore, trauma can broadly encompass both physical traumas, and psychological/emotional traumas, as well as sexual abuse or physical/emotional neglect. For the purposes of this research, a reference of trauma does not necessarily mean a clinical diagnosis of PTSD, but refers to a lasting emotional event that resulted in psychological damage, as reported by the patient or family member.

1.3.1 Psychological/Emotional Trauma

The current understanding of psychological trauma is a relatively new concept. Psychological trauma has been recorded as far back as 1900 BC,[51] but it was not recognized to be what it is today. Throughout history, experiences that are now known as PTSD were recorded under a variety of names. Terms such as "soldier's heart," "shell shock," or "battle fatigue" were coined following World War I (WWI) and World War II (WWII). Individuals exhibiting symptoms were sometimes given time off from war, as it was thought to be due to potential homesickness.[51] Similarly, after the Vietnam war in the 1970's, seemingly healthy soldiers presented with symptoms of "stress" even after leaving the war environment. Previously, it was believed that these symptoms did not occur in healthy individuals, only to those with a familial history of mental illness or genetic predispositions. The discovery that healthy soldiers also experienced these symptoms led to a change in perspective regarding stressful or devastating effects. The previous attitudes of blame, and that those who suffer are weak, shifted into a place of help and healing for those suffering from extreme psychological distress. This is a substantial change from the previous views that the problem stems from within an individual, which often resulted in those with PTSD being institutionalized.[52] Following this shift, group therapy and talk therapy were introduced to soldiers suffering, and was met with success.[53] Ultimately, this led to the definition of Post Traumatic Stress Disorder (PTSD) being added to the Diagnostic and Statistical Manual of Mental Disorders Third Edition (DSM-3) in the 1980's, marking the first step towards our current definition of psychological trauma.[54]

Today, psychological trauma is understood to be caused by a multitude of experiences, including war, natural disasters, life threatening events, childhood or adulthood abuse, neglect, violence, and assault.[55] This event can be a single occurrence (such as an assault), or could have occurred over a longer period of time (such as protracted childhood abuse). Currently psychological trauma it is characterized as a type of event(s) that (is) are:

> Emotionally shocking or horrifying, which threaten to actually involve death(s) or a violation of bodily integrity (such as sexual violation or torture) or that render the affected person(s) helpless to prevent or stop the resultant psychological and physical harm.[55]

Psychological trauma is very difficult to recover from due to the differing personal effects it has on individuals. Psychological trauma also distorts the views of the self, making it very difficult to treat effectively. This leads to lasting effects, and a variety of physical and mental health manifestations later in life. [56]

1.3.2 Effects of Psychological Trauma

Although the wounds cannot always be seen in those who have experienced neglect, mental, sexual and/or emotional abuse, they significantly impact individuals in a variety of ways.

1.3.2.1 Physically/Biologically

Psychological trauma can cause numerous neurobiological changes that are critical in determining the likelihood of many health difficulties in adulthood.[21,57] A meta-analysis consisting of 27 articles, conducted by Rinne-Albers et al. (2013), highlighted the important physical changes that occur following exposure to psychological trauma in adolescence or young adulthood. They observed a reduction in the corpus callosum, which is involved in transferring information across the brain to process sensory, motor, and high-level cognitive signals.[58] This could explain why certain PTSD symptoms occur, such as dissociation or impaired comprehension and processing.[59] Furthermore, a decrease in hippocampal volume was seen in those who experienced trauma.[60] The hippocampus is a critical part of the limbic system in the brain, and is involved in various aspects of memory including declarative memory, working memory, and memory for episodic events including events that are traumatic or stressful. Additionally, the hippocampus plays an important role in regulating stress.[61] Therefore, following exposure to events that are traumatic in nature, a critical region of the brain seems to be reduced, which is why symptoms of PTSD may occur, making the traumatic event very difficult to manage. These findings have been reflected in several other studies, including another meta-analysis by Li et al. (2014), which similarly found a reduction in grey matter in several regions of the brain, including the hippocampus, occipital lobe, and medial frontal gyrus.[62]

1.3.2.2 Psychologically/Emotionally

Psychological trauma has also been linked to a multitude of psychiatric disorders, including psychosis. It is thought that the likelihood of experiencing a psychotic disorder following trauma in childhood is three times higher than for those who did not have this experience, and the illness is more severe when it occurs.[63] For an extensive discussion of trauma and psychosis specifically, please see **pages 18-19** of this thesis. In addition to psychosis, psychological trauma has been linked to every other form of mental illness that can develop later in life, making it reasonable to say that psychological trauma and emotional abuse significantly influence later mental illness.[64] Additional qualitative research regarding psychological trauma has also been done, where participants described a loss of confidence, coping abilities, and decrease in mood which subsequently led to feelings of hopelessness and uselessness.[22] Overall quality of life for those affected by psychological trauma significantly goes down due to these consequences, in addition to increased risk of suffering from mental impairments, PTSD, anxiety, depression, and other mental illnesses.[65]

1.3.2.3 Socially/Interpersonally.

Finally, psychological trauma can significantly influence how individuals relate to others, and develop or maintain attachments and connections over time. Trauma can cause a decreased capacity to trust[23,66] and have intimacy with others,[67] leading to numerous interpersonal difficulties, including a lack of romantic relationships, reduction of friendships, and potential social isolation. This is particularly harmful, as healthy relationships and connections have been shown to be an important tool in healing for victims of previous trauma.[68–70] Trauma has also been shown to have various roles with insecure attachment. For instance, insecure attachment has been shown to mediate trauma and depression,[71] trauma and borderline personality disorder,[72] and trauma and paranoia in psychosis.[73] Both insecure attachment and psychological trauma negatively affect close relationships and mental health individually in a variety of ways,

and interact within each other to worsen psychiatric illness severity. Therefore, it can be said that the presence of psychological trauma (both with and without insecure attachment), has a huge impact on close relationships. This ultimately determines how individuals relate to others throughout their life, and how successful their healing journey might be.

1.3.3 Clinical Relevance of Trauma

Psychological trauma influences a variety of mental health disorders, making it clinically relevant, and providing possible factors that may be harming a patient. A qualitative study by Campodonico et al. (2022), examining trauma specifically in psychosis, showed that patients who were unable to discuss their trauma, either in healthcare or otherwise, had worse rates of psychosis and mental health in general, and also formed a highly negative view of themselves.[22]. Thought to be built on five core values — safety, trustworthiness, choice, collaboration, and empowerment[74] — trauma-informed care is an effective tool in treating patients since the later 1990's-early 2000's.[75–77] Following a meta-analysis by Reeves (2015), several similar themes were described to be essential in aiding trauma-informed care. First, a patient must be effectively screened to determine if potential trauma exists. This should be done for all patients, not just those who disclose a history of trauma. Next, a trusting supportive relationship must be established between clinician and patient. This relates to the idea of insecure attachment, which also must be considered in establishing therapeutic relationship, since it may make it difficult to establish a secure relationship. Once this environment of trust is established, a patient will feel more comfortable opening up about their experiences. Following this, efforts should be made in therapy to reduce the amount of stress a patient has when discussing their experiences, while also establishing maximum patient autonomy. This includes continually asking for consent, having flexibility and understanding with patients, and avoiding scenarios that may not be necessary for patient recovery. Finally, efforts should be made to streamline the healthcare a patient receives by reducing the total number of locations/clinicians they need to have, which facilitates patient engagement.[78] These simple guidelines may make the difference between a patient who recovers effectively and is successful in treatment, versus one who has difficulty adhering to treatment protocols. Ultimately, trauma-informed care aids clinicians in several other areas of psychiatric practice, and for some, addressing previous trauma may be the key to recovery. This makes trauma extremely relevant to not only this research, but to health care professionals in general.

1.4 Cannabis

1.4.1 What is Cannabis?

1.4.1.1 History

Cannabis has been used throughout history for thousands of years, dating back to Neolithic times, approximately 12,000 years ago in Central Asia.[79] Historically, one of its main purposes was its fibrous nature in the textile industry (now known as hemp), and its use in creating clothes and other items for Chinese people before the use of cotton.[79] Cannabis was also historically used as a food source, with grains and oils produced from the seeds, medicinally, for use in natural remedies, and as a dissociation agent.[59]. These uses frequently utilized the entire plant including the leaves and roots, as opposed to just the flower or bud.[79] The medicinal use of cannabis started

to increase and spread throughout the world in the later 19th century, and was even used among famous figures such as Queen Victoria, who reportedly used the plant for pain in menstruation.[80]

1.4.1.2 Biological Makeup and Effects

Cannabis as we know today, which is also referred to as marijuana, weed, dope, pot, grass, Mary Jane, bud, ganja, hash, etc. is a plant belonging to the family *Cannabaceae*, genus *Cannabis*, with subspecies sometimes including *Cannabis sativa* and *Cannabis indica*.[81] Cannabis naturally continues to grow in tropical regions,[82] but it is widely cultivated in artificial environments worldwide. Cannabis is now known to have hundreds of individual constituents,[83] but the first constituent that was isolated in pure form was not described until the late 1800s. Cannabinol was the first part of the plant to be completely isolated in pure form in 1899[84] followed by cannabidiol (CBD) in 1963,[85] and delta-9-tetrahydrocannabinol (THC) shortly after in 1964 **(see Figure 1.3. for the chemical structure of CBD/THC).**[86] CBD and THC are the two most abundant and widely known chemical constituents of cannabis, and are generally considered when describing the makeup of cannabis for consumers.[87]

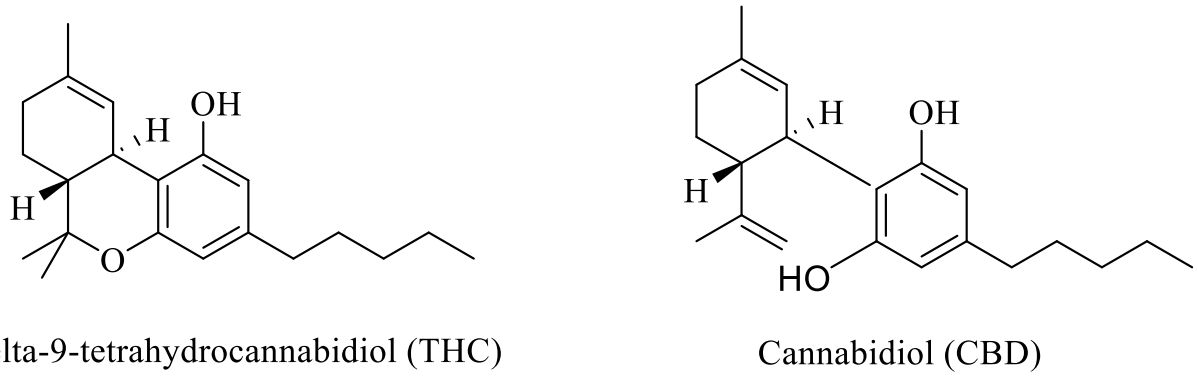

Figure 1.3.

Chemical structure of THC and CBD (created with ChemDraw Prime)

CBD is a non-psychotropic chemical, whereas THC is psychotropic. THC is considered the active ingredient which contributes to the user feeling "high," and is the same compound responsible for the dissociative effects recorded dating back thousands of years.[88,89] Short term effects of cannabis use include euphoria or a "high," relaxation, and heightened senses. However, it can also have negative effects such as confusion, sleepiness, impaired concentration, impaired memory, impaired reaction time, and anxiety.[90] Long term use of cannabis has also been linked to a reduction in gray matter volume in the brain,[91] prolonged memory deficits,[92] problems with inhibition and impulsivity,[92] and psychiatric illness, primarily those of psychotic nature.[24,93] Contributing factors to these problems include a variety of variables, including initial age of use,[94] frequency and amount of use,[95] and concentration (ratio of THC/CBD).[96] Interestingly, CBD has been shown to have opposing effects compared to THC, and can even play a role in reducing the effects of THC through reducing anxiety, reducing cognitive deficits, and reducing psychiatric effects.[96] Unfortunately due to its non-psychotropic nature, CBD is often scarcely

contained in cannabis that users wish to consume, especially in the last 20 years, in which we have seen a significant increase in THC concentration **(Figure 1.4.).**[96]

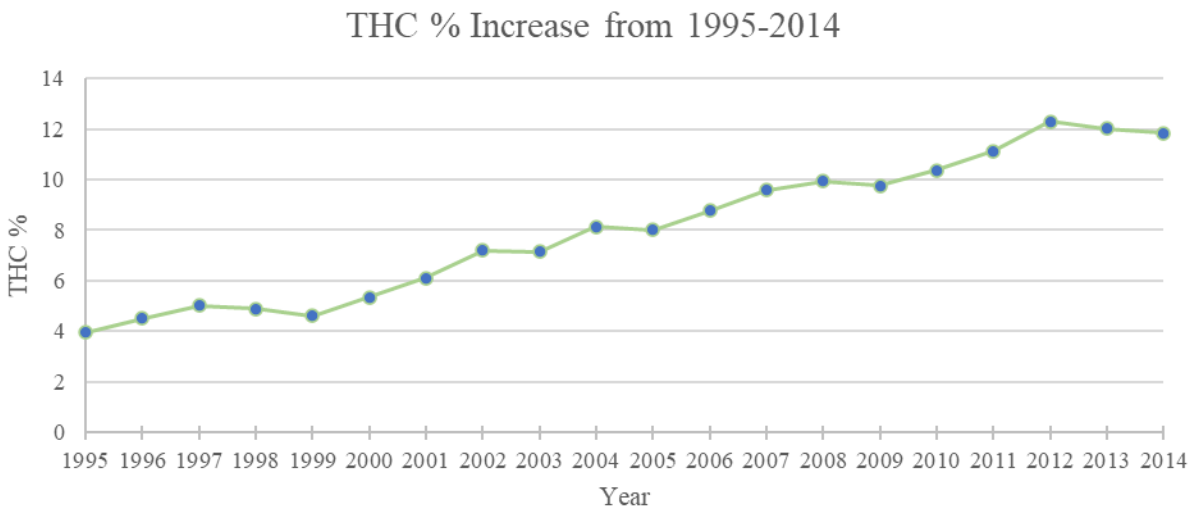

Figure 1.4.

Percentage increase in THC from 1995-2014 (adapted from ElSohly et al. 2016).[96]

1.4.1.3 Endocannabinoid System

In a human, cannabis acts through a neuromodulatory system known as the endocannabinoid system (ECS), which includes various receptors, enzymes, and endogenous cannabinoids that the brain naturally produces.[97] The characterization of this system began with the discovery of specific binding sites of THC, being the cannabinoid 1 receptor (CB1R), found in 1990,[98] and the cannabinoid 2 receptor (CB2R), found in 1993.[99] Shortly after, this led to the discovery of endogenous cannabinoids, arachidonic acid or anandamide (AEA),[100] and 2-arachidonylglycerol (2-AG).[101] While an extensive overview of the endocannabinoid system will not be provided for the purposes of this thesis it is important to note that these receptors aid in a variety of roles such as neurotransmitter signalling (which can be involved in cognition, memory, pain, etc.), and regulatory functions in vascular, metabolic, and immune systems.[83] These receptors are expressed not only throughout the brain, but also throughout the entire body, including the liver, bones, and uterus to name a few **(Figure 1.5.)**.[102] Since this critical system is a relatively new discovery, there is still much unknown about its role and function. Consequently, the use of cannabis, which directly influences binds and interacts with this system, may have a huge range of physiological effects not only on the brain, but also on the peripheral body systems.

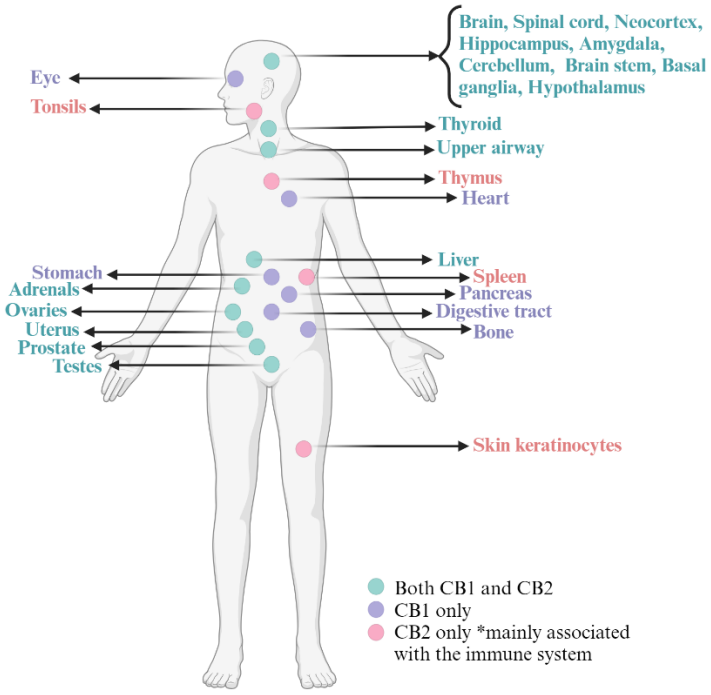

Figure 1.5.

Distribution of CB1R and CB2R throughout the body (adapted from Reddy et al., 2019).[103] *Created with BioRender.com.*

1.4.2 Cannabis Use

1.4.2.1 Methods of Consumption

Cannabis can come in a variety of different forms, including the standard dried flower or "bud," edible products, vape pens/cartridges, beverages, oils/extracts, hashish (the resin of the cannabis plant, highly concentrated), and topical treatments. The most common method of use according to a Canadian Cannabis Survey conducted in 2022 was smoking, with 70% of those surveyed using it as a method of consumption at least once within the past 12 months. The other common methods include: eating in food (52%), vaporizing using a vape pen or e-cigarette (31%), ingesting oil (18%), drinking 16%), vaporizing using a vaporizer (10%), applying to skin (7%) and dabbing (6%).[104] It should be noted that the participants evaluated could indicate more than one method of consumption.

1.4.2.2 Potential Uses

Cannabis has a variety of roles, including potential therapeutic utilizations, and social aspects. It is thought that as many as 43% of people aged 15 or older have tried cannabis at least once in their lifetime, making the use of cannabis extremely relevant in healthcare- for both helpful and

harmful reasons.[105] It is estimated that one's sociability increases as much as 68.4% during use, and their happiness increases as much as 16.1%.[106] Considering the bonding potential that cannabis has for users, both by the feelings it elicits, as well as the social aspect of smoking, friends often play an important role in cannabis initiation and continued use.[107] Cannabis can also be used for various therapeutic or medicinal purposes. For instance, the use of cannabis has been approved for use in neuropathic pain[108,109] as well as for use as an antiemetic in chemotherapy patients.[109,110] Cannabis has also been tested for use in those with multiple sclerosis where patients with worse impairments seem to benefit better,[111] for use in epilepsy,[112] for use in gaining weight for patients with anorexia,[113] as well as for use in sleep problems due to both sleep disorders and PTSD.[114] Considering that cannabis has only recently been characterized within the last few decades and the research into cannabis is growing rapidly, it is clear why so many patients turn to cannabis for a variety of uses. Despite the potential benefits, less than 10% of cannabis users consume it solely for medicinal purposes.[115] This makes the social or recreational use of cannabis, as well as self medicating uses, strikingly high. Therefore, marijuana use might not always be justified therapeutically if it is not evaluated clinically. This is especially apparent when cannabis is used for mental health concerns, which will be described in the following section.

1.4.2.3 Mental Health

Cannabis is used for a variety of mental health concerns. As mentioned previously, some patients receive prescriptions for cannabis for their mental health, while others use it to self medicate. Cannabis can often serve the role of a double-edged sword when used for this purpose. In anxiety, cannabis is commonly used to successfully handle the symptoms. However, the long-term effectiveness of cannabis for anxiety is relatively unclear, and it might actually contribute to increasing the risk of developing a long-lasting anxiety disorder.[116] While some studies support the use of cannabis for anxiolytic uses, others suggest that cannabis use actually increases anxiety.[117] Similarly, many users enjoy cannabis to ease their depressive symptoms, but it is also relatively unclear if depressive symptoms benefit from cannabis use.[118] In PTSD, as mentioned, cannabis has been successfully used to aid in sleep. However, it is unclear if cannabis improved, or worsened the PTSD symptoms themselves in users.[119] Finally, cannabis has consistently been linked to worsening psychotic symptoms,[17,120] but even this topic is not entirely clear, as psychosis develops due a complex combination of risks,[121] and the cause-and-effect relationships between risks is often not fully established in the literature. In fact, the use of CBD in psychotic disorders has actually been suggested as a possible antipsychotic treatment.[122,123] However, since the concentration of THC in cannabis is increasing, a "standard" cannabis user would likely not use a strain with high CBD, making the therapeutic potential of street cannabis relatively low. For a further discussion of cannabis and psychosis, please see the psychosis section, **pages 19-20** of this thesis. The literature appears divided on the use of cannabis, not only in physical ailments, but also mental disorders. More research is needed, especially longitudinal studies.

1.4.3 Cannabis in Canada

It should be noted that recently, as of October 17th 2018, cannabis was legalized in Canada. This makes recreational cannabis use, self medication, and mental health relating to cannabis use especially relevant for Canadians.[124] Upon legalization, the *Cannabis Act* was put into effect, which was designed to remove the criminal aspects of cannabis by allowing the government to distribute it, and legalizing its use. This also restricted the use and sale of cannabis to only those

over 18 or 19 years old (depending on the province), in an attempt to reduce consumption in youth who are especially vulnerable.[124–126] It is unclear whether these efforts were successful, and some studies suggest that there are no changes in cannabis use patterns or mental health concerns since legalization.[127] For the purposes of this research, an extensive review regarding cannabis legalization will not be done, but it should be acknowledged that those in Canada (over the provincial legal age) are able to legally buy, consume, and grow cannabis.

1.5 Psychosis

1.5.1 Definition, Characteristics, Symptoms, and Treatment

Psychotic disorders occur in roughly 0.3-0.7% of the population, typically emerging in late teens to early adulthood.[128] According to the Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-5), psychotic disorders are defined as "abnormalities in *one or more* of the following five domains: delusions, hallucinations, disorganized thinking (speech), grossly disorganized or abnormal motor behaviour (including catatonia), and negative symptoms."[110] Psychosis refers to the symptoms of a psychotic disorder, but can also occur independently of a disorder. First episode psychosis refers to the initial occurrence of these manifestations in someone, and acute psychosis refers to a period of time where the criteria for psychosis was met, but symptoms later remit.[128] When discussing psychosis and/or psychotic disorders, patients often experience something called an "episode." An episode refers to a period of time where symptoms occurred at a heightened level, often causing significant impairment. When an individual first experiences a psychotic episode and seeks help clinically, they are diagnosed with "first episode psychosis."[2]

There are different types of psychotic disorders, including brief psychotic disorder, schizophreniform disorder, schizoaffective and schizophrenia.[128] There are also individuals who experience an acute form of psychosis due to substance or medication use. In this thesis, only participants who experienced long lasting psychosis (more than six months) were eligible. This includes those diagnosed with schizoaffective disorder, or schizophrenia. Specific inclusion and exclusion criteria will be detailed in the methodology section **(see page 23 of this thesis).**

Experiencing psychosis and being diagnosed with a psychotic disorder means that an individual will experience varying levels of positive and negative symptoms, which are characteristic of the illness. Positive symptoms refer to the presence of experiences that are not typically part of normal human experience. These include delusions, which are skewed or fixed beliefs resistant to evidence that disproves them. Delusions can be persecutory (belief of imminent harm from a person or group), referential (belief that environmental cues or scenarios are directed at them), grandiose (belief of exceptional wealth or talents), erotomaniac (belief that someone is falsely in love with them), nihilistic (belief that a major catastrophe is imminent), or somatic (incorrect beliefs about one's physical health).[128] Another positive symptom includes hallucinations, which are false perceptions or experiences that occur without external stimuli. These commonly involve sight or hearing, but can involve any of the senses including smell and touch.[128] Disorganized thinking and speech is another positive symptom, and is defined as someone who switches topics quickly, or discusses unrelated matters. In some cases, they might even be unable communicate.[128] The final positive symptom is grossly disorganized or abnormal motor behaviour including catatonia, which includes agitation, difficulties completing tasks, decreased

reactivity to the environment (catatonia), rigid weird postures (catatonia), lack of physical/verbal responses (catatonia), or excessive motor activity (catatonia).[128]

Negative symptoms refer to the absence or reduction of functions from normal human experience. These include diminished emotional responses, reduced eye movement, reduced movement, decreased motivation or self-initiation, decreased participation in activities or sociality, decreased speech, and decreased ability to experience pleasure from previously enjoyable activities.[128] The official diagnostic criteria for schizophrenia according to the DSM-5 are depicted in **Figure 1.6.**

Diagnosis: Two or more must be present for a significant portion of time during a 1-month period, at least one must be 1, 2, or 3.

1. Delusions

2. Hallucinations

3. Disorganized speech (e.g. frequent derailment or incoherence)

4. Grossly disorganized or catatonic behaviour

5. Negative symptoms (i.e. diminished emotional expression or avolition)

A. For a significant portion of the time since the onset of the disturbance, level of functioning in one or more major areas, such as work, interpersonal relations, or self-care, is markedly below the level achieved prior to the onset (or when the onset is in childhood or adolescence, there is failure to achieve expected level of interpersonal, academic, or occupational functioning).

B. Continuous signs of the disturbance persist for at least 6 months. This 6-month period must include at least 1 month of symptoms (or less if successfully treated) that meet Criterion A (i.e., active-phase symptoms) and may include periods of prodromal or residual symptoms. During these prodromal or residual periods, the signs of the disturbance may be manifested by only negative symptoms or by two or more symptoms listed in Criterion A present in an attenuated form (e.g., odd beliefs, unusual perceptual experiences).

C. Schizoaffective disorder and depressive or bipolar disorder with psychotic features have been ruled out because either 1) no major depressive or manic episodes have occurred concurrently with the active-phase symptoms, or 2) if mood episodes have occurred during active-phase symptoms, they have been present for a minority of the total duration of the active and residual periods of the illness.

D. The disturbance is not attributable to the physiological effects of a substance (e.g., a drug of abuse, a medication) or another medical condition.

E. If there is a history of autism spectrum disorder or a communication disorder of childhood onset, the additional diagnosis of schizophrenia is made only if prominent delusions or hallucinations, in addition to the other required symptoms of schizophrenia, are also present for at least 1 month (or less if successfully treated)

F. Associated features- may display inappropriate affect, dysphoric mood (depression), anxiety, anger, sleep pattern, lack of eating, cognitive deficits, may lack insight into their disorder, hostility (not very common, often victimization occurs)

Figure 1.6.

Diagnostic standards for schizophrenia as per criteria in DSM-5 (adapted from DSM-5).[128]

Psychotic disorders are characterized by abnormalities in neurotransmission, particularly involving dopamine at the D2 receptor, and glutamate .[129,130,131] These chemical abnormalities occur throughout the brain, in areas such as the hippocampus, midbrain, corpus striatum, and pre-frontal cortex.[131–133] Specific pathways of the brain are also implicated in the dopamine imbalance, including the nigrostriatal pathway, the mesolimbic pathway, the mesocortical pathway, and the tuberoinfundibular pathway. These pathways play a variety of roles, ranging from motor control, to cognitive deficits, and other behavioural disturbances that are influenced in psychotic disorders.[130] Psychotic disorders are thought to be caused by a mixture of genetic predispositions, and environmental risks.[12–14] However, the exact cause is still under investigation, and has been a growing area of research in recent years. Psychotic disorders are generally treated pharmacologically with either typical (first-generation) or atypical (second-generation) antipsychotics.[130] The distinction between the two categories comes from the likelihood of the drug to elicit extrapyramidal side effects. Extrapyramidal symptoms occur due to dopamine blockage, and can include parkinsonism, dystonia, dyskinesia, and akathisia. These symptoms most commonly happen with typical or first-generation antipsychotics.[134,135] In addition to medication, psychotic disorders are also treated non-pharmacologically. These methods are aimed to improve the overall quality of life for those with psychotic disorders, and include cognitive behavioural therapy, counselling, social skills therapy, and employment assistance programs.[130,136–138] Specialized clinics also exist, such as the Early Psychosis Intervention Program (EPIP) in Saskatoon and area. These clinics can play a key part in the treatment of individuals experiencing first episode psychosis, since they provide a variety of the resources mentioned that are critical to recovery.[139140,141] Treatment for a psychotic disorder is complex and challenging, often requiring personalized treatment approaches due to the variability in patients' needs. This level of care is best provided at specialized clinics such as the EPIP clinic.

1.5.2 Individual and Economic Consequences

Individuals suffering from psychotic illness face a variety of struggles that make life very difficult. Those diagnosed with schizophrenia have a significantly reduced life expectancy, on average 14.5 years shorter than the general population.[5,6] This is attributed to unnatural causes such suicide, which is attempted by up to 20% of people with schizophrenia[128] and completed (resulting in death) in 5-6% of people with schizophrenia,[128,142,143] as well as natural causes, which are often related to poor lifestyle choices associated with the illness.[144] Individuals with psychotic disorders also face challenges in employment, with unemployment rates reaching up to 85% among those diagnosed.[3] Homelessness is particularly prevalent in this population, with approximations that up to 20% of homeless people are thought to suffer from a psychotic disorder.[4] Additionally, the overall quality of life is significantly lower, largely due to negative symptoms from illness, but also other mental health conditions which often co-occur.[7,145] Co-morbid mental illness, such as anxiety and depression is something that occurs frequently in those with psychotic disorders, making their illness even more challenging.[146,147] Additionally, stigma and shame, both societal and self-inflicted, is something that frequently occurs in this population, which creates barriers to recovery and a more severe illness.[8–10]

The economic impact in Canada due to the high rates of hospitalizations and long lengths of stay in emergency services is also significant, with estimates as high as two billion dollars per year.[11] Therefore, while the prevalence of psychotic disorders is relatively low in the general population,

their impact is considerable, both in terms of the severity of consequences for those affected, but also because of the substantial economic impact on the healthcare system.

1.5.3 Psychosis and Attachment

Psychosis and attachment, particularly insecure attachment, are closely associated in a multitude of ways. Insecure attachment causes significant disturbances in interpersonal or close relationships, creates a negative view of the self, decreases engagement and clinical adherence to treatment, and increases the likelihood of mental illness.[15,148] Insecure attachment has also been highly correlated with psychotic disorders. A recent meta-analysis by Carr et al. (2018) found that 76% of those with psychosis exhibited evidence of an insecure attachment style, compared to 38% in the non-clinical sample.[149] This study also showed that there are relationships between attachment security and psychotic symptom severity, including positive symptoms (such as hallucinations and paranoia) and negative symptoms (such as social withdrawal and isolation).[149–152] Given that insecure attachment is a significant factor to consider in those with psychosis, patients' understandings of its role is of high clinical relevance. While insecure attachment is not a direct cause of psychotic disorders since there is a large genetic component and other environmental risks, it is proposed that insecure attachment creates vulnerabilities for the occurrence of illness and its severity. This can occur both by increasing risk for psychotic symptoms and for higher severity, as well as worsening treatment outcomes. For instance, individuals suffering from a psychotic disorder who also exhibit high levels of attachment insecurity are less engaged with health care services, suffer more interpersonal problems, cope through avoidance, do not utilize help services provided, have longer hospital visits, and have difficulties in establishing a trust or bond with their doctor or therapist (something that is essential to recovery).[152–154] Increased suicidal behaviour has also been associated with high levels of insecure attachment in those suffering from mental health illness.[154] Therefore, it is important for clinicians to recognize the occurrence of insecure attachment and address the clinical difficulties that arise in someone with insecure attachment and a psychotic disorder. It is also important to recognize that secure attachments, or healthy relationships, are a major factor in recovery and support for those with psychosis. These relationships should be acknowledged in research as well as clinical settings, and further explored to understand their connections with other risks, and the specific role they might play in facilitating recovery. This is one of the aims of the current study.

1.5.4 Psychosis and Trauma

Psychosis and trauma are highly associated, with up to 94% of those diagnosed having been exposed to trauma in their lifetime, and up to 53% of those experiencing co-morbid PTSD.[16] Early life trauma (ages 0-17) is associated with increased odds of experiencing psychosis in adulthood.[155] So, the occurrence of trauma in this psychiatric population is also of high clinical relevance. Despite this, the mechanisms of how trauma exerts its effects on psychotic illness, or why those who experience trauma are more likely to become ill, is still relatively unknown. Some studies have suggested that psychological mediating factors including anxiety, self esteem, or poor impulse control are what determine the relation between trauma and psychosis,[156–158] while others suggest that exposure to trauma creates biological changes in the brain including an increase in dopamine release due to stress,[159,160] an increase in activity of the HPA axis,[161,162] or a decrease hippocampal volume,[162] which in turn increases the risk of developing psychosis. Despite the uncertainty, research on trauma and psychotic disorders has provided valuable

insights. For instance, recent qualitative research investigating the relations between trauma and psychosis has shown that participants' confidence, mood, and ability to deal with daily tasks was significantly affected due to previous trauma, which made their psychosis more difficult to manage.[22]Additionally, the thought content of the hallucinations and delusions they experienced due to their illness was often related to the trauma they had experienced.[22] Quantitative research has also reflected this. In a longitudinal study by Pruessner et al. (2021) investigating the relationship between childhood trauma and long term positive and negative symptoms remission, they found that those who experienced higher levels of trauma were more likely to experience long-lasting positive and negative psychotic symptoms and have decreased general functioning compared to those with lower levels of trauma.[163] In terms of treatment, participants were asked what their preferred method of treatment was for their illness, where many expressed a desire to incorporate trauma-based care in addition to treating for their psychotic symptoms. The lack of opportunities to discuss their previous trauma was believed to be related to their psychosis.[22] Preliminary studies examining trauma-focused care in patients with psychosis have shown promising results, with lower levels of positive symptoms in those who addressed their trauma. However, more research is needed to confirm these relationships.[164] It is clear that trauma has significant effects on one's psychotic illness, creates vulnerabilities to developing psychotic illness, and puts a patient at risk of experiencing worse illness severity. However, what is less known, is how much patients and their families understand the vulnerability created by their history of trauma and how they address this in treatment and strategies for recovery.

1.5.5 Psychosis and Cannabis

The relationship between the use of cannabis and psychotic disorders is complex and still somewhat misunderstood. Research indicates a dose response relationship, where individuals who use more cannabis have a higher likelihood in developing a psychotic disorder. [17,165–167] Additionally, cannabis use in adolescence has been linked to a higher risk of developing psychosis.[17,168] It has even been suggested that if cannabis use were eliminated entirely from society, the prevalence of schizophrenia would decrease by about 8%, implicating cannabis as a significant factor in developing or worsening psychotic illness.[121] THC, the main psychoactive ingredient in cannabis, is thought to be the component responsible for this relationship.[169,170] In fact, THC has been shown to artificially induce psychotic symptoms in healthy individuals with no family history or genetic pre-dispositions to psychosis.[170] This significant connection between THC and psychotic symptoms and illness is of great relevance to research, especially since the potency of THC is on the rise in recreational cannabis use, and cannabis has recently become legalized in Canada. Yet, the relationship between cannabis use and psychosis is not straightforward, as not all of those who use cannabis will develop a psychotic disorder. Recent research suggests that CBD, the other main ingredient of cannabis, might actually have neuroprotective effects against the harmful consequences of THC, might enhance cognition in individual, and might even have potential for use as an anti-psychotic medication.[122,123,169] This potential finding might be important clinically, as CBD could potentially be used as an adjunctive therapy.[171,172]

The lack of clear cause-and-effect relations in many of the studies create complexities in determining the role cannabis has in the occurrence of psychotic illness since perhaps those who use cannabis were already experiencing psychotic symptoms, and use cannabis to self-medicate and cope with this instead of reaching out for psychiatric help. Despite this, it is evident that cannabis does have some relation to psychosis, regardless of whether it causes it or not, and

cannabis likely creates vulnerabilities to a multitude of health consequences. It is also known those with psychotic illness tend to use cannabis (and other substances) more.[173,174] Since these inconsistencies exist in the literature, it is important to acknowledge the connections between cannabis and other risk factors, and how these relationships might have a role in psychotic illness. Investigating this might help researchers understand why some develop psychosis when using cannabis while others do not, and why some experience a more severe psychotic illness than others. Exploring these relations and the connections of these risks is a goal of the current study.

1.5.6 Connection of Risks

These individual risks are known to interact with and augment each other in various ways, often resulting in worsened severity and outcomes. For example, childhood trauma and attachment insecurity have been linked to cannabis misuse, and have been shown to have possible additive effects in creating risk for psychosis.[175] Furthermore, research has shown that attachment anxiety can mediate the relation between childhood trauma and psychosis.[176] Similarly, relationships between insecure attachment, cannabis, and psychosis have been shown, with evidence that those with anxious insecure attachments use cannabis as a method of coping, making their psychotic illness worse.[177] Likewise, the combined effect of childhood trauma and cannabis use has been seen to significantly increase the risk of experiencing psychotic symptoms, and have a synergistic effect, where the combined consequences are worse than the sum of the individual risks.[178] Despite these relationships, little to no investigation looking at all three risk factors — attachment, trauma, and cannabis— have been done, which is one of the aims of the current study.

1.5.7 Previous Qualitative Research

Discussion of the previous topics of attachment, trauma, and cannabis use as independent risk factors has been examined extensively from a quantitative perspective in the literature. However, the first-hand, qualitative perspectives of those affected by psychotic illness are equally important, as they can provide valuable insights into phenomena such as drug use, and lack of patient adherence to treatment. For instance, qualitative research investigating patients' perspectives on trauma in relation to their psychosis reveals a minimal understanding of its impacts.[22,179]

In a recent study by Jansen et al. (2016), 15 participants were interviewed about their understanding of the relations between trauma and their first episode of psychosis. Although all participants had experienced a traumatic event, only six believed their trauma was linked to their psychotic disorder.[179] Similarly, Campodonico et al. (2022) explored the perspectives of 11 participants regarding the relation between their trauma and psychosis. The study found that the willingness to discuss trauma was heavily dependent on the availability of a trusting, supportive person. Several participants said the main reason they did not talk about trauma was because they were never given the opportunity, the person they were speaking with did not seem interested, or they received a negative reaction. This reluctance to discuss trauma often led to self-blame, increased negative thinking, and ultimately worsened treatment outcomes. Conversely, those who were able to discuss their trauma in a supportive environment reported beneficial experiences that enhanced their sense of connection. Consistent with Jansen's findings, a few participants saw no connection between their trauma and psychosis. However, all participants who took part in the study thought their mental health, including coping abilities, confidence,

and the capacity to deal with life in general was negatively affected by their trauma.[22] This indicates that from a patient's perspective, trauma is frequently not connected to psychosis, which indicates a substantial disconnect between the views of the patients and the knowledge or advice of clinicians.

Similarly, there appears to be an inconsistent understanding of cannabis use, since many patients continue to use cannabis despite advice from clinicians not to. What is motivating individuals with psychosis to continue to use substances? Qualitative interviews by Lobanna et al. (2010) identified four themes: *1) Availability and easy access in their community, 2) Internal and external influences, 3) Changes in life goals* and *4) Views on the relationship between substance use and mental illness.*[180] This study suggests that individuals with psychosis use substances due to various struggles they face both within themselves and their society, and that the accessibility of cannabis makes this easier. Fedorova et al. (2020) also found that the use of substances offered a sense of belonging, and was often being done in an effort to fit in. Joining a group or community was commonly achieved through drug use.[181] Most of the reasons for cannabis use presented in the qualitative literature show short term benefits to patients, such as coping with difficulties. This suggests that potential long-term harms of cannabis use in those with psychosis are not as well known to patients. From a patient perspective, the benefits of using cannabis outweigh the risks, revealing yet another disconnect between patients and clinicians.

Finally, attachments/relationships, both helpful and harmful, play a key role in recovery. The experiences of family members and their role in the initiation of treatment are significant and should be considered by clinicians either as an important tool, or a potential detriment to recovery. Several qualitative studies have investigated this. Most studies suggest that family and friends play an important role in seeking help for diagnosis and treatment, particularly in the early stages of illness.[25] Yet, it was also apparent that the support offered can also be clouded by the family members' own misunderstandings. A meta-synthesis of qualitative research by Cairns et al. (2015) summarized 13 studies focused on family members' experiences in seeking help for first episode psychosis for a loved one. Four themes were revealed, including: *1. 'Not knowing'- when trying to make sense and look for answers, 2. Crisis point- the cry for help, 3. Impact upon the family member,* and *4. The role of interactions in help-seeking.* Family members often initially struggled, and tried to make sense of their loved one's behaviour with little success. The lack of information, cultural barriers, and difficultly in understanding the rapid changes occurring, collectively led to a state of distress. Often described as a period of "desperation," family members did not know where to turn. The delay in receiving support due to these barriers frequently led to a crisis point, which commonly resulted in hospitalization as a last resort. At times, professional support was described as insufficient or negative, which further intensified their struggles. Stigma also played a role in delaying help-seeking, leading to feelings of failure or self-blame. Overall, these experiences negatively impacted family members' emotions, relationships, and family dynamics. Despite these challenges, helpful interactions with friends, family, and professionals led to a feeling of support and compassion, minimizing the emotional burden.[26]

These findings align with Oluwoye et al. (2020), who conducted a meta-synthesis of 21 qualitative studies. Authors summarized the experiences of family members prior to the treatment of a first episode of psychosis into four themes: *1) misinterpretation of signs, 2) emotional impact on family, 3) effect of stigma on family* and *4) previous engagement with resources*. Psychiatric help was often sought only as a last resort when the behaviours became

particularly concerning. The experience in seeking treatment was even described as “traumatic” in a number of cases. Once again, stigma delayed treatment seeking, as families were concerned about being labelled, isolated, or judged by others.[25,26] Finally, a meta synthesis by McCarthy-Jones et al. (2013) suggested that addressing risk factors early in treatment through effective planning and education, and considering close relationships could further improve recovery. This makes the inclusion of family an essential clinical factor in treating psychotic illness.[182]

To date, it is still unclear how much patients as well as family members understand the impact of important risk factors in creating vulnerability for psychosis and increasing its severity and associated suicide. The current study aims to explore these aspects through in-depth semi-structured interviews.

1.5.8 Current Study

This brief literature review highlights that individual risks including insecure attachment, trauma, and cannabis use play a role in the development and severity of psychotic illness. While the discussion of the individual risks has been examined both qualitatively and quantitatively, the literature also shows a gap in a qualitative perspective of all three risks, and how they might connect and form relations with each other to influence psychotic illness. Numerous discrepancies also exist between the clinical knowledge of these risks, and what is effectively translated to patients who experience the illness and treatment first hand, and their families who can serve as a powerful tool to patient recovery. Insight into this might provide clinicians with valuable information about why some patients recover better than others despite similar care. Therefore, continued qualitative studies are essential to better explore the level of knowledge translation that occurs. The current qualitative study has two major aims:

1. Conduct qualitative interviews with patients and family members with lived experience to evaluate their understanding of the complex connections between attachment, trauma, and cannabis use in creating vulnerability to severe psychosis and suicide; Using thematic analysis, identify common themes expressed by patients and family members regarding their perceptions of how these three risk factors interrelate and augment each other in the pathways leading to psychosis.
2. Examine whether the current understanding of patients and family members aligns with the available scientific knowledge, and assess if these understandings influence patients' recovery in helpful or harmful ways.

CHAPTER 2: METHODOLOGY

2.1 Participants and Recruitment

This study is part of a multi-centre quantitative study in collaboration with Dalhousie University in Halifax, Canada. The quantitative portion of this study will not be included in this thesis. Participants were primarily recruited from the outpatient Early Psychosis Intervention Program (EPIP) in Saskatoon Saskatchewan, located in the Royal University Hospital. Referrals were also sourced from the Schizophrenia Society of Saskatchewan. Patients were recruited from July 2019-June 2024.

Inclusion criteria for patients include those diagnosed with first episode psychosis, aged between 18-35 years, and without severe neurological disorders or learning disabilities that may impair consent and communication. Exclusion criteria for patients include those who have not received a diagnosis of first episode psychosis, are not between the ages of 18-35 years, or have a severe neurological disorder or learning disability. These criteria ensure that the target population is met, and those with resistant or chronic schizophrenia do not influence the findings. Inclusion criteria for family members required having a family member who was diagnosed with first episode psychosis, and not having a severe neurological disorder or learning disability that may impair consent and communication. Exclusion criteria for family members included those who did not have a family member diagnosed with first episode psychosis, or have a severe neurological disorder or learning disability.

Patient recruitment was done through a **poster (see Appendices A, B),** approved by the University of Saskatchewan Behavioural Research Ethics Board (REB), ethics approval #Beh-565. Posters were displayed outside of psychiatrists' offices at Ellis Hall, and in main waiting areas at Ellis Hall. Ellis Hall is part of the Royal University Hospital in Saskatoon Saskatchewan, Canada. Posters were also emailed directly to those at Schizophrenia Society of Canada. Family members were recruited in these ways, and by asking the patients who were interviewed. It was estimated that 9-17 participants would be needed to achieve thematic saturation. This was according to previous research showing that thematic saturation can be achieved within 9-17 interviews in a homogenous study population.[183] A total of 42 patients and 10 family members approached study members expressing interest. However, due to lack of contact and time constraints from participants, 17 patients and nine family members completed the interview. Following the interview, all of the participants' data were used in analysis. Thematic saturation was achieved.

2.2 Procedures

Patients were recruited though advertisements and referrals facilitated by the staff from the EPIP clinic or from Schizophrenia Society of Canada. Only those diagnosed with first episode psychosis were referred to this study, which was determined by the psychiatrist, and confirmed at the start of the interview. Participants either reached out to a member of the research team

directly following conversation with their Community Mental Health Nurse (CMHN), or their contact information was provided by a psychiatrist at the request of the participant. Participants were contacted by email or phone by the research team, and told the details of the research study. Screening for inclusion/exclusion criteria was done at this time. For eligible and interested participants, an interview date was scheduled. Participants were emailed a copy of the consent, a copy of the honorarium form (for payment), and a confirmation of the scheduled interview time. Interviews were either held online or in person. Prior to beginning the interview, the consent form was reviewed, and a verbal and/or written signature was obtained. Permission to record the interview audio was also sought. Only those who consented to the interview and to the audio recording were included in data collection and analysis. Information required for payment and demographic information was obtained, and participants were reminded of confidentiality. Participants were informed that the interview would consist of open-ended questions, and the interviewer would be there to simply guide the conversation. After confirming participants understood the procedure and had no questions, the audio recording began, and the interview questions were asked. Interviews lasted anywhere from 0.5-1.5 hours depending on the participant. At the end of the questions, the audio recording was stopped. Following the interview, participants were asked how they felt, if they needed any resources or supports following the interview, or had any other concerns. No concerns were reported. Participants received a $40 cash honorarium to thank them for their participation, which was provided electronically via direct deposit through the University of Saskatchewan Connection Point Services. Interviews were transcribed from the audio recordings, and given to the researcher for analysis. NVivo 12 was used to assist transcript organization, coding, and analysis.[184] All procedures discussed were approved by the University of Saskatchewan Behavioral Research Ethics Board.

2.3 Measures

2.3.1 Interview Questions

There was a total of 18 semi-structured interview questions for patients in the revised interview format (21 questions for the original format), and 17 semi-structured interview questions for family members in the revised interview format (21 questions for the original format) with a number of potential probes for each question **(see Appendices D-G for copies of the original and revised interview questions).** Questions consisted of an open-ended format in order to explore the views of the participants and to avoid swaying their answers. Probing questions were occasionally asked to follow up a question. During this study, the interview questions were updated to make them more open-ended and facilitate better conversation. This was done because the interviewer observed that the conversations following close-ended questions were sometimes succinct. However, the content of the interviews remained the same. The questions were simply reworded, and irrelevant questions were removed. Therefore, this slight change in format was unlikely to have affected the results. In total, three patients (SK024, SK025, SK027) and four family members (SKF, SKG, SKH, SKI) were interviewed with the revised interview format, and the remaining 14 patients and five family members were interviewed with the original interview format. Please see copies of both the old, and the new interviews, **in Appendices D-G.**

Before the interview, a brief conversation between the participant and the researcher was held to establish rapport and make participants comfortable. Participants were reminded that everything

would be audio recorded, and that they can skip any questions they do not wish to answer, or end the interview at any time. Brief demographic questions were asked first. Following this, interview questions focused on three main topics, attachment or relationships, trauma, and cannabis use. These questions were answered based on either the participants own personal experience (patient interviews) or experiences with their loved ones (family interviews). Interview questions were primarily focused on the understanding held by participants, and the relations they might see between these topics. At the end of the interview, participants were asked if there was anything else they thought was relevant to the research, and the interview was completed.

2.3.2 Qualitative Analyses

Qualitative research seeks to understand real life, real people, experiences, perceptions, and behaviours, often through the use of open-ended interviews that allow participants to express themselves freely, while also guiding the questions in a sought direction.[185] Qualitative research has been defined in a variety of different ways, including:

> Qualitative research is a research strategy that usually emphasizes words rather than quantification in the collection and analysis of data.[186]

And,

> Qualitative research is an umbrella term for an array of attitudes towards and strategies for conducting inquiry that are aimed at discovering how human beings understand, experience, interpret, and produce the social world.[187]

This differs from quantitative research, which typically involves experiments, measurements, and statistical analysis.[188] While both types of research have strengths and weaknesses, the qualitative method was chosen for this study, since the primary objective was to determine what patients and family members understand about psychosis and its various risks. In order to do this, the thoughts, feelings, and life experiences of this particular population must be considered. This is more effectively done in a flexible qualitative format which allows for semi-structured conversation, facilitating an understanding of the experiences and opinions held by participants.[189] This is opposed to preset measures and determinations that exist in quantitative formats.

There are many different types of qualitative research, but one of the more widely used methods is thematic analysis, which was described in depth in the revolutionary 2006 paper by Virginia Braun and Victoria Clarke.[27] When done effectively, thematic analysis provides a way to understand patterns, or "themes" that exist within a given target population.[27] As defined by Braun and Clarke, "A theme captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set."[27] In thematic analysis, there exists two main theoretical approaches- the deductive, or "top down" approach, and the inductive, or "bottom up" approach.[190] A deductive approach seeks to fit the data acquired into predetermined notions or ideas sought out by the researcher, making it more suitable when one wants to answer a particular question.[191] In contrast, the inductive approach is data driven, and forms themes based on what the data shows, and not necessarily based on what the researcher seeks to answer.[27,192] This can create rich descriptions of real world experiences, but can also stray from the original purpose of the research, depending on what is

said by the participants.[27] The choice to use a deductive or inductive thematic analysis depends on the type of research one seeks to do, but also on the theoretical views of the researcher.

There are also two epistemological stances that a researcher can take regarding qualitative data, the constructivist versus objectivist approach.[193] The constructivist view states that knowledge and reality is constructed by the interpreter, or the researcher. This implies that there are not inherent truths that exist in the data, but the findings and knowledge that come from qualitative data must be interpreted by the researcher first in order to hold value.[193] Objectivism views the world as having fundamental truths, even if no one is present to interpret them. In this case, the role of the researcher is to uncover knowledge, not create it. To summarize, an objectivist views the data as having intrinsic meaning, and theoretically, multiple researchers should come to the same conclusion regarding the data. A constructivist views data as having multiple meanings, and the result are dependent on the researchers themselves. Since these two opposing epistemological stances exist, it is important for one to state their stance when conducting qualitative research, to give readers context of where the findings are thought to originate from.

Before Braun and Clarke's 2006 paper, thematic analysis lacked structure, and was often done poorly resulting in low quality research. In this paper, Braun and Clarke provided a step-by-step guide consisting of six steps. This helped create a standard method for researchers to use when conducting thematic analysis, improving the quality of the findings. A summary of this guide can be seen in **Figure 2.1.** below.

Phase & Description of the Process

1. **Familiarize yourself with your data:** Transcribe the interviews, read/re-read the transcription, note down initial ideas
2. **Generate initial codes:** Code interesting features of the data in a systematic fashion, stay consistent throughout the data set, organize data relevant to each code
3. **Search for themes:** Group codes into potential themes, gather all data relevant to each potential theme
4. **Review themes:** check if the themes work in relation to the coded extracts and then if they work in relation to the entire data set, generate a thematic map of the analysis
5. **Define and name themes:** refine the specifics of each theme and finalize the overall story of the analysis, generate clear definitions and names for each theme
6. **Produce the report**: select the most vivid and compelling extracts, finalize the analysis of the extracts, relate the analysis back to the research questions and literature, produce a scholarly report

Figure 2.1.

Steps of thematic analysis outlined by Braun and Clarke (adapted from Braun & Clarke 2006)[27]

Different approaches to thematic analysis include the: reliability approach,[194] reflexivity approach,[195] and codebook approach.[196] The reliability approach emphasizes the importance of replicability, and objectivity, and often will code according to pre-determined themes or

concepts. The coding process serves as a tool to find evidence for themes that fit a pre-determined topic (a deductive approach).[197] Opposingly, reflexive thematic analysis embraces researcher subjectivity, acknowledging their role, and forms codes/themes based on the data themselves, not predetermined notions (an inductive approach). Finally, codebook thematic analysis is a middle ground between reliability and reflexive approaches, and uses some pre-conceptualizations of codes and themes to map the research, but also utilizes reflexive approaches. This type of thematic analysis is often used when teams are conducting research, since it provides some structure to help keep researchers on the same page, while also allowing for flexibility. The current study follows reflexive approach, since specific codes and themes developed as analysis was conducted, and pre-determined themes were not sought or outlined prior to beginning analysis, allowing for flexibility of the findings based on the interpretations of the researcher.

2.3.3 Researcher's Process for Current Study

Braun and Clarke's six phase approach were used in order to guide thematic analysis. A detailed description of this process can be seen below:

- Importing the transcripts into NVivo[184]
- Organizing the transcripts by patients and family members
- Reading through each transcript 2-3 times
- Listening to audio recording of the transcript and making annotations about tone and other relevant information
- Dividing transcript quotes into codes. For patients, quotes were grouped into: Cannabis, Trauma, Treatment, Attachment, Psychosis Experience, Relationships, Other. For family members, quotes were grouped into: Cannabis, Trauma, Treatment, Psychosis Experience, Relationships, Other
- Making annotations of personal observations, feelings, or thoughts about the content
- Exporting grouped codes according to topic into separate documents (i.e., one document for patient cannabis, one document for patient trauma, etc.) 14 documents total
- Investigating each topic individually and summarizing ideas from participant quotes (i.e., the quotes by SK001 were summarized in order to extract the root meaning of the conversations)
- Grouping summaries based on similar root ideas. For example- if all patients mentioned that healthy relationships were key in their recovery, the relevant quotes were grouped accordingly. This was repeated for every topic (14 documents total)
- Forming a preliminary list of themes with associated quotes based on these grouped summaries
- Grouping potential themes into final themes, eliminating similar or irrelevant ideas
- Creating separate documents for each final theme with corresponding quotes, organizing subthemes
- Combining themes and subthemes into thesis work with associated quotes and descriptions
- Finalizing the names for themes/subthemes

2.4 Positionality Statement

The epistemological and theoretical stance of the researcher is important to acknowledge, as it drives the type of analysis and subsequent findings in qualitative research. For this study, I took a constructionist stance, analyzing the data in an inductive, data-driven manner.

CHAPTER 3: ANALYSIS

3.1 Research Questions

This qualitative study aims to answer the following research questions:

1. What common understandings do patients and family members hold with respect to the major risks of insecure attachment, trauma, and cannabis use, and how these risks might connect and interrelate?
2. How are these understandings described by participants to influence relapse or recovery in psychotic illness?
3. How can these understandings be interpreted, and how do they compare to the understandings of the scientific literature?
4. How can these understandings be potentially used to influence future psychiatric care?

*All names, including health care professionals, dates, or any other explicit identifying details, have been changed in order to protect the confidentiality of participants.

3.2 Demographic Data

Table 3.1.

Summary of demographic data for patients interviewed

Total interviewed	17
Took part in the EPIP clinic	15
Gender	Male: 11 Female: 6
Occupation	Student: 3 Employed: 5 Unemployed: 8 Unknown: 1

Table 3.2.

Summary of demographic data for family members interviewed

Total interviewed	9
Mom	5
Dad	3
Sibling	1

3.3 Legend for Participant ID

SK	Participant is from Saskatchewan
Number	Patient (first patient contacted=1)
Letter	Family Member (first family member contacted=A)
Examples	SK001= First patient approached, from Saskatchewan SKA= First family member approached, from Saskatchewan Note: The participant ID is assigned to the patient/family member when they are initially approached, and might not necessarily be interviewed (reason for gaps in participant ID numbers).

Table 3.3.

Themes and Subthemes

# roman numeral	Theme	Subtheme
I	Cannabis use: From early appeal to lasting harm	
II	Shifts in relationships mirror shifts in recovery	
III	When it comes to risk factors for psychosis, more is always more	
IV	Clear as mud: Patients' and families' understanding of things that matter	i. Connections between risks- varying understandings
		ii. Wanting what is best for their loved ones
V	The rocky road to recovery: From initial confusion to final healing	

3.4 Theme I: Cannabis use: From early appeal to lasting harm

Cannabis was tried at least once by 16/17 of the patients interviewed, making it an important influence to consider. Interviews with patients show a dualistic nature of cannabis in relation to close personal relationships and mental health. For instance, cannabis use was initially described to enable the formation of new bonds and friendships, increase sociability, and provide a common activity to do with friends.

SK001

I: How do you relate to people before you started smoking?

SK001: Hm…I guess I was alight. Yeah I met lots of people by you know smoking. Yeah.

SK005

I: What were some of the benefits you experienced while you were using cannabis?

SK005: Calmness. Um I don't know you know that is a tough question. It was socially acceptable, my friends all smoked. Yeah it was things to do with your peers you know…

SK011

SK011: My friend group before no one really smoked weed and then I started so I kind of stopped hanging out with them cause they didn't want to be around the drug use and stuff and then some of my other friends from high school they started smoking too so it was just a small group of us used and would just get high all the time.

SK021

SK021: Like it (cannabis) gives you a good mental state and plus it allows you to socialize and stuff like that.

SK022

I: Mhm. Okay so when you were kind of using regularly, what benefits did you say you got from it or why you kinda continued using it?

SK022: …Uh, it was something I did socially with my friends and it was just something that I did for fun.

SK026

SK026: What, benefits I was gaining from the cannabis?

I: Right.

SK026: Um, I mean it was like a lot like a really like social thing when I was a teenager. Like all my friends used, and we kind of, I had a lot of friendships that kind of bonded over that.

Despite being often seen as an opportunity to bond, to socialize, or to create intimacy, participants also realize that cannabis use damages relationships with others, particularly relationships that are healthy. It was described as causing withdrawal and isolation from family members or those who care, especially if they disapprove of cannabis.

SK005

I: What were some of the effects that they (parents) saw?

SK005: Withdrawal. Wanting to be alone. Playing video games. Non responsiveness.

SK010

SK010: I think while I was a heavy user I was more to myself and I think that's the best way I can put it. I was more to myself, more introverted, more quiet. Um…before the heavy use um I might be more extroverted, more talkative.

SK011

SK011: …my parents were always super antidrug so they weren't too happy when they found out what I was using. That relationship got worse.

SK018

I: Okay and in, like I guess in what way would it um, just make symptoms worse or?

SK018: It was ruining my relationships.

I: Okay so at the time that you were using cannabis um, how would you say that was affecting relationships with your loved one, loves one, loved ones and family and friends?

SK018: I felt like I couldn't talk to them.

SK024

SK024: Um, I was kind of focused on uh on getting better and um cause I knew how it (cannabis) was affecting my family and people around me who saw I was struggling.

Cannabis similarly has a dual nature regarding mental health, particularly anxiety, depression, and psychotic symptoms. In some scenarios, participants are initially motivated to use for reasons such as stress reduction, managing voices due to psychotic symptoms, self medicating for depression, or getting a good sleep. For some participants, feelings of boredom serve as another motivation.

SK001

I: Right. What are some of the benefits you get from smoking weed?

*SK001: Well, it's relaxing to me. You know it helps me relax and not be so edgy because of the voices *chuckles*… It helps me out. It keeps my mind off of it. Yeah I don't know.*

SK005

SK005: It was kind of an escape because you know I was suffering from severe depression and I thought it would help because I was playing sports and I got injured two years in a row and then I tried cannabis use quite heavily and I went into psychosis and you know I thought it was well looking back it was self medicating which a lot of people do but I just got caught in the psychosis whirl pool.

SK010

I: Oh I see, and what are some of the benefits that you found?

SK010: Well the benefit would be um more rest like um, so sleep better I guess kind of…I feel relaxed, deep breaths, um…less anxious.

SK011

SK011: Oh yeah... It was more when I just started smoking to help, I was always pretty depressed and felt really lonely and isolated so I was hopeless lots, thoughts of suicide at the time.

SK012

I: Okay and at the time that you were using um, what benefits would you say that you got from cannabis?

SK012: Um I did feel relaxed and… uh less worried…

SK022

I: Mhm. Okay so when you were kind of using regularly, what benefits did you say you got from it or why you kinda continued using it?

SK022: ...It would take the edge off. It would make evenings more enjoyable. Um, make time pass by more.

SK022: Yeah I just got more tolerant and then I just became a heavier user. I was bored and I was looking for something to do, something to take the edge off and cannabis was that for me.

SK023

SK023: Um, it (cannabis) was definitely a way to manage those panic and anxiety attacks that I was having.

SK024

SK024: ...I thought cannabis was helping with my anxiety and uh I was doing it every time I got anxious or I got depressed and it was it was uh bad.

SK027

SK027: I don't know I find it (cannabis) helped me relax a little.

So, the main motivators for using cannabis, as described by participants, are a desire to belong, to create intimacy, to fight boredom or to help manage different psychiatric problems such as relieving anxiety and depression. These appealing motivators might make quitting cannabis a difficult challenge, which highlights difficulties that might arise in treatment or clinical settings.

However, despite all the participants (who have regularly used cannabis before) describing these apparent initial beneficial effects, cannabis use ultimately seems to serve as a harmful force. This can be seen in the descriptions from the same participants that higher levels of cannabis use seem to be associated with worsening anxiety and depression, and increased psychotic symptoms including delusions, paranoia, memory loss or brain fog. Similar to its influence on relationships, cannabis use once again exhibits a dual nature in mental health, first presenting the façade of benefit, but eventually causing long-term harm.

SK004

SK004: I guess I feel that cannabis is portrayed as a heal all and I feel like it has a lot of down falls and we maybe don't know all of them yet. I think that it creates it can create some mental illnesses like psychosis I mean not for everybody but for some of us for sure…

SK005

I: Right that's okay. Did you get any benefits from it? Any at all?

SK005: Before I used to be calm, but no I do not think it is beneficial to anyone who uses it.

SK010

SK010: Like the repetitive thinking, repetitive thinking um…a little bit of paranoia behind the benefits, it's hidden behind the benefits you can still feel just tiny bit paranoid.

SK016

SK016: Um… I would just, that cannabis fueled my psychosis like… like when I would smoke, like when I would smoke like, say if I smoke now probably would get really bad anxiety and delusions and stuff like that. But now that I don't smoke uh, I don't get anxiety and delusions.

SK022

I: Mhm. And um, you kinda said the hallucinations were like a real downside. Did you have any other negatives from it that you remember?

SK022: I lost my appetite. I wasn't eating. Sometimes it would give me anxiety.

SK024

SK024: ...I would almost say like it (cannabis) kind of made my anxiety a bit worse. Um, in a sense even a little more depressed because when I, when I didn't have it, um, like when I was at work or something like uh, I I wasn't I wasn't the same person. I was…. Like a completely different person than any than everyone at my school like they would probably tell you like I was, I used to be very energetic and social and like I was carefree without the weed, like I, I, I just, I just kind of didn't care what people thought and I just would like let that be known I had no…well I guess I had anxiety a bit but I was a little more I guess just relaxed but yeah, um, yeah. And um, I guess uh, another one would be laziness. Uh, memory loss. I had big trouble remembering stuff, brain fog kind of thing…

SK026

I: Okay. Um, so you talked about hallucinations, did you, did you see that as a downside to the cannabis or did you have any other downsides or I guess maybe negative effects of the cannabis?

SK026: …once I got sick, it was, it gave me like um, quite a bit of anxiety and it messed with my mind, and I was like yeah. It definitely, it had its positives but definitely had its negatives as well. So, but once I realized that it was part of the reasons that I was feeling sick is where I kind of decided to slow down, and stop using so much.

3.4.1 Interpretations of Theme I

Participants described the dual role of cannabis in relationships (both helpful and harmful). For instance, cannabis was seen as initially facilitating bonding and sociability, giving the impression

of a facilitator of healthy relationships. It also seemed that it was particularly appreciated by vulnerable individuals without established healthy relationships who were searching for attachments and intimacy, and fell prey to cannabis use as an easier solution.

However, participants also noted that cannabis eventually leads to isolation and disconnection from healthy relationships. Patients and family members alike often noted changes in relationships due to cannabis, leading to increased irritability, higher confrontation, decreased agreeableness and warmth. Patients also sometimes described not being understood by their families, which might explain why they turned to cannabis initially instead of their families. On the other hand, it was also noted that most patients regained a sense of closeness with healthy figures in their life after quitting cannabis, consistent with the observation that cannabis dependence replaces healthy attachments.

Despite this recovery of healthy attachments, it remains unclear whether participants recognized the powerful role unhealthy attachments might have had in their illness. Patients sometimes reflected fondly on the memories of relationship attachments formed by cannabis use. They smiled, chuckled, or described the experiences with apparent nostalgia. These conflicting feelings might create challenges in a clinical setting, as patients might be reluctant to sever these relationships initially due to these pleasant emotional experiences, and the lack of awareness of the long-term impact. It should be noted that these seemingly "fond" reactions could also be interpreted as trying to offload feelings of awkwardness or discomfort that arose during the interview, or while reflecting on these memories.[198] As well, the potential connection between using cannabis as a substitute for healthy relationships does not seem to be fully grasped by participants. This suggests that the individual risks of cannabis use and unhealthy relationships are recognized more than the connections between these risks. Although awareness of the individual risks can support healing, it suggests a relatively shallow understanding of the underlying risks.

This dual role is also seen in mental health. Participants frequently described using cannabis for self medicating purposes, as a helpful tool for initially relieving anxiety and depression. At times, it was even used to cope with the early symptoms of psychosis, such as hearing voices. From this perspective, cannabis use initially appeared to increase overall well being while easing problems with mental health. This was especially apparent in the early stages of their illness. However, after heavy use, self medicating with cannabis ultimately failed, and patients' symptomatology invariably worsened. Fortunately, many of the patients interviewed recovered from these episodes enough to acknowledge these harmful changes, and were able to identify the harmful influences from cannabis use. These influences were reported as worsening anxiety, more psychotic symptoms, and other cognitive challenges such as brain fog or memory disturbances. Most participants were also able to notice that once cannabis use was ceased, the mental disturbances generally disappeared. This recognition might be attributed to access to psychoeducation provided by health care providers, including the EPIP clinic. Most participants seem better at recognizing the connection between cannabis use and their mental health issues than recognizing cannabis's influence on their relationships. This might also reflect the advantageous aspects of specialized treatment programs. This understanding of these connections

might be a key reason why many have chosen to quit cannabis entirely. Out of those interviewed, 13/17 participants no longer used cannabis.

These appearances indicate that at some point participants change their mind about the role of cannabis. This might occur once symptoms become unmanageable and they are admitted to a hospital for treatment, but it is unclear what the exact motivating factor is for the transition of cannabis use to not use. However, not all participants have changed their minds, and 4/17 of the patients interviewed continued to use cannabis occasionally (at the time of the interview). This suggests a gap in knowledge translation among some patients in recovery and might indicate that those with weaker associations between cannabis use and the harmful relations on relationships or mental health are less motivated to quit. Perhaps these weaker associations are due to a less extreme event or occurrence, meaning that the harmful catalyst for change is not as strong. It can not be said for certain that this is the reason why some participants quit their use while others did not, but this possibility could be a potential question for future research.

Finally, these interviews also provide insight as to why patients continue to use cannabis despite having psychotic symptoms. Often patients think they can manage their mental health with cannabis, but eventually it becomes unmanageable, leading to near constant cannabis use, and a break in their mental health. Interestingly, when inquired directly about it, some participants did not seem to remember the information provided by their care providers regarding the relation between cannabis and psychosis. While this might be a sign of apathy,[199] it might also suggest that increased efforts in reiterating this information regarding these risks through educational programs is of paramount importance, in both the clinical population as well as general population. This is particularly relevant in Canada, where cannabis use is now legal and highly available.[124]

3.5 Theme II: Shifts in relationships mirror shifts in recovery

Descriptions of strained relationships, especially in the early stages of illness, are common among those interviewed, and evidence of insecure attachment (such as descriptions of tumultuous relationships, lack of trust, abusive upbringings, avoidance of relationships, self isolation) is seen in all of the patients. This is alarming, as secure attachments serve a critical role in recovery.[25,26] Family members and patients alike often described cannabis use as something to blame for the initial disconnect in healthy attachments, which ultimately was understood as causing detrimental damage to family relationships, sometimes resulting in feelings of anger or disconnect from healthy influences. Relationships with family members and other healthy attachments were also strained by the early experiences of psychosis itself, which is described by the participants.

> ***SKE***
>
> *SKE: We were super close (patient and family member). Super close. When I talked about moving out soon, he would get emotional. We were so close. And then I can't explain it. When the second time that he did this (used cannabis), like again, like second as in like the second big break down from like two years ago. I was fuming angry. Especially me. I felt like nobody was as hurt as I was because I was the one that spearheaded all of this.*

So it is like I do all of this and in return you just go do it all over again. So I was so angry. I actually didn't even go visit him, like now, at Dube for the first like two weeks or something because I was so mad and I was like I don't want to look at this kid. I don't, I want him out of my life. Like I was just so angry. I don't know I can't explain it…

SKF

When asked if cannabis use has affected their relationship

SKF: um… yeah I feel like it has. Because like it caused his psychosis and uh, we are just rebuilding our relationship now. We used to be close before all of this happened and it just felt like I… he wasn't him for the past two years. 2-3 years. Yeah. But he is slowly getting back to himself but I know he will never fully be himself again.

SKG

When asked if their relationship has been affected by cannabis use…

SKG: I would say yes. Um…. Uh, I think as we have explained to him, our um…. the trust. Um…like you know when he would be was at home, you know you were just at work and you just think you know what is it going to be like, the house going to be when I get home. Um, we couldn't, we wouldn't, um if we were to go somewhere for like a holiday or something, one of our other sons would stay at the house with him. Um, we did not feel comfortable leaving him alone because there was times where he would leave the house and leave the door unlocked or the stove on…

SK010

I: Has your relationship with your loved ones been affected by your use of cannabis or your diagnosis of psychosis?

SK010: I think it was affected just a little bit with the use of cannabis because my parents don't drink or smoke so it made things even harder for us to interact. It was already harder from the beginning because I felt like they never understood me since I was a kid um…and that was even more um…intensified um when I started using because they don't use so yeah.

SK018

I: Okay um, would you say that it (cannabis use) had an impact on potentially your hospitalization or things getting worse over time or?

SK018: Yeah I would say so.

I: Okay and in, like I guess in what way would it um, just make symptoms worse or?

SK018: It was ruining my relationships.

SK011

I: Okay and then um.. after you you kind of started experiencing these symptoms and started cannabis use how would you say those relationships were after?

SK011: Um.. I kind of lost contact with most people. I had a small group of friends and I really just dissociated with them after.

SK012

I: Okay and after diagnosis would you say that changed? Did your group change or did you lose friends or gain friends?

SK012: I realized I can't really handle friends at same time of schizophrenia.

SK023

SK023: During the psychosis obviously I had you know almost zero connections, I put everyone out. And then before that the group of people that I knew from school I really haven't had contact with you know after the psychosis… I guess I mean now I am at a really stable place with connections. But during that psychosis it was you know, I pushed almost everyone away.

SK025

SK025: Um...well, I was isolating myself a lot and I was essentially I couldn't trust anybody when I was going into psychosis. I couldn't trust the health care I was getting, I couldn't trust anybody really… I would say that the relationships are probably all damaged just because I kind of cut myself out. I am a pretty quiet person, I don't reach out I just yeah…I just see myself as different and I isolate away…

SK026

I: And what was the relationship with your family like after you were diagnosed?

SK026: Oh, it was pretty crazy. Um, I was diagnosed when I was seventeen I think, and I got taken into the Dube and that's where I got hooked up with EPIP. Um, it was really hard. Um, my parents kind of watched me fail and they watched me abuse (cannabis) and get worse and worse and worse. So it definitely put a big big strain on my relationship with them.

I: Right. And you talked about um, your parents not trusting you as much?

SK026: Definitely. I definitely like stole from them, um, I took money I took like booze, um, so that definitely was part of it. But I just wasn't like a really good person when I was sick or when I was using (cannabis). I just wasn't, my mind was so far gone at that point that it was just kind of, our relationship is strained quite seriously.

Despite these healthy relationships initially being strained, many of the patients spoke of eventually experiencing a shift in perspective. This often leads to them having fewer relationships overall (as mentioned by 12/17 patients), but the remaining relationships are of a higher quality. Patients often described this reduction in their social group size as a sign a recovery, and of being motivated by a healthier selection of relationships. Therefore, although the overall number of relationships is fewer, the remaining relationships are happier and healthier, thus bringing beneficial changes to their lives.

SK001

I: Oh okay, and do you still have the same friends you had before you started smoking?

SK001: Um some, others they, they, they aren't there anymore.

I: Mhm. You still have, most of the same friends now?

*SK001: Um well *coughs* I have some elementary school friends, but all my other friends they are gone due to drug use.*

I: Ah, okay.

SK001: Cause I couldn't hang out with them if they were doing that, so I was like no… I had to change.

SK005

SK005: Oh yeah I have lost tons of friends… Because I don't smoke and I don't drink that is all they do whenever they get together. So I have a few friends now who don't pressure me, who don't judge me who don't do those things.

I: Right. Right do you think this is better for you?

SK005: Way better yeah. Way healthier.

I: Fair enough. Fair enough. For your has your relationship with your loved ones been affected any at all beside your friends?

SK005: It used to be because they were quite disappointed with me for using um but now I think they have forgiven me for the most part and I am starting to contribute more. I just grow everyday that I am not using.

SK022

SK022: Um, I think I was in some unhealthy friendships before I went through my psychosis… and going through my psychosis just highlighted that and so after that episode I actually cut out quite a few people from my life.

I: Okay. Okay, and um, in regards to relationships with loved ones whoever that may be like family or friends whoever, would you say that the cannabis use affected those relationships?

SK022: I think so. I quit going home as much. Um, I didn't make plans with family because I was with my friends. Um, I was too busy doing other things to really nurture those relationships and now that I've quit using cannabis I see my family a lot more.

SK024

SK024: Um, but uh, after like after grade 12 like I was always on a club volleyball team and they were all pretty heavy pot smokers, I don't really talk to any of them anymore, I used to consider them close friends as well but I, I don't talk with any of them anymore… a big factor for our friendship was uh, was marijuana…

These re-established connections and family support are paramount to treatment and recovery for patients, and being able to rely on these newfound supports was described as a key for healing by 14/17 of patients interviewed. Actions that facilitate this recovery were described by both patients and family members, and include reminders to take medications, giving rides to appointments, recognizing illness and reaching out for help, or even helping with day-to-day tasks, to name a few. These actions were understood as not only helping patients quit cannabis or other drugs but also as providing a pillar of support during difficult times, both of which are often portrayed as a foundation for their recovery journey.

SKA

SKA: The first year and a half was a real struggle. But now we have really come to a I think a really solid understanding and a really good foundation in our relationship. We are very close and we talk openly about anything and everything and this is just one of the things we do.

SKB

SKB: Uh both me and my wife, his mother were supportive of him and whenever he goes he comes with us now to go to the cottage and he brings his meds and make sure he keeps that up to date…

SKE

SKE: I went to all of his psych appointments, before all of this stuff, we got super super close. Way before then even we were like before that before this whole mess. Um, I did all of his stuff with him. Helped him even like taxes, like shopping, every little thing.

SKG

SKG: I send him a reminder every night or call him, I call him pretty much daily to remind him to take that (medication).

SKI

*I: And then um, *the patient* is part of the, the Early Psychosis Intervention Program… Um how involved have you been in the program or his treatments?*

SKI: Oh we are. We go with him all of the time.

SKI: …and now that he has been given the the proper help, I think that we have a better relationship.

I: Mhmm.

SKI: because we like uh… we like more open now to each other.

I: Right okay, so he will come kind of talk to you more about stuff or?

SKI: Yeah.

SK001

SK001: Mother, were you in, what is it called the treatment program? Were you involved in the treatment program, for my mental illness? Like EPIP?

I: Yes

SK001: Yes in the early stages.

I: In the early stages, okay. How did you feel about that?

SK001: Back then I was kind of like mad and upset but like now I am grateful and thankful, you know. Without them I would probably be fricken, not doing so…

I: Mhm. How did you get started, was it because of someone in your family said you need to get help, or something?

SK001: Yeah, yeah my mom seen the symptoms and I got a brother like this too hey. And she seen the same symptoms and yeah right away she was like yeah you got to go to the hospital, and I was like okay.

SK005

SK005: I live at home. I see my brother and sisters all the time. We have a really healthy relationship. They are very supportive…. I have a very good home life. I am very lucky in that way.

SK021

I: And are any of your family members um, here or are they involved with your treatments or?

SK021: Uh yes they are involved with my treatment and they do take care of me a lot.

SK022

I: Okay. And do you have family involved um, in your treatment or did you at any point when you were kind of like admitted?

SK022: Uh, yep. My mom was very involved. She was concerned about me so she just wanted to learn as much as she could about the diagnosis and what she can do and also just like warning signs so she can be there for me.

SK023

I: Mhm, okay. And um, do you have any family members involved in any of your treatment? Whether you know initially or now or kinda how that has changed at all?

SK023: Yeah both my parents are very involved.

I: Okay and they kinda consistently have been the same amount throughout the whole thing or?

SK023: Yeah definitely. Um, I mean they understand it better now but even when they didn't understand it they were there and they were trying.

I: Okay. Um, okay and did you feel that there was any connection between your living arrangements with kinda who you lived with or where you lived and your mental health or your cannabis use?

SK023: Yeah I mean I think I was in a pretty safe environment in general which helped. Like I think that if I had been on my own maybe the psychosis would have gotten a lot worse or been a lot more out of control because I had my parents at least being there for me and helping me to cook meals and that kind of thing.

SK024

SK024: um well my friends were very supportive. Um, they came and visited me multiple times when I was in the hospital making sure I was all good. Um, it just uh, you know just talking and just being there and that really meant a lot to me… um they have always been those core three right there they have always been very supportive of me…

SK024: ...I give a lot of credit to my mom um for being there for me and kind of helping me move forward early on…now that I have moved out like um like she is always checking up on me and uh just making sure I am doing okay. We hang out quite a bit…she is just great like; she is she has been doing like early on when I when I needed something to distract my urges from smoking weed again she was like let's go to the trampoline park let's go mini golfing and like she was on top of it like oh what do you want for supper were we're going to cook together kind of thing. She was, she was right there just to just to kind of help me and even when I moved out like she was making sure like pretty much every day like how are your withdrawals doing how's this doing how's this doing, kinda… and um, yeah like it was uh, she was just really good.

SK024: ...the biggest thing was just the people around me, honestly. Um, I mean moving in with my girlfriend after I got out of the hospital it just allowed me to be a little closer to my main support system I would say, but um.

SK024: ...I just had a good support system and that kind of gave me motivation to, to get better.

SK026

SK026: I mean like when I had quit (cannabis), my parents were kind of like giving me an ultimatum, so I picked them.

I: Right. And is your family involved in your treatment program?

SK026: Yes, yes they come to every appointment. They see counselors and EPIP as well. They are very much part of my, my treatment.

SK027

SK027: ... a couple weeks ago when I went through a five-minute bout of psychosis where I started yelling at myself like I was the problem and I phoned my dad as soon as it happened and I wanted to talk to him and then he got busy so he called me back. But like just knowing what I am going through and knowing that I am aware of what I am going through is a huge factor in like… in my recovery.

These relationships were also described as serving as valuable models of coping with difficult situations for patients, and sometimes as replacing previously engrained habits of drug use, or other harmful coping methods. These beneficial relationships are a method of coping for family members as well, who also face difficulties throughout their loved one's process of healing and recovery.

SKC

SKC: I think that is our main coping strategies, is with each other.

SKD

*SKD: I think our, *spouse's name* and I are closer together, closer now that we are now both retired and have more time… So I think that um, uh. You know that probably allows us to you know support each other better and also to support (the patient) more.*

SKB

I: Okay and what has helped you cope with all of this? What would you say helped you?

SKB: Helped me?

I: Mhm

*SKB: Oh just, just seeing him like he lives three blocks down so I see him everyday or he will call and we will go out for something to do *chuckles*"*

SK001

I: Okay, um. What helps you to cope? You talked about your father passing and um your substance use and you having some hard times with psychosis, what has been, what has helped you to cope with all of this?

SK001: My mother.

I: Oh yeah, family support.

SK001: Mhm, she's a big top point of everything.

SK011

SK011: I will talk to my girlfriend when feeling real stressed out when I would normally take drugs.

SK014

I: Okay and um, would you say you had like any relationships kinda helped you to get through stuff or any um, like things that you would do like activities?

SK014: Uh… I would read a book or talk to my parents.

I: Okay and what, at the time that you used cannabis would you say that you used that to cope for anything um, that you were kind of struggling with at the time?

SK014: Uh… before I, I didn't go to counsellor or I would actually not even talk to my parents about my problems.

I: Okay so did you kind of turn to cannabis then initially or?

SK014: Uh yeah.

SK016

I: And what has kind of helped you cope throughout all these difficulties that you've had in your life?

SK016: Um.. probably not smoking weed and uh.. being with friends and family.

SK018

I: Mhm. Okay and lastly what has helped you cope with um, your struggles? It could be anything from psychosis to other things.

SK018: I'd say the Palperidone injection has helped… And not, not smoking weed so I can actually talk to my family and uh…People.

SK022

SK022: Um, I used to rely on cannabis. Uh, I would honestly say that I was an addict. So I no longer use cannabis but um, really just relying on my close loved ones and being able to talk to them and have those conversations really helps.

SK027

SK027: I didn't have support, I didn't think I had support. I didn't think my family would support me and as soon as I told them they were like what why didn't you say something like we could have dealt with this way back when and it was never dealt with.

I: Right.

SK027: So knowing that my family supports me in whatever happens to me is a huge like it lifts the world off of my shoulders almost.

I: Ok. And anything else that helped you cope or was kind of family support the main one?

SK027: Family support was the main one.

3.5.1 Interpretations of Theme II

Relationships/attachments in the initial phase of the illness were described by participants as harmfully influenced by the psychotic process and the psychoactive influence of the often-abused substances (most commonly cannabis). This is reflected in the patients' lives by increased unhealthy relationships/attachments and decreased healthy ones. Because of this, patients often have few people to rely on during the height of their illness, and often have to seek support from broken relationships. Having to rely on damaged relationships might put patients in vulnerable

positions, where their trust is broken repeatedly, and they lose the ability to reach out for help, and to have healthy relationships.

These initial disconnects in relationships might be caused by a fear of being misunderstood, or a fear of vulnerability with people they are no longer close with. These scenarios might also contribute to feeling discouraged or hopeless about their chance of getting better, and might potentially have an adverse influence on their likelihood of receiving help. Since the relationships in patients' lives are so dramatically transformed, patients might even feel a sense of loss from their unhealthy attachments, especially if their unhealthy nature has not been realized yet.

So, family members and clinicians need to acknowledge these complex feelings, and understand their origins, since this could be an important step to healing and receiving adequate support. This should be done alongside educational strategies for both patients and family members to prevent these instances from happening again.

Another reason for the interpersonal difficulties experienced by individuals with psychosis is that characteristics of insecure attachment (such as mistrust and difficulties with relationships) seem to be enhanced by both cannabis use, and the psychotic illness itself. These associations can make recovery increasingly difficult as the illness progresses, since attachments play a crucial role in help seeking and recovery.[25,26,69]

Typically, it appears that the healing process requires a multimodal approach, through managing psychotic symptoms, while reducing cannabis use. Consequently, recovery from illness and improved cognitive function promote psychological health and allow patients to repair or establish better relationships. This leads to a new foundation for their connections, and allows some of the previously damaged relationships to heal.

When healthy attachments are established, they are a key source of support, coping, and healing for patients. Patients' descriptions indicate that without these healthy attachments, the process of help seeking, treatment, and recovery would be much more challenging. In fact, the majority (14/17) of patients mentioned the beneficial influence of healthy attachments on recovery. They either expressed their explicit gratitude toward their loved one's support in their recovery or mentioned that their loved one was crucial for their recovery. Interestingly the three participants who did not indicate a healthy support system also reported less recovery, more difficulties and higher dissatisfaction with progress and life at the time of the interview.

These observations suggest that evaluating attachments and relationships in the lives of patients with psychosis is very important, since the absence of healthy attachments might be a reason why a patient is not recovering as well as others. A lack of healthy attachments might also indicate that the patient needs more support from the treatment providers who can temporarily take the place of other healthy attachments. Fortunately, specialized clinics such as the EPIP clinic provide this opportunity, through the model of teamwork, often to a greater degree than first-line health care.

Healthy attachments are also relevant for family members. In well-functioning families, not only does the psychotic illness bring them closer to their loved one who is ill, it also brings them closer to each other. Participants gave examples of various family relationships getting closer in response to the illness (e.g. couples, parents and children, siblings etc.).

This is very important since family members are often a pillar of support for healing, and this support needs to have a solid foundation before it can be used.[25,182] Therefore, this research further supports the team models of health care, in which family members become closely involved, as much as possible, and occasionally are supported themselves to navigate the difficult process. In fact, this current study might suggest that further developing a support system and psychoeducation for family members of those with mental illness specifically is paramount and likely very effective in promoting the recovery of the patient and the family as a whole. This would ensure that those on whom the patient rely so heavily (especially in the beginning) are capable of taking on this role, first by supporting themselves, then their loved one.

It should be noted that most patients acknowledge that the size of their social group has gotten smaller since their illness and recovery, which is often viewed as a detrimental consequence from illness.[200] However, this research suggests that a smaller social circle can be a good development if the relationships remaining are higher quality, and that fewer but deeper connections are more valuable than many harmful ones. Therefore, one must take caution when assuming that a smaller social circle indicates a more severe illness. In some cases, it might be a sign of improvement through a healthier selection. Well-informed clinicians evaluating and discerning on the quality of attachments in psychosis can provide needed reassurance to patients and families, normalizing the loss of meaningful but detrimental social connections and necessary grieving, while opening new opportunities for interpersonal growth.

3.6 Theme III: When it comes to risk factors for psychosis, more is always more

Trauma was reported by 12/17 participants, and defined by a self-reported traumatic event or events. Participants were not required to report the type of trauma they experienced, but types included: violence (1), childhood abuse (5), sexual abuse (3), or unspecified (3). Additionally, insecure attachment traits were observed in all 17 patients who participated in the interviews. This was characterized by descriptions of tumultuous relationships, a lack of trust, abusive upbringings, avoidance of relationships, and self-isolation. Insecure attachment and traumatic experiences individually were described as having influenced psychotic illness occurrence and severity, which is seen in the following excerpts.

> ***SK010***
>
> *SK010: Umm…just looking back to how I grew up relationship with the parents, not being treated right because my dad was not around since I was maybe three or 4-years-old until 10-years-old. I was just living, and my mom I was not really living with my mom that much. I was living with my grandparents. I would see my mom maybe once in a while like she would work so whenever she came from work, that's when I would see her kind of thing so…umm…thinking of that while I was young and uh…just, just in general my life in general just reflecting back to it um...built up a lot of anger and uh…that anger is*

not, is not, what is it…is not a healthy way of thinking or living, so it would, yeah it was just not healthy in general so it just made me umm…sick, I can kind of say that. The thing is I would try not to think of it but it would always come back, it would always come back, so yeah.

SK021

SK021: Like the environment you grow up to kinda shapes you as who you are and even the parenting styles that shapes your uh, way of like interacting with people and your uh, your trust with people basically…And… yeah like it's just, I align myself with their beliefs and hopes that uh, I would coexist with them much better but if I would have the choice to have my beliefs I would say yes I would like to stick strong to it but then I changed my beliefs and then well, I tried to… but uh, it just, it just breaks you, you know. Your mental being and yeah, your identity And that's what led up to it (psychosis).

SK025

SK025… like I was suspecting something was happening and then I would isolate myself to stay away from those people. And then those people would kind of pick up that something was wrong with me that they would speculate about me, that I would catch on to something like that happening and I would further enhance my feelings towards them plotting against me. Almost like, not a feedback link but I don't even know how to explain it. Like the self-fulfilling prophecy.

Trauma and insecure attachment also showed interrelated relations. For example, participants reported that insecure attachment characteristics such as a lack of trust and isolation worsened because of previously experienced traumatic experiences. Because of this, participants sometimes had difficulties forming relationships later in life.

SK023

SK023: I think that those trust bonds that you know get destroyed with trauma and then with the psychosis I was just latching on to kind of anything that I could because I was bottling things up and not dealing with it properly. And medication only goes so far…

I: Okay and have you ever felt unsafe or that your life was in danger?

SK023: Yeah especially after the assault. I really lost trust in kind of everything and um, I find my fear response is really really active.

SK024

SK024: … But um, my only like female role models were ones that beat me and used me and called me stuff and so it was kind of hard to trust women like growing up and it kind of it was hard to interact and kind of be myself until my teenage years and then that kind of all went downhill after I moved because I was isolating myself again and my environment was a lot better with my mom. Like I don't know, like she was just happy to have me there because you know she didn't see me all that much but um, but yeah like it just kind of felt like when I moved here like didn't have any of my friends here, and I didn't want to go out so I just kind of went back to my old task, my old tactics from when

I was a kid and just isolating myself in my room playing video games and building lego kind of thing.

SK024: I had you know step mothers who would um, they would hit me and abuse me and call me names, all this stuff. Um, even one time I got thrown down the stairs, well actually that happened a couple times but um, but yeah like um they would only do it when my dad wasn't around and they kind of caused me to isolate myself a bit as a kid and I didn't really break out of my shell until I was like a teenager…

SK024: …But um, my only like female role models were ones that beat me and used me and called me stuff and so it was kind of hard to trust women like growing up and it kind of it was hard to interact and kind of be myself until my teenage years and then that kind of all went downhill after I moved because I was isolating myself again…

SK025

SK025: Yeah, like I have had childhood trauma where things weren't great as a kid…And that kind of affected me a lot throughout life.

I: Yeah, how would you say specifically maybe how it affected you.

SK025: Not being able to trust people I guess is the main one. Losing trust in people.

Insecure attachment qualities can also be understood as causing harm in the reverse direction by increasing the occurrence of traumatic or harmful experiences, as reflected by one of the participants.

SK021

SK021: Like uh, I think all comes to parenting and how I almost uh, well I almost committed suicide when I was like uh, I think, I can't remember I was still a kid back then and I was just unhappy but uh… well with what life is and yeah…I think my trauma stems to the fact that I have trust issues because uh, I still remember a lot of the abuse I got from my parents like the verbal abuse use and uh even physical abuse and also well, that's why I kind of learned to lie and kinda like try to manipulate people and stuff like that and I was trying to look out for the best way to defend myself."

These traumatic experiences are sometimes dealt with by using cannabis, either as a method of coping, or a way to manage these difficult experiences. Some participants also described using cannabis to manage the loss of a relationship, or cope with feelings of loneliness or hopelessness.

SK011

I: Would you say that you have any history of trauma in your life?

SK011: Yeah.

I: And do you feel like there is a connection between that and cannabis at all?

SK011: Yeah there's some things that when you smoke weed you kind of forget about it. Um.. and it kind of makes the pain go away… Um... so I can think that's one reason why I smoked so often.

SK022

SK022: Uh, yeah. It was actually after I was assaulted that I started using marijuana more.

SK027

I: When you were using cannabis what benefits or downsides would you say you had from it?

SK027: Really it just made me sleepy. That is the only reason I used it was because I would sleep. I would sleep a lot better because… part of what happened when I was going through psychosis was I caught my committing crime… and… this guy had broken into our house with a knife. And I had woke up and he was watching me sleep. Like he had my door cracked open and he was watching me sleep.

I: Ok.

SK027: So I was like what the fuck. So every night I would get up sporadically throughout the night and make sure our door was locked.

I: And that is why you started taking it to sleep then?

SK027: Yes…

SK026:

SK026: Um, just kind of um, I recently broke up with a boyfriend and I am not sure if that was what kind of led me into drugs. So I was dealing with that. Um, it was just like a, I don't know. I don't know.

SK011

I: Have you ever felt hopeless, unsafe or that your life was in danger?

SK011: I have yeah. In the past, it's better now.

I: Okay so, so um.. more so leaning to which kind of hopelessness or kind of the lack of safety or both?

SK011: Um.. kind of both. I drive like pretty reckless um… and doing things like doing like almost 150 kilometers just in and out of traffic umm. Doing reckless stuff like that, um… and then what was the other one sorry?

I: Um.. feeling hopeless?

SK011: Oh yeah.. It was more when I just started smoking to help…

Although cannabis is said to help with traumatic experiences, for a few participants, it was also understood as working in the reverse direction by increasing exposure to violence, psychological stress, such as psychosis, and other harmful situations.

SK005

SK005: … I started using cannabis even more so and the violence kind of just came at the same time… So started making bad friends and felt like the depression and suicidal thoughts kind of came at the same time while the violence grew and um…yeah that's the best way I can explain that…

SK010

I: And what made you decide to quit (cannabis) at that time?

SK010: Because to be using you would have to be around people that use so I just started getting tired of being around people that use and which are people that are kind of like "doing bad things in the street" or whatever you can call it.

SK024

*SK024: I was just smoking a lot of weed and all of a sudden I just kind of started…I started hearing things and I was kind of *inaudible* and then I kind of started seeing things and these. There were these voices they were all in my head and they were telling me to do a lot of bad stuff. Most…most of it was suicidal stuff. Um…*

SK024: Um, the voices kind of got the best of me and suicidal thinking was there and uh I was a little more aware this time I was just really scared…

Furthermore, the experience of psychosis itself was often described as terrifying. Based on the accounts of participants, the experience of psychosis itself can create traumatic or stressful experiences, and can even occasionally increase feeling of mistrust, which might affect the development or maintenance of healthy attachments.

SK001

*SK001: Uhm, like in the first like year or two, with my mental illness, it was all like, it was just horrible. I was always afraid of my life because like, how they were talking to me and such and get mad, threatening me, and I was just like okay. You know, I had like weapons in the house and bats and stuff. *chuckles* That was a pretty scary time though.*

SK005

SK005: Well when it happens it is quite confusing, frustrating, scary at times um something you cannot control so I like to have control over my thoughts and stuff like that but when it happens it is not a good experience. Extreme paranoia, intrusive thoughts, thoughts of persecution, yeah it is not fun. It is actually a very scary experience.

I: Right right, and you had issues with trust when you were starting out?

SK005: Oh yeah, I was quite paranoid.

SK014

I: And have you ever felt unsafe or that your life was in danger?

SK014: Um, like when I had psychosis yep I felt like some, someone was coming after me.

SK016

I: Okay and have you ever felt unsafe or that your life was in danger?

SK016: Uh... yeah.

I: Was it kind of the same time or was this um, different at all or?

SK016: Uh, it was part of my psychosis.

SK018

I: Okay and this is kind of a broad question but how would you describe your experience with psychosis?

SK018: Frightening.

SK022

I: Okay. So how would you describe your experience with psychosis if you had to kind of describe it to someone?

SK022: Um… its's, well like life changing to be honest with you. Um, I, you do things that you would never think of doing. Um, like you're not in control of your own body almost and what's going on.

SK025

I: So, could you tell me a little bit about your experience with psychosis?

SK025: Um, it was a pretty frightening experience that I had…And… yeah I felt like I was being um… hunted I guess? By people that are around me and I couldn't find like a safe place to kind of cool down my mind. My mind was racing all over the place.

I: Right. Ok. And have you ever felt hopeless, unsafe, or like your life was in danger?

SK025: Yeah. I felt that a lot when I was going through the psychosis.

SK026

I: Have you ever felt hopeless, unsafe, or that your life was in danger?

SK026: Um, I mean when I was really sick I had delusions about thinking people are out to get me or like trying to get me or something…

Ultimately, the connections between insecure attachment, trauma, and cannabis are complex, and these bidirectional relationships are depicted below in **Figure 3.1**. The individual risks as well as the various connections between them can lead to a worse psychotic illness which, in turn, further exacerbates insecure attachment characteristics and trauma, creating a vicious cycle.

This cyclical pattern, if left untreated, can also lead to devastating consequences and the worsening of these risks is described as leading to feelings of hopelessness and sometimes potentially deadly outcomes. Patients, as reported by both themselves and their families, are described as having experienced instances of self-harm and suicidal thoughts or attempts. These occurrences are linked to psychological stress, including their illness, trauma, feelings of purposelessness, and fear of an uncertain future. Cannabis use is also occasionally associated with suicidal thoughts and mental distress.

SKD

SKD: …he told me, I don't know how much of this is true yet because again he is unwell right now, but he told me that the reason that he did it (cannabis) this time was because he thought it would kill him…

SKF

SKF: I didn't know like he he left and then uh, I called hospitals and stuff looking for him, they said he was found by the river with hypothermia and he took all of his pills.

SKG

SKG: …he has attempted once. He was in that was he had two admissions in 2019. When he had the break and then two weeks later he went back in again because he had a suicide attempt.

When asked what they think precipitated the attempt…

SKG: Well I think the first one, I think he was just he was in hospital, and I think he just thought I don't know like I don't know for sure but um, I think he just thought it was hopeless that I have no where I am not going to go anywhere I am told I have this condition or this disease or illness and um I think he just yeah, he uh….he didn't know how to voice that or express that or… and didn't yeah so.

SKH

SKH: …that is why we put her in the hospital because we were like okay this is getting too risky. Her life is getting worse, she might actually get into like harm, getting hurt unknowingly by just being at the wrong place at the wrong time.

SKH: We were worried about, not so much that she was suicidal or anything. But more so that she was putting herself in harm's way.

I: Right.

SKH: So and that is kind of what psychosis does she just doesn't see clearly.

SK021

SK021: …well I almost committed suicide when I was like uh, I think, I can't remember I was still a kid back then and I was just unhappy but uh… well with what life is and yeah.

SK011

I: Have you ever felt hopeless, unsafe or that your life was in danger?

SK011: I have yeah. In the past, it's better now.

I: Okay so, so um.. more so leaning to which kind of hopelessness or kind of the lack of safety or both?

SK011: Um.. kind of both. I drive like pretty reckless um… and doing things like doing like almost 150 KM just in and out of traffic umm. Doing reckless stuff like that, um… and then what was the other one sorry?

I: Um.. feeling hopeless?

SK011: Oh yeah.. It was more when I just started smoking to help, I was always pretty depressed and felt really lonely and isolated so I was hopeless lots, thoughts of suicide at the time.

SK010

SK010: Yeah so it would just, just repetitive negative thoughts that were not on my own like I would not think of those thoughts, they were just there. Um, negative thoughts of hurting myself, hurting others…

SK004

SK004: I definitely felt hopeless and unsafe when I was first trying to figure out what was going on with me and then in my teen years as well. In danger when I was really sick I felt very in danger a lot.

SK022

I: Did you ever feel unsafe or that your life was in danger?

SK022: Um, yeah. Like when I was going through my episode I am lucky I didn't die honestly.

SK024

SK024: But yeah, um…and I didn't know what was going on kind of thing and I just one day just tried to decide to...or that night I guess I just decided to listen to the voices and I tried to uh tried to kill myself…

SK025

I: And have you ever felt hopeless, unsafe, or like your life was in danger?

SK025: Yeah. I felt that a lot when I was going through the psychosis.

SK027

I: Ok. Um… ok and then aside from what you had already explained, have you ever felt uh hopeless, unsafe, or like your life was in danger?

SK027: Um, yes when I was a teenager I was suicidal but that was when I was going through being molested by my friend.

From these descriptions, it seems that not only the individual risks, but also the relations among contribute to a more severe illness, and worse overall outcomes, including suicidal behaviours. These relations can be seen in **Figure 3.1.**

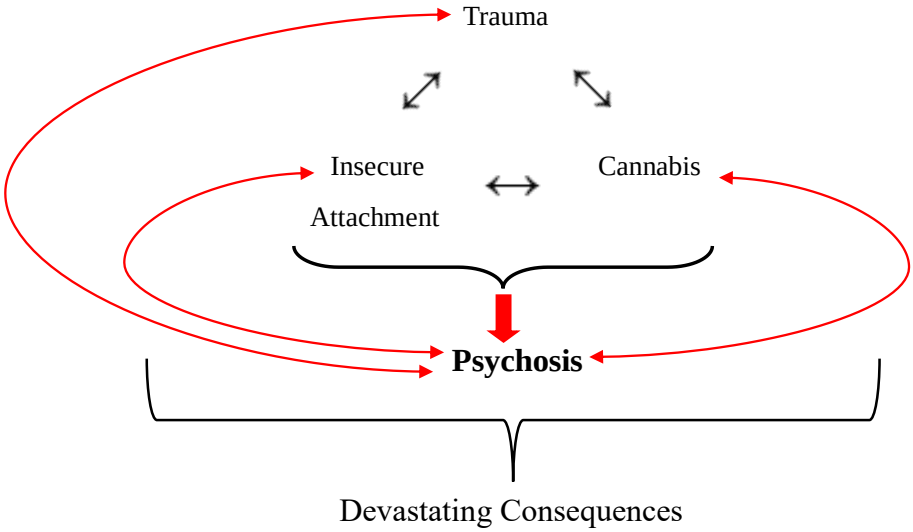

Figure 3.1.

A Circular Depiction of the Connections that Occur Between Trauma, Insecure Attachment Characteristics, and Cannabis Use, Including the Bi-directional Role of Psychosis, and the Devastating Consequences as a Result

3.6.1 Interpretations of Theme III

Trauma, insecure attachment, cannabis use, and psychosis were described by participants to be interconnected in varying ways. Moreover, it appears that certain sequences of events can lead to predictable pathways of deterioration that ultimately create vulnerability for psychosis and suicide.

For instance, insecure attachment of young individuals affected by parental unavailability (through divorce, drug use, illness or abuse) can be exacerbated by additional interpersonal or external trauma, resulting in emotional wounds that do not receive the proper attention and further prompt some participants to resort to cannabis as a coping mechanism. This approach is initially meant to dull emotions and create a sense of intimacy with like-minded users. Unfortunately, many discover that it creates unhealthy bonds with unhealthy individuals, worsens illness and widens the gap with supportive figures that disagree with the choices. Insecure attachment (as an intrapersonal construct) can also be enhanced further by the psychotic illness itself, creating a feedback loop. The experience of the illness is also very stressful (verging on traumatic) for a number of participants, which further feeds into the cycle of trauma, cannabis use, and increased illness severity.

It appears that clinicians need to become aware of the possible pathways of vulnerability in order to recognize them promptly and intervene pre-emptively.

As noted earlier, cannabis can be used for coping with psychotic illness, but also to compensate for feelings of attachment insecurity, which in early stages can stimulate relationship formation

(often the unhealthy kind) and in later stages lead to demotivated and avoidant states, where social withdrawal is tolerated and even embraced, and lack of trust increases substantially. This gradual development should be recognized by clinicians who need to understand why one might continue to use cannabis despite advice not to. Given the short-term emotional numbing experienced from its use, cannabis is used as a method of coping, falsely believed to help manage these traumatic experiences. Unfortunately, patients seem unaware or unable to consider the long-term downsides at the time of heavy use.

Despite inconsistent levels of knowledge of the risk factors, participants did make some connections between the risks. Often, they did not directly relate the risks together unless prompted, which might have reflected a lack of understanding, or apathy.[199] However, once prompted, some participants identified various connections, and provided detailed descriptions as to how these relations might interplay. For others, the relation is unclear, or the risks are mentioned in passing, indicating that some have a better understanding about these relations than others. However, the patients that *did not* see any relations, or simply answered "no" when asked if they saw connections between the risks, seemed to be in a worse state of illness. Although an evaluation to compare the differences statistically was not done, these participants often had shorter interviews due to poor conversation, low affect, and difficultly with communication. It is important to note that while these participants recognize connections between the individual risks and their illness, they do not understand as well the *interrelations* among them. This suggests that individuals who understand both the individual risks *and* their interrelations might experience a less severe illness.

As a result of these harmful patterns, many participants described occurrences of self harm or suicide attempts. These events were reported as especially high during the peak of their illness, times of psychological stress, and times of high cannabis use. This finding is supported by studies that show an increased risk for suicide and self-harm in patients with psychosis.[5,6] These vulnerabilities and occurrences might contribute to increased substance use for coping, increased suicidality, and treatment non-adherence.[128,129] Despite these harmful experiences, in the present study, most participants discussed these difficult topics in the past tense, suggesting they have moved on from these experiences. Additionally, none of the participants became emotional or upset during the interview when discussing these past difficult experiences, which also might reflect healing.

The ability of the participants to reflect on their experiences objectively and describe them in the past could show an optimistic transformation that occurs despite adversity. This demonstrates that (at least in recovered individuals) harmful experiences are sometimes used as beneficial motivators for change, which might reveal a powerful step in the journey toward healing. Identifying helpful motivators that might stem from harmful experiences might also help restore hope.

3.7 Theme IV: Clear as mud: Patients' and families' understanding of things that matter

3.7.1 Subtheme i. Connections between risks- varying understandings

It is known that there are varying connections that exist between risks; however, both patients and their family members have inconsistent views on these connections. While all the patients who previously used cannabis have reduced or quit their use, understandings of the harm cannabis can cause vary among patients. Some clearly recognize the detrimental influences cannabis has on their illness, and have quit entirely.

SK004

I: Okay how would you describe your cannabis use now versus over time?

SK004: I haven't used cannabis since I was in the hospital. So that is over two years ago.

I: Okay. Do you see any relationship between your use of cannabis and your psychosis like do you think that is why you got psychosis from the cannabis use?

SK004: I think it contributed a decent amount. I think there were other factors involved but I think the cannabis use was part of it…But I used magic mushrooms like I think probably all of it likely contributed.

SK011

SK011: Um.. so I started smoking when I was 17 uh.. and then I smoked probably once a month or so it wasn't very often and when I was in my 20s I was smoking a few times every day and that's when I noticed everything um.. started to get bad… And now I don't smoke at all.

I: Okay. Okay… and um… once again you kind of said a little bit already but how would you describe the relationship between cannabis and psychosis in your opinion?

SK011: Um.. I think they go together pretty well. I never really experienced any of the real psychosis thoughts until I was smoking weed and so I don't think I'd probably would experience it so much if I uh, never did smoke weed or did drugs.

SK016

SK016: Um… I would just, that cannabis fueled my psychosis like… like when I would smoke, like when I would smoke like, say if I smoke now probably would get really bad anxiety and delusions and stuff like that… But now that I don't smoke uh, I don't get anxiety and delusions.

SK022

SK022: Um, after I had my psychosis episode I completely stopped smoking cannabis. Um, it wasn't voluntary at first but I was staying with my parents and they were against it. So I stopped and now looking back it was probably one of the best things I've done because I can hallucinate off of weed and that's kinda scary now knowing that I have gone through a psychosis.

SK020

I: Okay. Um, and you've kinda said already but, do you yourself see any relationship between cannabis and your psychosis at the time?

SK020: Yeah I do.

I: Okay. And do you, I guess do you see it as um, something that just could precipitated it or maybe something that led you down that route entirely or how would you say that relationship is?

SK020: I think it definitely led me down the route. Um, especially knowing that it can like, it was causing me to hallucinate before. I don't think that it made my episode any better… And I was smoking at the very beginning of my episode I was still smoking cannabis through it and so I think it definitely made it worse.

SK024

I: What specific factors do you think lead to experiences with psychosis uh, you mentioned that but was there anything else that you found or was it just kind of the lack of control or…

SK024: Um….well…..um, the biggest factor that I would honestly…..that I would say, would be my smoking at the time. Um, I was doing it pretty heavily, kind of like an all day everyday sort of thing… um… but uh, yeah but like even before like I never like experienced the voices until like I kind of greened out sort of thing that night. Um… and uh, yeah like I have had bad reactions to marijuana before but there was nothing like that.

SK026

I: Oh okay. Okay. Um, how would you describe your cannabis use um currently? Um,

SK026: Currently?

I: Yeah.

SK026: I've been clean for almost four years now.

I: Oh, okay. So you are not using at the moment?

SK026: Nope…Uh, almost, it will be four years in January.

SK026: …. Um, but, I mean when I started getting sick was when I really kind of I mean I was pressured a lot to use (cannabis) even though I was kind of leery about using, and it took me honestly sometime to realize what the cannabis was doing to me, and that was part of the reason why I was getting sick. Not the whole reason, but definitely part of it.

Some have reduced their use for reasons loosely related or unrelated to their illness, such as quitting cannabis for personal reasons, and other participants remain unclear, describing harms such as anxiety and memory loss rather than explicit psychotic symptoms, or expressing overall uncertainty.

SK010

SK010: I stopped using a large amount just because of a personal decision like it wasn't like all I am going to do it because of this. No I just decided it could be money you know like you know you don't have money so you can't go grab it today. Um…you're not working so you can't, you don't have money to, to go buy right.

SK020

I: Okay so ultimately um, was the reason for quitting due to your diagnosis or did the physician uh, did the psychiatrist kind of tell you or was it a personal choice?

SK020: Uh it was kind of personal choice but also because of my diagnosis.

SK010

SK010: I don't know if marijuana is the only case but, like I'm not, I'm not a doctor, I'm not like, you know like informed in this to give you the right answer.

*I: That's okay. There's no right or wrong answer remember *chuckles**

*SK010: Yeah that's what I'm saying like I don't know the answer *chuckles**

SK020

I: Okay, and um, would you say in your opinion that you see any relationship between that cannabis use and your psychosis?

SK020: Uh yeah I guess so.

I: Okay so um, could you describe kind of like what you, how you see them together or?

SK020: Uh I see that it's not the best.

I: Right so just as far as symptoms or?

SK020: Um… yeah kind of like anxiety and uh memory loss.

SK027

I: Right. Ok, and do you see any relationship between your cannabis use and your psychosis?

SK027: Not really.. because I have been like I never steadily used it.

I: Ok.

SK027: I could be wrong, it could be the onset of it, I have no idea but… like ever since I went through psychosis I have been completely sober off of everything. So.

Perhaps most alarming, some participants continue to use cannabis occasionally for various reasons, despite experiencing symptoms. Two patients even believe that cannabis might be beneficial for certain aspects of their illness. For example, SK010 described a certain strain as "okay" since they do not feel as anxious using it.

SK001

I: So um, are you, have you been using the same amount over time? Or do you gradually increase?

SK001: I like to keep it at a bare minimum. I don't like to have lots of it, you know. It's just a once and awhile thing, maybe like once a day, maybe… I've cut down a lot, due to my nurse, she's like yeah it may like increase the activity of my mental illness, and so I was just like trying to like slow down a little bit you know.

I: You think that's contributed to your psychosis?

SK001: Well not really, it actually helps me out a little bit. It like draws my focus away from it, and then I don't really pay attention too much to it.

SK021

SK021: Uh… I think, well I heard that cannabis kinda amplifies like the side effects of psychosis but at the same time like I don't like… like I joined like one of the rooms that uh, people were smoking cannabis in at one of the parties that I attended and maybe I guess I inhaled some fumes or something like that but… I feel like it doesn't amplify it that much. Like it gives you a good mental state and plus it allows you to socialize and stuff like that…

SK021: …I think there's some positive things to it like uh, when it comes to like therapy and stuff like that cause when it comes to psychosis uh, your mind gets uh, blurred a little and creativity kind of like uh, suffers a little and recreationally we can use cannabis or something like that I think it would help.

*SK021: I can conclude my uh, experience from it and I would try it again if I could. I almost had the chance to try it again but it just happened to be so that I drove into one of the parties that I attended had it. I just couldn't drive while high so *chuckles**

SK010

SK010: Um…it has to have certain type of terpenes inside of them and I go for the same type of terpenes because those terpenes give me the same feelings. If I don't find those terpenes it just ruins everything and just makes me paranoid and makes me anxious and all that, but when I do find that certain type of terpenes I don't feel anxious, I don't feel paranoid or anything.

A similar pattern is observed in discussions with family members. Most family members recognized a harmful connection between cannabis and their loved one's illness.

SKA

I: And um what is the, do you know the relationship between the two? Like the cannabis and the mental health?

SKA: Yes I do and it is something that has been concerning to me.

I: How so?

SKA: Well I am just worried that I mean I know he already has the um diagnosis right but I just worry that it might interfere with any of the positives so far with medications and worries that mentality to a health point…But I know he uses it when the voices get too like it's not a um, how do you say it, it's not like over use, but still it's just a concern I guess as a parent and the fact that because of his mental health I worry that any kind of other drugs or whatever might interfere with how he is doing now.

SKE

SKE: Yeah for sure, I mean, um I think, from everything that has happened in our family and just all of that, that if you started (cannabis use) early, and you do like too much of it you are at a great risk of falling into psychosis. Especially if you already had like an underlying tendency to develop that later in life, it (cannabis) will trigger it (psychosis) and make everything happen so much sooner. And the earlier that you start doing it (cannabis), um especially like 12 or 13 before you are really developed, um, it can be really really a it can have horrible consequences. Ah, not everyone that does it will go through this… I see very clear connection between weed and psychosis, like 100% especially in this case… It is like poison for his brain.

SKF

SKF: Because his psychiatrist and nurse informed me that that (cannabis) is the reason he has the psychosis and that it is not good for him to continue smoking it…So it is not good for him so I don't, I don't, I don't like…I don't condone it.

SKG

SKG: Uh, hmm. I would say he is always sort of in a, um…for him currently, I would say his psychosis is sometimes it's…it's, you can, and a lot of it depends on whether he is using marijuana or not, right?

SKG: you know he seems to be tampered down a bit probably you know with the meds and stuff and of course if he is using marijuana it's it's he, he um, that increases and he is uh more more so.

I: Ok. And uh do you have any idea what might have caused the initial episode. You mentioned the marijuana, was there is there anything else that, in your opinion.

SKG: It's it's… I am, you know, it's hard, um, I am sure that was sort of a trigger for sure.

SKH

SKH: So it (cannabis) causes a dependence, an extreme dependence of it and yeah so she was doing it probably a couple of times a day for a week and I think it might have even been two weeks. More or less, and that is kind of when it uh, the psychotic episode actually happened when she um, she actually just went into the back park behind our house and uh, she had had an episode and like she was high on drugs…

SKH: I knew, I was almost positive it was the reason it (psychosis) was happening. Because she never had it (psychosis) before. So to me it (cannabis) was the cause of it (psychosis). It is pretty simple, you don't have schizophrenia and then all of a sudden you

do. Um, you know and the only thing that you are doing differently is drugs. So I mean it is not that you know, not that hard to figure out.

SKI

I: Right. And um, do you see any relationship between his cannabis use and his psychosis?

SKI: Hmm…. It gets worse. The psychosis gets worse, it is…I think like I have said yeah yeah that is what triggered it…to have the.. the breakdown…

However, other family members did not see as strong a connection, have never considered it before, or do not think it is connected at all.

SKD

I: K. Alright…um, once again if you are not sure, just that is fine as well. But what is your current understanding of the relationship between cannabis and psychosis?

SKD: I didn't…I I am I don't know. But there is one.

I: OK.

SKD: I don't know that at all.

SKC

I: Ok. So uh what is your personal understanding of the relationship between cannabis and psychosis? Do you have any ideas of it or any um opinions?

SKC: Nope. I don't. I don't really know. I didn't realize there was that relationship.

SKB

I: Alright and what is your current understanding between cannabis and psychosis and the relationship?

SKB: Uh I never really knew anything

I: Okay, okay… and how have you felt about all of this and him kinda using cannabis in general?

SKB: I, I probably don't…with cannabis I imagine there are other drugs that are more you know, not as legalized so it's you know… Medicinal now too so I think's it, not using it or you know, in moderation of course but…

I: Yep and um… before I guess it was legal and you know it kind of changed a lot over time, did you feel differently or were you always kind of feeling like that?

SKB: Uh, cause I never used it so I never uh, but I always kind of uh… similar reactions to other people. Some people it affects different… Just like alcohol you know, you know how it over the years but I think they got everything straighten out now I think and cannabis now.

SKB: Yeah I don't know if cannabis really induced psychosis I… I think it was just a way of coping with it maybe you know, trying to use cannabis.

Similarly, the harmful influence of trauma and stressful experiences and its connections were inconsistently recognized by patients and their families. Trauma was often discussed and connections were sometimes made between risks, or to the psychotic illness.

SKA

SKA: When he came to live with me after his father passed away, he was doing nothing. And that's kind of when I believe that um you know it was drugged induced, schizophrenia because that is when he started.

I: Yeah his dad passing away, like those times when he is missing him, like back in the past do you think that used to affect his mental health?

SKA: Oh of course it did you know, I can't deny it. It affected all of us.

I: Yeah.

SKA: Still does.

SKA: …his father was dealing with his illness and he was in the last stages so definitely I think it was probably that's probably what influenced a lot of the (cannabis) use.

SKH

SKH: Like the trauma that happened, and the rebellion, and the losing of her friends, and you know kind of pushed her further to people that weren't good for her which pushed her further to being part of that (party) scene which you know.

I: mmmhm.

SKH: You know it was kind of like one one step led to the next… yeah. And when you are rejected by friends that makes it way worse too. Yeah so they kind of all just added up to making things worse for her.

SK004

SK004: I do think there is a connection between my trauma and my drug use.

SK011

I: Um.. would you say that you have any history of trauma in your life?

SK011: Yeah.

I: And do you feel like there is a connection between that and cannabis at all?

SK011: Yeah there's some things that when you smoke weed you kind of forget about it. Um.. and it kind of makes the pain go away… Um.. so I can think that's one reason why I smoked so often.

I: Right. And would you say that there's a connection between the trauma and potentially your psychosis?

SK011: I think so, um.. some of the stuff when I was having the psychosis um some of the thoughts I had were because of things that happened in the past I think.

SK020

I: Right and have you ever felt hopeless, unsafe or that your life was in danger?

SK020: …. Maybe before I got the diagnosis I got into uh, well it was kind of a fight with a bigger guy. Like he kind of just put my head on the ground so that was a danger in my life. That was right before I got the diagnosis… So that kind of triggered it.

SK021

I: Right and um, do you think there's any history or any connection between any trauma and your psychosis and its development or?

SK021: Uh… I think I would say yes. Like… I think my trauma stems to the fact that I have trust issues because uh, I still remember a lot of the abuse I got from my parents like the verbal abuse use and uh even physical abuse and also well, that's why I kind of learned to lie and kinda like try to manipulate people and stuff like that and I was trying to look out for the best way to defend myself… And I think, like what I said, I think I dulled and at the same time like, it's just like, it's paranoid it grows over time like you know, trust issues and stuff like that. And over the course some of time it just like, if you keep bottling it up then suddenly it just, it just kinda like goes down to the kind of psychosis…And trauma has a lot to do with it.

SK022

I: Okay. And do you think that there was any connection between any of these (traumatic) events and um, both your cannabis use or your psychosis or both?

SK022: Uh, yeah. It was actually after I was assaulted that I started using marijuana more.

I: Um, and what about the psychosis with that episode, do you think there was any relationship at all?

SK022: I think there could have been yeah.

SK024

I: …and do you think that uh this trauma has uh impacted your cannabis use or?

SK024: ummm…yeah I guess it kind of made me a little bit more rebellious, especially as a teenager um, cause yeah, I would I would sneak out and uh I would you know I would go smoke pot I would go drink um, steal booze from my dad, I wouldn't I wouldn't like actually commit crimes or anything but I was just doing stuff I was told I wasn't allowed to do kind of thing.

I: mhmm, and uh then lastly do you think it has do you think it impacted your psychosis at all?

SK024: A little bit. Like when I was in when I was in the hospital even like kind of trying to sleep or even when I was at home after the hospital like um like those voices they were reminding me like what happened back then, where I came from like make sure I knew like I deserved to be treated like that sort of thing.

SK025

I: And uh, what about in terms of your psychosis or or mental illness at all would you say it has had an impact on those or?

SK025: Yeah it did.

I: Could you elaborate?

SK025: Essentially, yeah when I was going through the psychosis, I also like created this alternate world where I thought that I had to like prove myself in some way. I can't really explain it but it was essentially thinking that every time I made a decision, one decision led to another decision and um, there was this alternate proving of myself somehow and I thought I was feeling this proving to people.

I: Right.

SK025: I can't really explain it but it was a really weird mental state that I was in.

I: Yeah, and you think this was linked to your childhood trauma?

SK025: I think so. Yeah.

However, connections were not always made. Even when a relation was suspected, some patients and family members reported being unsure of its nature, or thought the stressful experience was unrelated to other experiences.

SKC

I: And do you potentially see a connection between the trauma and cannabis or psychosis or mental health in general?

SKC: Yeah like I just don't know whether umm… tsk, you know the trauma caused the the psychosis or was related to it or if mental health led to the trauma, which you know what I mean, like like was the trauma was the mental health issue there first, but not you know expressing itself as psychosis.

SKD

I: Do you see a connection between her trauma and psychosis, or just her mental health in general?

SKD: I am not, I am not certain.

SKE

SKE: His best friend had passed away a few years ago… it was unfortunate, his friend had committed suicide, like unrelated you know…

SKE: … He (Dad) was abusive because that is how he grew up he didn't know, he is not like that at all now. But at the time he (the patient)was like "I was telling the nurses about that" and I was like "oh that impacted you?" or something I just felt like we were so little, like it wasn't that serious. But he was like yeah it did. And I have no idea so it almost makes me feel like everything. I had no idea that it (abuse) like impacted him (the patient).

SK010

I: Um, do you feel there's a connection between your history of trauma and your cannabis use?

SK010: Hmm…that's a good question. Um…I'm not sure. I don't know.

I: Okay, and do you think, what about your history of trauma and psychosis? Is there a connection between those two?

SK010: Um I have no idea, you would have to ask somebody else that I grew up with that knows me well.

SK012

I: Do you have any history of trauma in your life? This could be anything from emotional, physical um an event that's happened?

SK012: Uh…mental abuse from my father of my kid.

SK012: Okay and would you say there's a connection between that trauma and your cannabis use?

SK012: No.

I: And would you say there's a connection between that trauma and your schizophrenia?

SK012: Um… no.

SK016

I: Um... like do you think that having that childhood experiences influence you to start using cannabis or?

SK016: Uh no.

I: Had no connection?

SK016: Uh no connection

I: Okay and do you think that childhood experience had any connection with your psychosis in your opinion?

SK016: Um.. um, it's hard to stay cause I don't really think about my childhood.

SK027

I: Ok and do you see any relationship between the trauma and your psychosis or your illness?

SK027: I thought that the trauma from like going through being molested by my best friend was the root of my psychosis but I find that it more of the root of my anxiety.

I: Right.

SK027: And I feel like if I can control my anxiety I can control my psychosis because anxiety is what happens and that is one of my early warning signs. For psychosis is my heart starts to race and my mind starts to race and then.. yeah.

I: OK so you think they are all kind of connected in a way?

SK027: I do.

I: Ok. And what about your cannabis use in the past. Do you think that was linked to your trauma at all or no?

SK027: No… I don't think so.

Overall, the perspectives and understandings across the participants interviewed was not consistent, suggesting a potential gap in knowledge translation. The views within patients and family members themselves were also inconsistent, as described in the following section.

*3.7.2 Subtheme ii. Wanting what is best for their loved one*s

Most family members interviewed reported not supporting their loved one's cannabis use, with some expressing stronger disapproval than others. Despite this opposition, convincing a loved one to quit cannabis can be a challenge, and sometimes efforts to do so were not made by family members due to concern over the consequences.

SKA

I: How do you feel about him using cannabis?

SKA: I don't agree with it… But I know he uses it when the voices get too like it's not a um, how do you say it, it's not like over use, but still it's just a concern I guess as a parent and the fact that because of his mental health I worry that any kind of other drugs or whatever might interfere with how he is doing now… Like I just had a chat with him this morning and not that he was using at the time but I kind of just said um I think if you are going to use um, cannabis is a medicinal kind of purpose than that is how it has got to stay or use it only when you really need to help you with your voices in your head but I don't want this to become a big like another crutch or yeah.

SKC

I: Mmhm. Um and I guess what are your feelings about her using cannabis or or like potentially when if she had it in your home, what is your opinion on that?

SKC: Uh, well I don't really like it because I think that there is not enough known about the interaction between cannabis and other medications and she is on quite a few…so I

am not in favor of her using it but I haven't umm you know, I kind of think she probably does use it in our home.

SKD

I: And how do you feel about her cannabis use over time or potentially her having it in your home at the time, or what are your opinions on it?

*SKD: Um, well I, I, I don't know you know, that it is beneficial for her and um, um, and um, just as **** here had mentioned, you know hearing her cough, you know knowing that that must be some inhaling going on, you know like. This you know. Is frustrating. We have been careful you know, not to tell her that she couldn't, or can't do that in our house, because we are you know, concerned of like what you know, what that might cause.*

I: Right, but overall you would say that you you don't really agree with her using it, or..or?

SKD: I…I guess I am, I am, you could maybe say that. I I don't know if it is that it is beneficial. If it was beneficial I would have no problem with her using it, but um, I I don't know that if it is or not.

SKH

SKH: You know I am not, I am not getting her to stop doing drugs or anything like that. And I am not over parenting her. You know at the time when the psychosis happened it was like all hands on deck just trying to keep her from dying, almost, almost to that point, right? Because if you are like taking off in the middle of the night going to the city or another city or you know friends that you thought were coming to get you and you know like just risky behaviors.

I: Yeah.

SKH: So we were very protective as parents not to not to save her in a sense, right? And what 21 year old wants to be saved. No body.

I: Yeah, yep yep.

SKH: Right it is like you think that you are being parented and then you just run faster and harder.

I: Right yeah. Yeah. That makes sense.

SKH: You don't understand that you are trying to actually save them from themselves.

SKI

I: Ok. K. And how did you, what did you think of when you saw him smoking or when you found out he was using cannabis did you agree with it or were you upset about it?

SKI: No…no I was upset. It was…it was… no one in the family ever used.

Even when efforts are made by family members in an effort to reduce or quit cannabis, patients often resist, and continue to use initially despite experiencing harmful experiences.

SKE

SKE: …he looked at me and by the way at this point he didn't ah, he didn't actually believe in weed psychosis, any of this. He is like you are all just crazy. So he gets into the car and he looks at me and he is like "I am going to do so much weed, just now, unlike ever before, I am going to buy dabs" and he was making me so angry. And that is what he did. He did so much weed. And for the first time he experienced a panic attack, and thank God he did because it is this panic attack that made him realize that maybe there is a connection to to smoking weed and it triggering psychosis for me…Fast forward, he is in Dube and I talk to him, "hey what happened to you, you were doing great" and he admits to me that he did weed again. And the thing is he is still so sick right now that I can't really get a full story of how, why. But the gist of it is when I asked him,"did you think you were fine now, like you think you can just do weed again" and he was like "yeah I thought I was fine again" because the symptoms were more or less managed, he thought he is good to go. Yeah, he was still on heavy psych meds but as far as he knew, he is fine, he thought he could do it again.

SKF

SKF: But now, like ever since he got diagnosed I, I told him that he cannot smoke weed and he still tries to but he I tell him that he can't but he can't smoke weed or he can't come to my house if he is smoking weed.

I: And um, you kind of answered already but how do you feel about his cannabis use?

SKF: I, I don't approve of it.

SKF: He…he um, he is kind of persistent on. Like he knows he is not, he shouldn't be smoking it and he knows that I..I don't like him smoking it so that is what I mean, I don't know if he is still buying it and if he is, he doesn't do it anywhere around me.

SKG

SKG: And then um, you know and then um, as he got older and when he was in puberty he started you know using marijuana and I mean we talked to him about that numerous times…

*SKF: …but you know of course you know he started doing it and we would he would say oh it makes me feel better and you know I think they do think it makes them feel better but an hour or so later *laughs* right? They are in, they are in psychosis, right so.*

I: mhmm.

SKG: Right so, um, so yeah his so how he views it and how we view it is quite different.

Regardless of the approach that the family members took regarding cannabis, they all reported wanting what was best for their loved one.

SKA

SKA: I am just one of those I guess leery mothers who just wants the best for their child, children… But I feel you know, like if I see him using more than once a day to use it I ask

him was this time necessary or was it just for the sake of doing it kind of thing so…Like everything is always for him in my life its always the best for him and he knows that…

SKC

SKC: I think that it was um… we we weren't real rigid on, you know, on telling her that you know, she shouldn't never do that, we you know I think we were…but I think we also both let her know that we didn't feel it would you know it was best for her to do that.

SKI

I: Right. Um… and would you say during those five years um… his illness affected your relationship or how did that kind of affect your relationship with him that those experiences?

SKI: Well.. for for me it did not it did not… it… um.. how can I say that…. Um… I don't know if I can say it did not affect... I am just…he is my son, that's that. I I always put it into my mind that he is my son I would not give him up.

I: Mhmm. Right. Ok.

SKI: I, I, I, I whatever happens I just try to to help him…

3.7.3 Interpretations of Theme IV

When discussing the risks of harmful relationships, trauma, and cannabis use with patients and family members, it became apparent that views differed significantly, and opinions were often mixed. Individual risks alone seemed to be more accurately recognized as harmful, rather than in combination with other risk factors, but not always. For example, only 4/17 patients still use cannabis, and even their use has diminished greatly since receiving treatment. However, the reasons for quitting or reducing use are not always related to their illness. For example, SK016 reported quitting due to increased anxiety, and SK010 to the expense. One participant, SK021, admitted that they would try cannabis again if given the opportunity, noting that the only reason they have not done it more is because they were not in the environment where they think that cannabis use occurs (such as a party/with friends). This shows that some of the participants do not make direct connections between their cannabis use and illness.

Moreover, the few participants who continue to use cannabis still reported current positive symptoms, which reflects a harm that is going unrecognized or ignored by them. For these patients, the understanding that even a small amount of cannabis is harmful is not as established, which puts them at risk for future use. This might indicate a gap in knowledge translation between healthcare providers and patients that could eventually pose a danger. However, it should be noted that a connection between cannabis use and illness might also not exist for some patients, which would provide another reason why some do not see any connections.

Similarly, connections between trauma, cannabis use, and psychosis are not always made by patients and family members. While descriptions of the traumatic event and descriptions of cannabis use were often independently provided, the connections between them were sometimes vague, or unacknowledged. For instance, patients with serious childhood or lifetime trauma might have noticed a temporal relation between high drug use and the traumatic event, yet still

not think they were connected. Occasionally this could be noticed by family members more than the patients, further suggesting the importance of including families in the recovery plans for patients. Once again, it seems that knowledge translation is not universal.

For patients, those who made better connections between the risks seem to be subjectively doing better. Although a clinical evaluation was not done, these participants seem further along in their recovery, as they are no longer experiencing psychotic symptoms, have formed lasting supportive relationships, and were easier to communicate with during the interviews. This was demonstrated by having shorter response times, fewer repetitions of interview questions, and what appeared to be a better affect. Perhaps recognizing the connections between the risks and addressing the root of their illness allows them to make a better recovery.

Conflicting views between family members and patients are also evident. Many patients continued to use cannabis initially despite advice from their family. Perhaps even more alarming are the reasons that were given by the family members as to why they did not agree with their loved one's cannabis use. Interestingly, it was sometimes not related to their illness directly, and instead related to adverse lifestyle changes or concerns over motivation. Regarding cannabis use, some family members took the forceful approach with their loved one, and tried to make them quit cannabis. Some took a more passive approach and tried to gently convince their loved one to quit, or did not say anything at all. Both of these approaches were often in conflict with what their loved one wanted (to continue using cannabis), and these efforts often failed initially. These conflicting views between patient and family member highlights a significant challenge that families face in recovery, and explains why efforts to convince their loved one to quit cannabis are often unsuccessful.

Since both gentle and forceful approaches by families frequently fail, more effort should be directed toward educating the patients. They are ultimately the ones who have to decide to make these changes. This approach allows patients to reach their own conclusions, which seems to be the most successful — if not the only — route to quitting cannabis while suffering from psychosis. While family support is important, it is clear that the motivation to quit or change needs to come from the patient themselves. Thus, alignment between patient and family views seems to not always be necessary. What matters is that both parties recognize the risks and connections in their own way, so the effective support can be provided when the patient seeks help.

Finally, although families were often initially pushed aside, or in the dark about their loved one's experiences, it is clear that they would do anything to help their loved one, and that they provided a huge amount of support for their loved one in their journey. Even when they were not in agreement with what their loved one was choosing, they still reported that they supported and loved them. While this might not be the case with all family members, the dedication that was seen in those interviewed is a quality that is admirable, and also something critical for patients' recovery, as described in Theme II.

3.8 Theme V: The rocky road to recovery: From initial confusion to final healing

Numerous problems are described in recovery, from initial help seeking, to the treatment itself. Before family members become aware of their loved one's psychotic illness, they often initially attribute the illness to something else, or do not understand what is happening. Since the patient's illness is a new experience that they have never encountered before, sometimes misconceptions and problems arise, such as dismissing early symptoms.

SKA

SKA: I can't actually I don't completely comprehend when he talks to me about these voices in his head and I was trying to put myself in his shoes and try and think of different scenarios how I can better understand him.

SKC

SKC: Um, well I think it was maybe about five or six years ago that we first noticed that um you know she was saying a few things that didn't quite you know, make sense… And I knew she needed help but I don't know if I really identified it as psychosis, because I really didn't know much about mental health at that time.

SKE

SKE: And um, the thing is all of us stopped kind of getting along with him. I honestly think this is why psychosis is such a big problem, because first of all, I had never even heard of something like that, like I honestly wasn't sure what that is. My mind never would have went there. I just thought, ugh he is becoming disrespectful, he is rude, we should just kick him out and like that was my mind set. I had no idea that he was like really slipping or already was in a psychosis I just we just ignored him, we didn't spend time with him…

SKE: I was actually getting angry at why aren't people understanding that there are just kids that are just crazy sometimes and I completely ignored all of that but then as time, he would, his behavior became more and more bizarre and uh my room is right next to his, like across from his…My understanding was honestly so limited looking back…

SKF

SKF: And when I saw him at Christmas time I just knew something was different about him. He was totally different. His personality and everything.

SKF: … I was like something is just not right because I never experienced anything like that before.

SKH

SKH: So I never I mean, I didn't or hadn't heard anything at that time about anything like that (psychosis). So, I kind of dismissed her at that moment…

SKI

SKI: Like uh, like it started from hallucinations and paranoia and all the stuff. At first we, we, we just suspected it was heavy drugs.

The lack of early recognition of illness causes a delay in help seeking, and often help is not sought until a major event happens that deems the situation an emergency. This event sometimes results in drastic measures that are needed to get help, such as court orders, or visits from emergency services.

SKA

I: Um what um, can I ask what was some of the things that you had to do to get him into treatment?

SKA: I had to get a mental health warrant to have him hospitalized.

SKB

I: And have you personally ever resorted to drastic measures to help him receive treatment for anything?

SKB: Yeah that's when we uh, we had that court order a few years ago.

SKF

SKF: …he went to the room and he came out with a red mark around his neck and I realized that he tried to tie his laptop cord around his neck and then I was like okay that is it and then I called the cops…

SKG

SKG: …he hadn't come home and he wasn't answering. So he was found by someone. He was lucky it was not a really cold November day, at night he was found about 6:30AM at a park. Um, like passed out. Like he was semi-conscious right. Yeah. He was not really responsive … and so he was taken by ambulance then and so I went in and then the police came here...And then um, and then the last time he went in he went in on a warrant…

SKE

SKE:. …he was just so sick again, like, ugh, he was just not even taking in what I am talking about and he ran away actually. He just took off…I called the mental health police...

SKH

SKH: Uh… we tried to get her to go to sleep and she wasn't going to sleep so it was, she was up all night it was 7AM and I think she ran outside. And at that point we knew there was nothing we could do other than call ambulance and we did.

SKI

SKI: He… he… he did not mention about suicide or anything. But he punched his face.

I: Okay.

SKI: He hurt himself, he make a bruise here…

I: Right. And is that kind of what prompted you guys to um, get help or?

SKI: Yeah. Yeah.

Family members also described challenging scenarios where they were left in the dark about what was happening. Often, those interviewed said that their loved ones isolated themselves and did not reveal the struggles they were going through.

SKA

SKA: But I am not sure because or even prior to that alright he was isolating himself you know… And I was out of the city at the time and I wasn't even aware until he moved in with me that he was using so.

SKE

SKE: He never did actually get help, but I didn't think he needed help I thought he was fine.

Sometimes this isolation and distrust are linked to traumatic or stressful experiences.

SKF

SKF: Um, no. like, like, when that it what when I thought something was wrong and he kept, cause he would keep saying you don't know what happened and I am like well what happened. To this day he will not say a word to me anything has happened to him so I don't know because he was gone from almost a year with his dad and they are not a very healthy family at all…So if anything happened to him I don't know because he won't tell me.

SKG

SKG: We do feel that there was something dramatic that happened to him when he was probably in grade 10 and we approached that with him, as we did with the psychologist with him but um he wasn't willing to talk about that. We think that um something he got into a situation or was in a group and didn't know where it was going. We think it was perhaps something sexual happened. We don't know for sure that is just our thoughts… you know we said you know you can talk to us about anything, we brought it up when we were with the psychologist and he got teary but he would never sort of open up and I don't know if he ever did when he saw the psychologist at all or not, the few that he saw over the years.

Since treatment was described as often occurring late, or after a major event, due to the lack of initial symptoms recognition by families, the effectiveness and speed of the treatment became highly important for patients. However, even once treatment was sought, numerous challenges arose even after the process began. These challenges were described primarily in relation to first-line emergency services, as opposed to specialized services like the EPIP clinic.

SKC

SKC: … you take a person to the hospital five or six times and they just keep you there for 15 hours and then send, send you home with no resources or anything, that's, I mean that is a bit of a bone I have, like. You know with the supports.

I: yeah so then after, I am just curious, like after that did anyone kind of stay in touch with her any support systems from like…

SKC: Nothing

I: Psychiatry.

SKC: nothing, there was no psychiatrist…. they were like no she can go home today. You are like what?

I: so even, so she she kind of had a suicide attempt and kind of left the hospital with no diagnosis and no support system?

SKC: Right. That is right.

SKC: I – I do feel like I realize she needed help but getting help was really biblical…it took years to get help.

SKE

SKE: He was like let's just get you checked up, if you are good, we will bring you right back. So they went and he actually got admitted to Dube Centre. But unfortunately, so this is still I don't know about psychosis or anything, he is back home in like two days or something and I am terrified because I am like it is one thing that my parents didn't see any issue, but like the professionals let him come home, like what ever is wrong with him I highly doubt they figured it out and fixed it in two days.

SKF

SKF: …I took him three times and they kept sending us home. One of them even said it sounds like a domestic dispute. And that was really frustrating. And even the nurse, the nurse is the one that came and picked him up herself because they kept sending us home. He was, he was…they wanted to stay in the hospital at Dube… But they kept sending us home. And we were waiting for six hours just to get sent home again…

SKG

SKG: His last experience (with the hospital) was not good. Um, and um, I when you know they said he could go home, he was told that before we were. Um, and they they just assumed that we would take him home. And uh. We had said no and when we had said no and when we had a meeting with them my, well I asked if we could have a family meeting and then they set it up but it was over just the phone then because it was during COVID right…. just what we were not happy with that um that experience that time it was not um great and not good how they handled it and.

I: Yeah.

SKG: and yeah it was uh, they basically were when we said we weren't taking him they were quite upset with us that we weren't willing to take him and oh well we will just you have got 24 hours to make up your mind and uh otherwise we will drop him off at a right… So it was just yep just not a good experience…

SKH

SKH: The hospital, not great. They over medicated her. I was really upset actually um when we talked to a psychiatrist outside out of the field and we talked to them about what they were medicating her and how much they were giving her, the doctor freaked out and said I they were pretty upset they were giving her way too freaking much medication…But the doctor was like um, they basically they basically zombified her. Like pretty much she is in the hospital and she is a zombie.

SKI

SKI: Yeah. Even if I google it it is hard to find, find the answer. They just…they just….uh… I asked them, what happened if he…he… is he have some breakdown again and we cannot bring him to the hospital because he doesn't want to. They said call 911, it is not easy to just call 911. I don't know.

I: And that is what they told you when you were leaving the hospital.

SKI: Yeah, because Ii…yeah. Beside they said if he gets…if he gets violent call 911.

I: Oh, okay.

SKI: My question was should we wait for something to happen before?

I: Yeah. And that first time you took him to the hospital was it just to the emergency room?

SKI: Yeah emergency.

SK027

SK027: I was completely delusional for my hospital stay... Um, when I was in the hospital for the 10 days I should have been in there for another two weeks. They sent me home and from the day they sent me home to the six-week mark when I met my psychiatrist, was the absolute darkest days of my life.

I: Ok. And so you didn't uh… in those six weeks you never met with anyone until you met with your psychiatrist?

SK027: No, I had three trips to the emergency.

I: Okay.

SK027: I thought I was suicidal, I thought I was going to die and they just kept sending me home with family…And I had no plan. I… they sent me home to the house that I got sick in, like home alone, by myself and I was still delusional. And I remember when I was getting ready the day before I left the hospital I asked the lady at the front desk, I believe she was a nurse, I said when I leave tomorrow, I said, how am I going to get home, like, or, yeah like how am I going to get home both my sisters work. And she says, do you have a car? And I said yeah I drive a red SUV. She said well you can drive. So not only did they send me home alone still delusional but they okayed me to drive.

This long and painful process of seeking treatment eventually led some patients and their families to the EPIP clinic. However, even when the patients finally arrived at the EPIP clinic and were given more opportunities to learn about the illness, the information provided was sometimes not accurately translated, was misremembered, or not recalled at all by patients.

SK001

I: Okay, okay. But when you were in the EPIP program, did the doctors tell you anything?

SK001: Hm, I mean they told me not to, what did they say…hmm…I don't even remember… Cause of Covid I haven't been able to actually like go there and talk to them. It was just on the phone and then yeah we don't really talk about too too much. Just how things are going, how is everything going and such.

SK011

I: Okay. And have you received any information about relationships between cannabis and psychosis from any of these professionals that you kind of been involved with?

*SK011: Not yet uh… Dr. **** briefly touched on it.*

SK014

I: Okay and have you ever received any information about the relationship between cannabis and psychosis from anyone at EPIP or any professionals?

SK014: Uh no.

SK016

I: Okay. Have received any information about the relationship between cannabis and psychosis from any professionals in the EPIP program?

SK016: Uh.. not really.. I mean my psychiatrist would tell me to uh, cannabis could like give you more anxiety and stuff like that. So that's about it.

SK021

I: Okay and regarding your current uh, time at the clinic have you ever received any information between any relationships of cannabis and psychosis from professionals or?

SK021: Uh, yes they said it amplifies the uh, side effects of psychosis. Uh, but I mean the things is it's like a double edge sword, you know. Like… uh, to some degree I would say like cannabis use like uh, it could be beneficial when it comes to socially but at the same time I don't know if it's true that it uh, it amplifies the side effects but what I know from the side effects is that it's just, it makes you sleepy I guess….

SK022

I: Okay. Um, and have you received at any point any information between cannabis, the relationship between cannabis and psychosis from professionals?

SK022: Nope.

However, some patients reported remembering better than others. The patients who reported remembering sometimes described the information using metaphors or visualizations that they reported having been shared by their psychiatrist.

SK020

I: Okay and in regards to um, kind of the psychiatrist or the people part of the clinic, have they ever given you information on cannabis and psychosis and the relationship?

SK020: Hm… a little bit.

I: Okay could you uh, explain kinda what they've told you or?

SK020: Uh that it's not good for psychosis and that, like my nurse said a metaphor it's kind of like playing football with a broken leg.

SK023

I: Mhm, okay. And have you ever received information about the relationship between cannabis and psychosis from professionals? So any doctors or nurses or anything?

SK023: From my psychiatrist yeah.

I: Okay and what did they kind of describe?

SK023: Um, basically that like our normal antipsychotic medications will hit like nine receptors and cannabis can hit like 99 receptors. And so it's just impossible to know exactly what it is hitting and what it is doing at all times. So it's just safer not to use it with psychosis because you just never know. And I am on a pretty high dose of medications right now so you don't know how that goes as well.

Despite the various challenges faced with health-care services and help seeking, patients expressed high levels of gratitude toward the professionals at the EPIP clinic who helped and supported them throughout their treatment. This is reflected on by a number of current patients.

SK001

SK001: Back then I was kind of like mad and upset but like now I am grateful and thankful, you know. Without them (EPIP) I would probably be fricken, not doing so…

SK005

I: How do you feel about your treatment now?

SK005: I like it. I am I fully trust my psychiatrist and I have a nurse who helps me out. I trust them because now I am healthier than I was.

I: mmhm. How do you feel about not being in that situation anymore?

SK005: Well grateful. Very grateful.

I: To your treatment team, to your family, just the support system that you have?

SK005: Yes because it worked. It takes a village.

SK014

I: Okay and is there anything you'd like to change about any treatment that you're getting at all?

SK014: No I think everything is perfect.

SK024

SK024: .... Like they (professionals at the EPIP) were always checking up and making sure I had all of my pills on time and I guess just doing their job but no they did a really good job of making me feel safe when I was here and I think I think that was a big part of my treatment anyway.

*SK024: ... they will still like you know give me a text like hey how are you doing just want to make sure your things are going good and I was always like I always appreciate that and uh, especially early on like she was always like there like almost every day kind of just making sure I was doing okay and if I had any questions she was right there to answer, and uh even Dr. *****, even I actually look forward to going to his appointments because he is he is a fun guy to talk to.*

SK025

I: Yeah. And overall how would you say the treatment as a whole has been, uh in terms of like how you feel about it, If it has helped, stuff like that.

SK025: Yeah I feel like it has helped a lot. Like I was not able to even focus, unable to think properly, I could do my daily functions when I was going through psychosis.

SK026

I: What was it like when you were involved in the EPIP program?

SK026: So much support. Oh my goodness. It was amazing. I had support for everything. I am so fortunate that I got into that program cause I know a lot of people probably struggle with that and mental health and psychosis, and they don't get that chance to be a part of something like that.

I: Mhm.

SK026: So, I honestly, like it took time for me to get better but just having EPIP there was just really helpful yeah.

SK027

SK027: Yeah. It has been great. Honestly, I think the Early Psychosis Intervention Program really changed my life for the better after going through my psychosis. I feel like the nurses, my nurse was an angel…I am telling you she was an angel heaven sent. She is the kindest, sweetest, most caring yet supportive person I have ever met.

I: Awesome, and compared to before, you mentioned before in emergency services you had issues, like compared to before you got involved in the program, um.. how would you say they were different from like you know what you experienced before to what you

experienced in the program. Was there any difference, like any um, things that were better or worse? Or?

*SK027: Oh. I have to say everything is better. Everything. Like every aspect. Like prior to being hospitalized and ending up in emerg and whatever else happened um, I went to a psychiatrist and she told me I was a waste of time and I remember telling Dr. **** this and she told me she was like **** you are not a waste of time like this is very important like our meetings are important. And I said you know like I tried to stop this before it happened. And like she never put me on proper meds she didn't do this she didn't do that.*

I: Mhmm.

*SK027: And comparing Dr. **** to that psychiatrist is like day and night. Dr. **** listens. She is supportive, she keeps me in line, she keeps me accountable. Honestly there is no topic off the table.*

I: Right.

SK027: And because of my previous experiences with psychiatrists, I was like well I didn't expect that. And I think that part of what makes my mental health journey so rewarding.

The professionals at the EPIP clinic were characterized as not only supporting patients in their treatment journey but also as assisting family members in understanding the process during this difficult time, and as often involving family in the treatment programs for their loved ones. Multiple family members expressed that their loved one would not be where they are today without the help of the treatment team at the EPIP clinic.

SKA

I: And what did you think about the program?

SKA: I think it's really good… I believe if we didn't have that support I don't know what I would have done and um…it's really helped.

I: Ah I see. Is there anything you would like to change about the program, to help him faster or?

SKA: Um…No actually. I would recommend it to anybody, any parent that would need it or family.

SKF

I: And what do you what is your opinion of the program that he is doing and the treatment that he is getting?

SKF: I feel like it is benefiting him because before this it was…he was hard to handle. Like, everything, everyday was a different day.

SKG

SKG: Yeah. And he is um, so. We will see. Yeah. Um, but I think that us being in the program, I think the biggest thing is his nurse has been fabulous…. Like we, he (nurse)

had been a life saver and um, I know (the patient) is not always, he is antagonistic to him of late, lately, but um, we couldn't have done it without him, he has been a life saver and has done, has gone above and beyond.

I: And what what do you think about the treatment program overall?

*SKG: Oh I think it is a good a really great program. I know our, I think we would say our son probably hasn't been really on board um with it I think he started out you know saying that it was good but over time I think with the use and just he can be a bit paranoid at times, and just the idea that you know, when he went into hospital last time it was them that put him in there you know, and you just you can't reason with him that that is not how how it worked. I think it is very good. They have been very supportive. I said his nurse has been fantastic right… and we couldn't have done it without him. Um, he has been invaluable and he has really you know, supported **** and really worked worked worked, tried to work really hard with ****, um and they have and I know his physician has included us in the appointments and we have had a family meeting and um, that so I think they have been very good and recognize our role and our involvement with them right.*

SKH

SKH: Yeah they (doctors at EPIP) were good to us. They let us always come with them… And they listened. They were good listeners too.

SKI

SKI: …head is right. He has greatly improved. I think he is going back to…to the former, to his former self. Right now.

*I: And then um, *the patient* is part of the, the Early Psychosis Intervention Program... Um how involved have you been in the program or his treatments?*

SKI: Oh we are. We go with him all of the time.

I: OK. And what is your opinion on the program, what do you think of it yourself?

SKI: Oh it was great. It was great.

I: Mhmmm.

SKI: It uh, yeah it was great. So… it, it is the one that we have been looking for in the help that we been looking for for like almost five years.

I: Yeah, yep. And when you started going to you know, you went with him to get treatment and to his appointments, did they explain to you guys um, to you and your wife, about what was going on or like do you have a better understanding now of what is going on or how did that kind of look for you?

SKI: Yeah, yeah. They…they, they have a great job like explaining to us like how psychosis works.

I: Mhmm.

SKI: And about the process of the treatment.

Looking forward, many patients and family members expressed stability and hope. This is reflected through descriptions of doing well and outlines of future goals and ambitions.

SK016

SK016: …all my nurses and psychiatrists says I'm way brighter now than when I first got admitted.

SK026

SK026: Yep. Um, I think I am doing very well. I just got done work placement program, I am living on my own. Um, I haven't had symptoms in over a year. Um, I am doing very well actually. I am still taking medication but that's just kind of my life right now. I am keeping myself clean. I am keeping my space clean. I am really doing a lot better.

SK005

SK005: I am fairly level headed now and am just doing what I can to survive so. The only thing I wish was that I had a good career, well paying, family wife and kids. That is what I wish.

SK014

I: Is anything that you want to change in your personal life? Um, any goals or kind of future approaches to anything?

SK014: Uh… I do, uh I do want to like go to university…

SK018

I: Okay and what about life in general? What are your kind of goals or things that you're wanting to work towards?

SK018: Uh I want to work towards getting a career.

SK027

SK027: I mean so much has changed like I feel like I have done a 180. Like completely different priorities, I am back to work, I was almost working pretty well ¾ to full time last year and then back down to part time but I am on SAID…So you know, I'm I'm really I am very proud of myself. I have held myself accountable… and I have seen it through to the other side. And like I have said before I think it was a blessing in disguise because it really you know, woke me up in a sense and showed me that there is a different way about things.

3.8.1 Interpretations of Theme V

Patients and family members faced numerous challenges in the process of seeking help and accessing healthcare. Often family seemed to be the only source of help, and were the ones who urged their loved one to get treatment. However, help was often not sought until after an extreme event occurred, since earlier stages of psychosis frequently went unrecognized. The lack of

recognition of initial psychotic symptoms and illness not only led to a disconnect in the relationships between patient and family since the patients might have felt misunderstood, but also caused a significant delay in help-seeking.

Multiple family members expressed their confusion in the initial stages of their loved one's illness and admitted to being unfamiliar with psychosis. This information highlights a significant gap in education on psychotic disorders in the general population, since often treatment was only sought when symptoms became extreme. This makes an already difficult recovery even more difficult. Patients also frequently isolated themselves from family in the beginning stages of illness, which suggests that insecure attachment characteristics might have a detrimental role in initial help seeking. Sometimes this isolation is linked to a traumatic or stressful experiences, which reflects the roots insecure attachment might have in trauma, and the additive role these risks can play in worsening illness. Furthermore, patients often resisted help by not wanting to give up drug use, or not wanting to sever unhealthy relationships. These harmful influences might make it nearly impossible to treat their illness effectively. Perhaps the perception of a sacrifice, even if the sacrifice is a good development, might by why some patients resist these helpful changes. Developing strategies to view these changes as valuable investments to their health, rather than sacrifices, might improve treatment outcomes by reducing these harmful influences.

Challenges were also met after initial help seeking. These challenges were frequently seen in primary healthcare settings including family doctors and emergency rooms. These challenges continued to delay effective treatment, which subsequently increased the severity of illness. For example, some family members felt that their loved ones were overmedicated, and that their feelings were not considered. Some initial diagnoses were incorrect, further delaying effective treatment. Additionally, adequate resources and support for both patients and family members were not always provided following hospital admission. This situation is dangerous for the patient, as it puts them at risk of suicide or worsened illness severity. It is also dangerous for family members, who are not fully aware of the implications of the illness and are expected to manage it without adequate support from professionals. These challenges highlight a problem in Saskatchewan health care that needs to be addressed. Patients also encountered difficulties with the treatment itself; even when adequate resources were provided such as the EPIP clinic, patients sometimes did not remember or use the information given by their doctors. This reflects that even when the required services are provided, the information still might not be translated effectively. The patients who do remember sometimes described the information using metaphors or visualizations that their psychiatrist shared, which might suggest a more effective way to translate the knowledge. Perhaps interactive online programs with quizzes and visual aids could be more successful at translating this information, and should be explored further.

Despite the acknowledged gaps in health care and encountered challenges, the EPIP clinic was described in overwhelmingly favourable terms by patients and their families. Every family member who discussed the clinic had great things to say, and the professionals working at the clinic were highly praised. At times they seemed almost to take on the role of family, and were reported as paramount in the treatment and recovery of patients. This important distinction between a specialized clinic and general health care is evident, and justifies the current use or even the expansion of the EPIP clinic. Expanding the clinic could allow more people to receive the critical help that they need in a timely manner, and potentially reduce the number of

challenges that are faced prior to admission. The families interviewed were persistent in their loved one's health, which is how they landed at the EPIP clinic. However, this might not always be the case, so efforts to minimize barriers by exposing or expanding the EPIP clinic could be beneficial. As well, those who do not have families might benefit from the family-like environment the EPIP clinic provides by allowing the formation of healthy attachments with health-care professionals, in place of absent loved ones.

While the path to improvement is long and hard, it appears to be paved by the desire to move forward. This path is supported through receiving helpful resources both personally and professionally. The future appears optimistic for many, which reflects favourably not only on the healthcare professionals at the EPIP clinic, but also on the patients and family members themselves. Patients interviewed overwhelmingly had hope for the future, including descriptions of plans for schooling, work, travel, or family life. This resilience highlights the human spirit's ability to overcome adversity, and is truly admirable and inspirational. This hope expressed by patients, even during their darkest times, also offers encouragement for others experiencing first-episode psychosis, and is a key takeaway from this research.

3.9 Summary of Thematic Analysis

Insecure attachment characteristics, trauma, and cannabis use seem to each have individual influence, and substantial complex interrelationships on the severity of psychotic illness, as described by participants. The interpretation of these descriptions indicates interconnectedness between trauma, insecure attachment, and cannabis use, which creates a feedback loop that worsens illness. This highlights the need for comprehensive psychosocial treatments to address the variety of risk factors that might worsen one's illness. Additionally, these patterns are understood inconsistently among patients and families. However, those who recognize stronger connections seem to recover better from their illness, based on interpretations from the interviews. This research suggests the need for better education and support systems, including the expansion of successful programs like the EPIP clinic. A summary of the thematic content can be seen below in **Figure 3.4.**

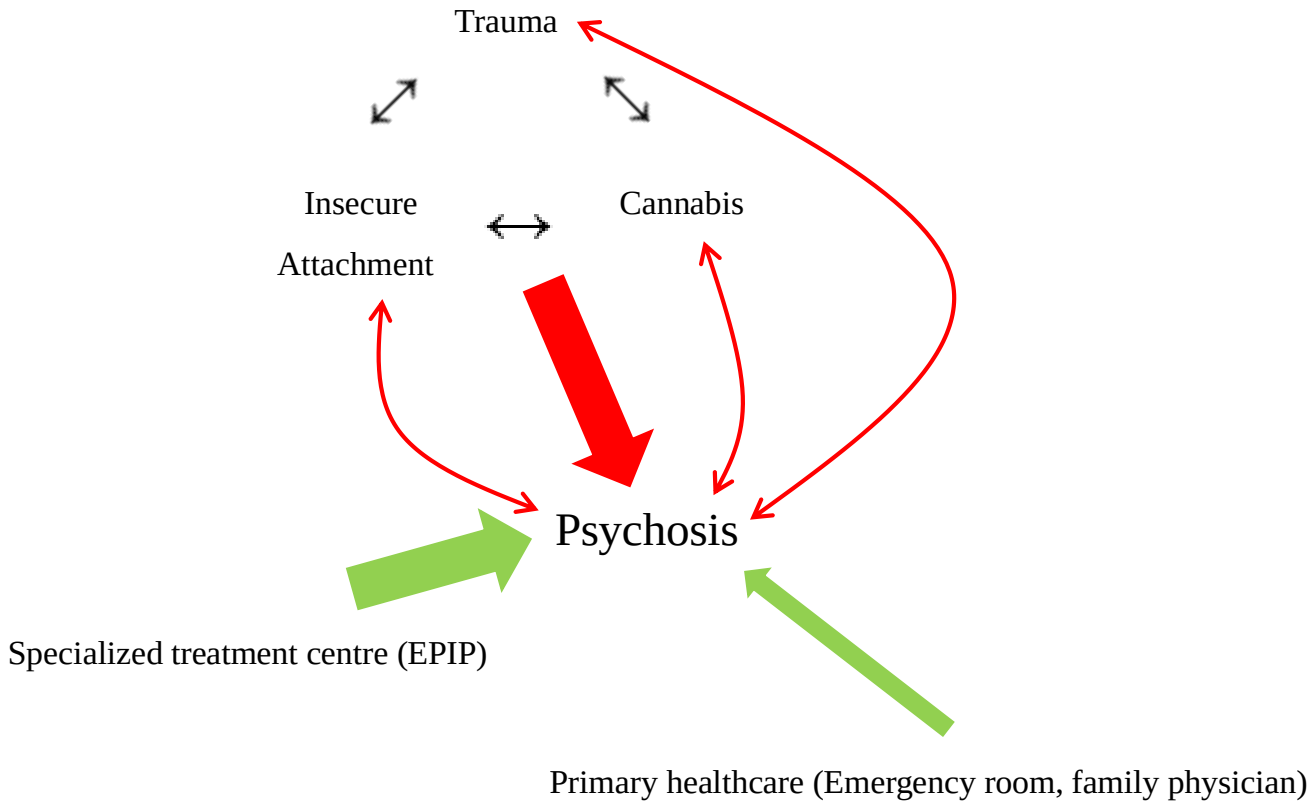

Figure 3.4.
Summary of Thematic Analysis.

Note. This visual depiction of thematic analysis illustrates the individual relations that the risks, as described by participants, have in worsening psychotic illness, as well as the additive role that is described as occurring due to the connections of these risks. The bi-directional role of psychosis is also shown. Red arrows represent a harmful relation to illness, green arrows represent a helpful one. The size of the arrows corresponds to the amount of influence the risk appears to have on the psychotic illness. For instance, the specialized EPIP clinic was described to have a greater beneficial relation to psychosis compared to primary healthcare, which still has a helpful, but smaller beneficial relation.

CHAPTER 4: DISCUSSION

4.1 Overall Interpretations

The goal of this study was to identify the knowledge and understanding that patients diagnosed with first-episode psychosis and their family members have regarding the risks of attachments in relationships, trauma, and cannabis use, and how these risks might influence each other to create and amplify vulnerability to psychosis and suicide. These observations are highly important for those suffering from psychosis, their families, treatment teams and social supports but also for the general public, clarifying the knowledge that needs to be widely translated, in order to minimize modifiable risk factors.

The five themes generated from the data portray the complexity of the current situation, given that multiple risk factors are often misunderstood, underdiagnosed and undertreated, while patients and families lack the basic understanding that can facilitate concerted efforts that are more likely to succeed in promoting recovery.

Theme I addresses cannabis use and its dual role in relationships and mental health. This theme suggests that participants sometimes use cannabis in search of comfort or a sense of belonging, as a coping mechanism to deal with mental distress. This raises the question—why do individuals turn to cannabis and not their loved ones? One inference of this research is that patients feel misunderstood by those closest to them, or fear being misunderstood. This might put them in a vulnerable position where they do not feel a sense of connection with anyone, leading them to be drawn to cannabis instead. Cannabis provides a quick (while false) sense of security, acts as a non-judgemental friend, helps them feel better, and even can provide a real community among users. Feeling misunderstood might be an underlying reason why patients initially turn to cannabis use, and continue to use cannabis despite their illness.

Theme II ties in further to these feelings of misunderstanding, potentially explaining why patients often isolate themselves from healthy attachments initially. It could be argued that it is not until patients feel understood that they actually get better and heal. Realizing that their loved ones are not judging them and that they recognize their struggles might allow patients to feel comfortable relying on these supportive, healthy relationships during their healing journey. While this is easier said than done, it is an optimistic goal. However, the importance of receiving the appropriate treatments and lifestyle in order to facilitate recovery cannot be emphasized enough, since proper recovery also promotes healthier attachments, and healthier choices.

Themes III and IV consider the three risks in relation to each other, and how they interplay to collectively influence a person's illness. These themes indicate that patients and their families do not always understand these risks and their relations, which can leave them vulnerable during the healing process. At times, patients might also lack a clear understanding of their own situations. This message of misunderstanding is particularly evident in Theme IV, as this message relates directly to these results. Not knowing the role of the individual risks, or their connections, is perhaps why some of these patients became so sick. It is often not until they are in recovery

and look back on their experiences that they recognize these connections. Even then, these connections are not always clear. Misunderstanding in this case has the potential to play a fundamental role in their illness; it seems that patients begin to get better only once they understand for themselves how harmful these risks are.

Finally, Theme V focuses on healthcare and the challenges that are faced during recovery and healing. Misunderstandings of the risks and insufficient psychoeducation even seem to permeate healthcare, as many barriers to recovery stem from misinformation or lack of information from frontline healthcare providers. This suggests the necessity of the knowledge translation that comes from the current study, which needs to be far reaching extending beyond the affected individuals, to the level of healthcare and even society as whole.

The dangers that come with untreated psychological trauma, cannabis use, and unhealthy attachments are systemic problems that need to be addressed in both healthcare and society. In fact, these systemic problems might explain why participants and their families struggle to understand their illness, and why the road to recovery is so rocky in the absence of specialized, team-based programs. It might also be why families have trouble understanding their loved ones.

The root of the problem lies in society and the limited knowledge that is available to the general public regarding psychotic disorders. To this day, mental health disorders, especially psychotic disorders, remain heavily stigmatized, and psychotic individuals are often equated with violent offenders.[8–10] This stigma might stem from the lower occurrence of psychotic disorders compared to other mental illness, which explains the minimal education about it. On the other hand, it might also be a result of the media portrayal of psychotic disorders, and the danger they represent in society. For example, when searching "Saskatoon Psychosis News," the majority of the articles focus on violent acts involving individuals with psychosis.[201–204] Although some research suggests that rates of violence are statistically higher in this population,[205] other research suggests that patients with psychotic disorders are more likely victims of violence than perpetrators, and misconceptions about violence might be fueled by stigma and stereotypes.[206] Even in my own experiences from informal conversations, it seems that the general public holds these harmful perceptions against those with psychotic illness based off of media portrayals.

This research does not seek to insinuate that these violent acts are somehow acceptable in society. However, these frequent portrayals in news might actually contribute to more violence, since these types of alarming articles that generate fear contribute to the ongoing stigma surrounding psychosis. This ultimately might underly why patients, families, and even parts of health care are still so much in the dark regarding psychosis. Not being educated means that early psychotic symptoms and risks such as cannabis abuse go unnoticed until something extreme happens, such as violent acts. While most people with psychotic disorders likely do not pose a danger to the general public and are instead just terrified and need help, the ones who do pose a danger might be individuals that have multiple risks (such as cannabis abuse, untreated trauma, or an insecure attachment style) in addition to their illness.[207–210] Because of this, these risks need to be properly addressed.

So, misunderstanding and stigma might be what fuels and empowers these risks, and enables them to connect in ways that worsen the illness. This stigma might be why those struggling with psychosis or mental health in general do not reach out to loved ones, thereby increasing disconnection from healthy relationships. This stigma might be the reason individuals turn to drugs, or continue using drugs despite experiencing symptoms, exacerbating the influence of

cannabis on their illness. Additionally, this might also be why individuals do not discuss their trauma, which can further harm their illness. Recognizing and treating these risks early by increasing education in the general public might aid in preventing poor outcomes in the patient's illness, and poor outcomes in society.

It should be noted that these risks can also work the opposite way, and can fuel misunderstanding. Insecure attachment can cause mistrust and isolation, which might make it difficult for individuals to explain how they feel.[18,20,47] Extended cannabis use can lead to apathy, and trauma can cause individuals to shut down or become dissociative[199,211]. Misunderstanding might explain why symptoms and the severity of the illness get so bad before help is received.

To conclude, this lack of understanding, seen throughout all the themes, presents a complex problem to address since this misunderstanding seems to be deeply rooted in societal stigma and stereotypes. However, this research suggests further educational programs and increased knowledge availability to the general public, as well as increased investment into programs like the EPIP clinic that approaches treatment through a biopsychosocial model, are needed. This research team hopes this current study at least partially highlights the success stories of those with psychotic disorders, shifting the attitudes away from blame and fear, toward support and hope. It is possible to recover and live a fulfilling life after receiving a diagnosis of a psychotic disorder, as demonstrated by the participants interviewed. It this research team's hope that this research becomes one of many studies that adequately communicates this message.

4.2 Relationship to the Literature

The understandings of patients and family members who participated in this study somewhat reflect the literature examined, but also further expand it. Regarding attachment, the literature shows that insecure attachment, often characterized by poor relationships, is a significant risk factor for psychotic illness, and affects both severity and recovery.[15,148] Secure attachments, or healthy beneficial relationships, are seen as major factors in recovery and support for those with psychosis.[44] Insecure attachment also interrelates with both cannabis and trauma individually, though all three factors were not examined together previously.[175–177] This is similarly reflected in the current study, where insecure attachment appears to play a role not only through its connections with cannabis and trauma (discussed in Theme III) but also in the key role that healthy attachments play in creating a network of support and coping for both patients and families. The key role of attachments seems to be understood quite clearly by those interviewed, and also throughout the literature. Some advantages of the current study are the in-depth examinations of the reasons and steps that can set a patient on a vulnerable path, and the inclusion of the family members' perspectives, and their own attachments. While family members relationships with their loved one are often strained, their support persists despite resistance. These family members want what is best for their loved one, and are depicted to never give up despite the adversity they face. Often, a complete restructuring of the attachments between family and patient has to occur to facilitate recovery, which is challenging at times, but necessary. An advantage of the EPIP clinic is the willingness of healthcare professionals to include and educate the family regarding psychosis, which is sometimes not done in first-line care.

Regarding trauma, the literature shows that exposure to trauma is highly correlated with psychotic illness, with worse trauma often leading to more severe psychotic illness.[16,155] In the

literature, trauma/attachment and trauma/cannabis have been connected, often creating a synergistic effect to worsen illness.[176,178] This is somewhat understood by participants, with some making connections between their trauma, attachments, and cannabis use. However, these relations are not as well understood by those interviewed as compared to the literature. At times, trauma is acknowledged, but no connection is made between the trauma, future illness, cannabis use, or relationships. When connections are made, patients sometimes cannot pinpoint them precisely or describe how they think they are connected. Despite this, those who made more solid connections between trauma and other risks and have addressed are interpreted to be doing better. This agrees with the literature, which suggests that trauma-focused care improves recovery for those with psychotic illness.[164]

Finally, the literature indicates a dose response relationship between cannabis use and psychotic illness severity, particularly for those who use cannabis with high THC.[120,165–167] Cannabis also interrelates with attachment and trauma to worsen illness severity.[175,177] In the current study, the relationships between heavy cannabis use and increased illness severity are definitely apparent, since the heaviest use always occurred at the worst points of their illness. However, the specific connections between cannabis and psychosis are somewhat misunderstood by those interviewed. Patients generally understand that cannabis is harmful, which is reflected by most participants either quitting or drastically reducing their use. However, when asked about their reasons for quitting or cutting back, it is sometimes not related to their psychotic illness but rather to feelings of anxiety, or other reasons. Additionally, the type and frequency of cannabis use was considered, with some patients justifying their current use by these factors. This reflects a lack of consistent understanding among patients, and suggests that clinical interventions to increase understanding might not be fully effective. This is similar in family members, where some see clear connections, some see uncertain connections, and others do not consider cannabis at all regarding their loved one's illness. Since attachment security is significant in supporting the recovery of those who are ill,[44] the lack of understanding reflected in family members might pose an issue. An additional benefit of this study is insight into why those with psychosis continue to use cannabis despite being advised otherwise, or start using it more heavily during worse periods of their illness. Cannabis serves as a coping method, a way to self-medicate for anxiety, depression, or sleep problems, and as a way to form connections with others. This is something that is less explored in the literature, and is an advantage of the current study.

4.3 Clinical Implications

There are various clinical implications that can be drawn from this study. First, clinicians should identify and recognize each patient's coping methods. Patients who rely on only one coping method, such as depending solely on one person, might be at risk for relapse in their illness if that method becomes unavailable. Clinicians should take steps should be to support these patients more comprehensively, and to ensure their healing is rooted in multiple sources. Additionally, healthy attachments have been shown to be essential for healing from psychotic illness, and are often used as a method of coping.[18,44] Clinicians should note this significance, and explore whether patients have healthy attachments in their lives that they can rely on. For those without friends or family, health care professionals might need to take the place of other

healthy attachments, especially during the initial stages of illness. Evaluating this, and establishing the connections between patient and provider early on, are critical.

It should be acknowledged that some patients might have a difficult time forming healthy attachments due to previous trauma and/or cannabis use, which is a finding this research has generated. So, these risks should be individually evaluated and addressed upon admission to the program to help address the root causes of the illness. For instance, cannabis might be used to supplement a relationship, or connections that patients lack. Cannabis might also be used to deal with underlying mental health concerns that might not be otherwise brought up. Therefore, clinicians should not only take note of a patient's cannabis use, but also take note of why they might be using cannabis, and take the necessary steps to address the root cause. Since cannabis use has been implicated in poor treatment outcomes of those with psychotic disorders, this is an area of particular importance.[212] Multiple risks contribute to psychotic illness and form connections within each other, so it is important that all of these are addressed to facilitate healing, as opposed to just symptom management.

In this study, those who made stronger connections between insecure attachment, trauma, and cannabis use, seem to recover better from their illness. So, aiding patients in making these connections during their treatment could improve treatment outcomes and adherence, and psychosocial treatments, in addition to medication and biological treatments, might be crucial to help support the recognition of these connections. Overall, this research highlights the need for better educational programs and guidance for those with psychotic disorders, and their families. Perhaps new interactive programs for patients could be beneficial to help knowledge retention and understanding, as this might be more engaging and memorable compared to discussions with their psychiatrist. Educational programs and support systems for family members might also be beneficial to help guide them through these challenging and unfamiliar experiences.

This study also suggests that patients sometimes use adverse experiences as motivation for change. Clinicians can use this information to help transform ill patients into healthy ones. It is also important for clinicians to recognize why delays in treatment occur, often due to reasons such as a lack of education, self-isolation, and harmful experiences with previous healthcare services. These harmful experiences might contribute to mistrust of the system, making treatment difficult, especially in the beginning. Once again, this emphasizes the importance of establishing a healthy relationship between patient and provider early on to help reframe the adverse views that might be ingrained in the patient.

Finally, the stories shared by participants describe experiences of hardship, but also times of hope and success. Clinicians should celebrate these achievements and hopes alongside their patients, and steps should be taken to support them in reaching their goals. We hope this study provides newfound guidance and empathy for physicians regarding psychotic disorders. Understanding the experiences of patients and their families helps clarify why patients exhibit certain behaviours, why drug use might continue, or even why bad relationships persist. In the future, we hope this research informs health care professionals, educational and interventional programs, psychosocial treatment options.

4.4 Strengths and Limitations

This qualitative study has several strengths. Firstly, to our knowledge, it is the first qualitative study to examine how individuals affected by first-episode psychosis understand the relations between attachment, trauma, and cannabis risk collectively. This is important in determining illness severity and suicide risk, making this study unique and relevant for clinical practice. Additionally, this study also captures the first-hand perspectives of patients with psychosis and their family members, which provides insights into what occurs outside of clinical settings and within patients' homes. These rich descriptions, supported by a variety of quotes, enhance the plausibility of this research.[213] Additionally, informal reports from Dalhousie University (a collaborator on the quantitative portion of this research) have suggested similar accounts as this study, which favorably supports this claim This research is also crucial for understanding knowledge translation, and suggests ways that might improve knowledge retention in this population. The inclusion criteria strengthen the study by focusing on those with first-episode psychosis exclusively, allowing for targeted conclusions. The qualitative format is also beneficial as it captures real-life accounts of experiences that statistics alone by sometimes overlook. Lastly, the stories shared by participants highlight the need for specialized intervention clinics for psychotic disorders, and describes their success compared to general health care practices.

However, there are limitations. Participants interviewed were in the recovery phase of their illness, and those in the acute phase might have different perspectives. This could introduce bias, as individuals who agreed to participate might be more open about their experiences due to their improved recovery. As well, selection bias might be introduced since those who are more engaged in the EPIP clinic will likely also be more engaged in research opportunities. Furthermore, other risk factors not measured in this research including genetics or low socioeconomic status, among others, might have a role. This might artificially inflate the influence of the examined risks. Finally, clinical evaluations were not done with participants to confirm the self-reported occurrence of trauma or insecure attachment, as well as confirm the interpretations that were generated from the interviews. Therefore, the proposed views might be not clinically accurate.

4.5 Future Research

Future research could benefit from additional qualitative investigation to confirm the consistency of results among participants and researchers. It would also be valuable to explore similar areas with patients that are in the acute phase of their illness, as their perspectives might differ from those in recovery. Expanding the inclusion criteria to those outside of Saskatchewan might be useful to see if these results are consistent on a global scale. Additionally, this study can serve as a catalyst to future quantitative research, some of which is already underway. While the relations between attachment, trauma, and cannabis use are evident, these interrelations have limited statistical investigations considering all three risk factors together. Exploring these interrelations would be an important area of future research to help understand patient recovery. Lastly, a quantitative study examining the effectiveness of early psychosis intervention programs would help statistically confirm the results of this research, and could help assess whether an expansion of the EPIP clinic is a worthwhile investment.

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APPENDICES

A. Recruitment Poster Patients

UNIVERSITY OF SASKATCHEWAN

Participants Needed for a Study on:
Risk Factors for early psychosis

We are looking for volunteers **who have been diagnosed with psychosis within the last five years.**

The study involves completing one or two interviews either online or in person. 20 open ended questions and/or a questionnaire package involving self-reported scales about your mental health, cannabis/substance use, trauma, and attachment will be conducted at the time of interview. Each interview takes approximately 30-60 mins.

Eligibility:

- Male or female from **18 to 35 years old**
- Have **been diagnosed** with first episode psychosis by a psychiatrist within the past five years
- Are able to provide informed consent
- You **do not** have a severe learning disability or neurological disorder.
- Note this study will not affect the care you receive in any way

If you are interested or require additional information, please call **Sarah Piche** at **306-844-1077** or **email Samantha Carley at sjc406@usask.ca**

$$ Compensation will be provided $$

*Research has been reviewed and approved by the Behavioural Research Ethics Board at the University of Saskatchewan

sjc406@usask.ca 306-844-1077

B. Recruitment Poster Family Members

UNIVERSITY OF SASKATCHEWAN

Participants Needed for a Study on:

Risk Factors for early psychosis

We are looking for **family members** of individuals who have been **diagnosed with psychosis within the last five years.**

The study involves completing one interview either online or in person. A questionnaire involving approximately 20 open ended questions regarding your family member's cannabis use and mental health will be conducted at the time of interview. The interview will take approximately 30-60 mins.

Eligibility:

- You are a **close family member** of a person between the age of **18 to 35 years old** who has **been diagnosed** with first episode psychosis by a psychiatrist within the past five years
- You are at least 18 years of age
- You are willing to answer a few questions with respect to your understanding of their illness and the risk factors

If you are interested or require additional information, please call **Sarah Piche** at **306-844-1077** or **email Samantha Carley at sjc406@usask.ca**

$$ Compensation will be provided $$

*Research has been reviewed and approved by the Behavioural Research Ethics Board at the University of Saskatchewan

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C. Consent

LETTER OF INFORMATION

You are being invited to participate in a research project entitled: **The Interaction Between Trauma, Attachment, and Cannabis use in creating Vulnerability for Severe Psychosis and Suicide.**

You are invited to participate in an ongoing research project investigating how people who are receiving treatment for first episode psychosis get better over time and what influences improvement. The findings of this study may identify how differences between people influence how they improve. Identifying these differences could lead to making improvements in care so that all people benefit from treatment. Whether you choose to participate or not **will not affect the care you receive in any way**.

RESEARCHERS

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Eligibility and Procedure: You are eligible as long as you do not have a severe learning disability or neurological disorder, and you are 18-35 years old. The study is comprised of two components, and you may choose whether to participate in either Component 1 or Component 2. The study involves the following components:

Component 1:

- Completing an interview about mental health at your earliest convenience
- Completing the study questionnaire package composed of several self reported scales at the time of interview. The package involves various questionnaires that will ask about topics of: mental health and psychosis, attachment, cannabis use/history, substance use, and history of trauma. Individual questions or part of the questionnaire package may be opted out by the participant at the time of the interview if desired.

Component 2:

- Completing an interview about mental health at your earliest convenience
- Completing a qualitative interview discussing your experience with psychosis and related risk factors such as attachment, trauma, and cannabis use. You will be invited to complete an interview about your understanding with respect to your mental health and asked approximately 20 open ended questions. The questions will only ask for your opinions. There are no right or wrong answers. In order to understand better your experience, we will examine the themes that emerge from your answers and other similar interviews.

The interview will be conducted over the phone or via a video while the restrictions of the pandemic last. However, once the restrictions are lifted, we will be able to assess participants in person, or over video or phone according to your preferences.

The video interview will be conducted SK virtual visit, a secure video platform endorsed by The College of Physicians and Surgeons of Saskatchewan and utilized by physicians in Saskatchewan. These video platforms allow for an interviewer to "lock the room" by protecting the confidentiality of those involved in the session. More information can be found at https://skvirtualvisit.zendesk.com/hc/en-us/categories/4900544929691-Patient-Support. Despite these security measures, no guarantee of privacy of data can be made with the use of these platforms. The interview, whether in person, telephone or video, will be conducted in a private area that will not be accessible by individuals outside of the research team during the interview. If you are interviewed over the phone or video, you are welcome to complete the interview at any location you are comfortable with. We recommend a private setting so you may speak freely, and you can keep the privacy likewise. The interview will be recorded and transcribed to ensure accuracy. All interviews (either video, phone, or in-person interviews) will only be audio recorded and transcribed. The participants agree not to make any unauthorized recordings of the content of the interview.

Funding: This project is funded by the Alfred G. Molstad Trust, the Peter Matthews Enhancement Award, the College of Medicine Research Award, and the Royal University Hospital Foundation Research Award. There are no financial relationships between the Department of Psychiatry, College of Medicine, or the researchers and this project.

Potential Risks and Benefits: Occasionally you might find that the interview and questionnaires are personal and could trigger strong emotions. If that is the case, please let your interviewer know and the

interviewer might contact the primary investigator, Dr. C. Adams or Dr. S. Adams (contact information on the first page) for advice. If any of these situations become a significant problem for you after you left the interview, you can still contact the interviewer, Dr. C. Adams or Dr. S. Adams. Alternatively, according to your preference you can also contact your family physician, psychiatrist, the mobile crisis unit (306-933-6200) or attend the emergency department. You have the option to only choose to answer questions that you are comfortable with. You can quit the interview and/or withdraw from the study at any time, **this will not affect your care**. You will be deemed ineligible to continue your participation for that specific follow-up time point if you are a risk to yourself or someone else. Although there might not be direct benefits to you, this information will be used to determine if care can be improved to help others.

Confidentiality: Participation is voluntary, and you can withdraw at any time. If you choose to no longer participate, this will not impact your continued access to care. If you wish, upon withdrawal your data will be destroyed. Once your informed consent has been provided you will be given a unique participant identification number. You will not be identified by name in any publications or presentations. The questionnaire data will otherwise be kept for five years.

Confidentiality will be broken under only two circumstances: if the interviewer will assess a potential life risk, and learning that a child is in danger or currently being abused. In that case the interview will be stopped, and you will be referred for emergent psychiatric assessment to the Royal University Hospital Emergency Department (ER).

The investigators have access to all study materials. A **Master List** of participant names and identifying information will be kept in a password protected Excel file on a secure network (DataStore) accessed on a password protected computer. This master list is destroyed following completion of data collection. Your consent form will be stored separately from your data so that it will not be possible to associate a name with any given set of responses.

Although the data from this research project will be published and presented in various journals and conferences, the data will be reported in a way that discusses all participants as a group and not as individuals so that it will not be possible to for anyone to identify you.

Storage of Data: No data will be stored outside of Canada. A de-identified paper copy of questionnaires and the interview will be stored in a locked cabinet. Your signed consent will not be stored with this data in order to prevent the ability to link names to specific responses. The research data will be stored separately on a password protected computer in a locked office. All data collected from this study (including interview recordings) will be stored electronically as audio and text files in a secure file in the Principal Applicant's DataStore provided and protected by University of Saskatchewan IT services rather than to the platforms' internal cloud storage. Data will be stored for five years post-publication. At this time, electronic data will be deleted and paper copies of the questionnaires and interviews will be shredded.

Right to Withdraw: You have the right to refuse to participate in this project at any time, without explanation and **this will not impact the care you receive in any way**. You can withdraw your data at any time unless results have already been de-identified. Your participation is voluntary and you can answer only those questions that you are comfortable with.

Should you wish to withdraw from the research project at any time (you no longer wish to have your information used on the project), any data that you have contributed will be destroyed at your request. Your right to withdraw data from the study will apply until the anticipated end of the project in December 2024 when all data will be de-identified.

Follow-up: Participants have the right to access study results and a copy of any publication. Please contact the primary investigator Dr. G. Camelia Adams at camelia.adams@usask.ca in order to receive this.

Questions: If you have any questions or concerns before signing consent, please feel free to contact the Primary Investigator, at camelia.adams@usask.ca or 306-844-1078.

This project has been reviewed on ethical grounds be the U of S Behavioural Research Ethics Board and the U of S Biomedical Research Ethics Board. Any questions regarding your rights as a participant may be addressed to the Research Ethics Office toll free at 1-888-966-2975, locally at 306-966-2975, or ethics.office@usask.ca.

Consent Forms on Next Pages

CONSENT

We remind you that in order to ensure confidentiality all information used in our project is de-identified.

I consent to participating also in the project "The Interaction Between Trauma, Attachment, and Cannabis use in creating Vulnerability for Severe Psychosis and Suicide." My consent allows for the collection of all data described under Components 1 and 2 of the Letter of Information spanning the period of from my initial assessment until my I am no longer part of the program.

_____ _____ _____

Participant Name (print) Signature Date

_____ _____

Researcher Signature Date

For video or phone interview you can provide Oral Consent:

I read and explained this consent form to the participant before receiving the participant's consent, and the participant had knowledge of its contents and appeared to understand it.

Name of Participant	*Researcher's Signature*	*Date*

D. Interview Questions Patients (original)

QUALITATIVE INTERVIEW FOR PEOPLE WITH LIVED EXPERIENCE

Welcome and introduction (items in quotes are suggested script)

1. Interviewer introduces self and inquires how to address a participant: "We can be on a first name basis or use your preferred appellation"

2. Start by framing the interview: "You were selected to participate in this study because you have had experience with psychosis and cannabis use. We are going to ask you questions about your views with respect to a few important matters related to your experience related to this. The results will be used to better understand the risk factors that can create vulnerability for cannabis use and severe psychosis, but also to discover ways in which patients can be helped".

3. The interviewer informs the participant that conversation will be audio recorded.

Guidelines

1. "I will ask you a series of questions. There are no right or wrong answers, only different points of view. Feel free to speak candidly about your experience and point of view."

2. The interviewer may have to inform the participant that he/she is not able to share his/her thoughts on any subjects discussed. "My role as an interviewer will be to guide the conversation, not to provide my own experiences or thoughts."

3. "The focus of this interview is to look at the possible link between cannabis and psychosis. We are going to ask you a few questions about your personal experience with these issues and your views with respect to a few important related matters."

Interview questions

1. "I would like to ask some demographic questions to start the interview": Interviewer asks name, age, sex at birth, gender identification, sexual orientation, ethnicity, occupation of interviewee.

2. "How would you describe your experience with psychosis?"

3. "How would you describe your cannabis use currently and over time?" (The interviewer may need to provide temporal context to keep this item moving, such as when the participant start using? Are they using the same amount now as they were prior to diagnosis?)

4. "What benefits and downsides do you relate to cannabis use?"

5. "Do you see any relationship between your use of cannabis use and psychosis?"

6. "Do you have any history of trauma in your life? If yes, do you feel there is a connection between your history of trauma and your cannabis use and/or psychosis?" (If the participant struggles with this question or prefers not to answer, the interviewer should move on without any judgement).

7. "How would you describe your way of relating to others over time (e.g. before and after cannabis use; before and after the diagnosis of psychosis was made?)" (The interviewer may need to prompt here as well. Is their social circle the same size? Do the participant go out more or less than they used to?)

8. "For you, was there any connection between your close personal relationships and your cannabis use and/or psychosis?" (The participant may need to define close personal relationships).

9. "Has your relationship with your loved ones been affected by your use of cannabis and/or diagnosis of psychosis?"

10. "Are your family members involved in your treatment program?" (Family member involvement is not always a positive experience; the interviewer should be prepared to receive any answers on the spectrum from extremely positive to extremely negative).

11. "Have you ever felt hopeless, unsafe or that your life was in danger?" (The interviewer might need to prompt the participant to give details about contributing factors)

12. “Have you ever been coerced to receive treatment for addiction and/or psychosis?”
13. “Have other members of your family ever struggled with mental health or substance abuse?” (As family members may not have consented to the sharing of their personal health information, try to steer this question more towards the relationship (e.g. mother, father, uncle, etc.) rather than names).
14. “Do you currently need/receive help for mental health or substance use disorder?”
15. “Do you feel there is a connection between your living arrangements and your cannabis use and/or mental health?”
16. “Have you received any information about the relationship between cannabis and psychosis from the professionals involved in your treatment?”
17. “Do you see any relationship between your gender or sexual orientation and your current situation?” (This question will need to be framed for whatever the individual is experiencing. It could be mental health issues or substance use issues).
18. “Is there something you would like to change about your treatment?”
19. “Is there something you would like to change about your approach to life currently?
20. “What helped you cope with all the difficulties that we discussed today”?
21. “Is there anything else you think we should know?”

E. Interview Questions Patients (revised)

QUALITATIVE INTERVIEW FOR PEOPLE WITH LIVED EXPERIENCE

Welcome and introduction (items in quotes are suggested script)

1. Interviewer introduces self and inquires how to address a participant: "We can be on a first name basis or use your preferred appellation"

2. Start by framing the interview: "You were selected to participate in this study because you have had experience with psychosis and cannabis use. We are going to ask you questions about your views with respect to a few important matters related to your experience related to this. The results will be used to better understand the risk factors that can create vulnerability for severe psychosis, and also to discover ways in which patients can be helped".

3. The interviewer informs the participant that conversation will be audio recorded.

Guidelines

1. "I will ask you a series of questions. There are no right or wrong answers, only different points of view. Feel free to speak candidly about your experience and point of view."

2. The interviewer may have to inform the participant that he/she is not able to share his/her thoughts on any subjects discussed. "My role as an interviewer will be to guide the conversation, not to provide my own experiences or thoughts."

3. "The focus of this interview is to look at the possible link between cannabis and psychosis. We are going to ask you a few questions about your personal experience with these issues and your views with respect to a few important related matters."

Interview questions

1. "I would like to ask some demographic questions to start the interview" *Interviewer asks name, age, sex at birth, gender identification, sexual orientation, ethnicity, occupation of interviewee.*

2. "Can you tell me a bit about your experience with psychosis?"

3. "What factors, if any, do you think might have led to your experience with psychosis?" *See what they say first before going into my risks.*

4. *Ask only if they do not talk about this in response to question 3.* "How would you describe your experience with cannabis?" *Let them answer.* "What benefits/downsides, if any, would you say it had?"

5. “How would you describe your cannabis use currently and over time?” *(The interviewer may need to provide temporal context to keep this item moving, such as when the participant start using? Are they using the same amount now as they were prior to diagnosis?)*

6. “Do you see any relationship between your use of cannabis use and psychosis?”

7. ““Do you have any history of trauma in your life? Can you describe how this trauma relates to your life experiences, or has impacted you, if at all?” *If they do not bring up psychosis/cannabis, probe with this after they answer.*

8. “Have you ever felt hopeless, unsafe or that your life was in danger?” *The interviewer might need to prompt the participant to give details about contributing factors.*

9. “How would you describe your living arrangements at the time of initial psychosis? Has it changed since then?” *If they do not mention cannabis/mental health being impacted, probe to see if it has relevance.*

10. “How would you describe your way of relating to others (friends, family, close people) over time (e.g. before and after cannabis use; before and after the diagnosis of psychosis was made*?)” The interviewer may need to prompt here as well. Is their social circle the same size? Do the participant go out more or less than they used to?*

11. “In what way(s) have these relationships impacted you?” *If they do not mention cannabis or psychosis, probe if they have impacted them in those areas.*

12. “How have these relationships changed over time, if at all?” *If they do not mention cannabis/psychosis impacting them, probe.*

13. “Are your family members involved in your treatment program?” *(Family member involvement is not always a positive experience; the interviewer should be prepared to receive any answers on the spectrum from extremely positive to extremely negative). If yes “*How have they been involved?’

14. “Have other members of your family ever struggled with mental health or substance abuse?” *As family members may not have consented to the sharing of their personal health information, try to steer this question more towards the relationship (e.g. mother, father, uncle, etc.) rather than names.*

15. “What impact, if any, did your gender or sexual orientation have on your experiences?”

16. “How would you evaluate the treatment you have been receiving?” *Let them answer,* “Have you ever been forced or coerced into treatment for anything?” *Probe for positives/negatives of treatment if they do not mention any.*

17. “What helped you cope with all the experiences/events that we discussed today”? *Ask only if not previously covered by the interviewee.*

18. “Is there anything else you think we should know, or did not discuss that you think is relevant?”

F. Interview Questions Family Members (original)

QUALITATIVE INTERVIEW FOR FAMILY MEMBERS WITH LIVED EXPERIENCE

Welcome and introduction (items in quotes are suggested script)

1. Interviewer introduces self and inquires how to address the participant: "We can be on a first name basis or use your preferred appellation"

2. Start by framing the interview: "You were selected to participate in this study because you have been identified as the closest family member by one of our study participants who suffers from psychosis. We are going to ask you questions about your views with respect to a few important matters related to their diagnosis and related context. The results will be used to better understand the risk factors that can create vulnerability for cannabis use and severe psychosis, but also to discover ways in which patients can be helped".

3. The interviewer informs the participant that the conversation will be audio recorded.

Guidelines

1. "I will ask you a series of questions. There are no right or wrong answers, only different points of view. Feel free to speak candidly about your experience and point of view."

2. The interviewer may have to inform the participant that he/she is not able to share his/her thoughts on any subjects discussed. "My role as an interviewer will be to guide the conversation, not to provide my own experiences or thoughts."

Interview questions

1. "I would first like to ask some demographic questions to start the interview": Interviewer asks name, age, occupation of interviewee and relationship to patient.
2. "What is your current understanding of the relationship between cannabis and psychosis?"
3. "How would you describe your loved one's journey with cannabis use and psychosis from the earliest time you can remember to present day?"
4. "How have you felt over time about your loved one using cannabis (in general/in your presence/your home)?"
5. "Are you and your loved one's views on cannabis role and psychosis in agreement?"
6. "Has your relationship with your loved one been affected by their cannabis use and/or diagnosis of psychosis?"
7. "Are you aware of any trauma history in your loved one's life?" (If 'Yes', then proceed to question 8, if 'No', then skip to question 9).
8. "Do you see a connection between your loved one's history of trauma and their cannabis use and/or psychosis?"
9. "How would you describe your loved one's way of relating to others over time? Have you seen any changes?" (The interviewer may need to prompt with e.g. before and after cannabis use; before and after the diagnosis of psychosis was made).
10. "Do you see any connection between your love one's close relationships and their cannabis use and/or psychosis?"
11. "Are there any factors that put your loved one at risk for self-harm or suicide?"
12. "Have you ever resorted to drastic means to help your loved one receive treatment for either cannabis use or psychosis?"
13. "Do you see a connection between your loved one's living arrangements and their cannabis use and/or mental health?"

14. “Have you or other members of your family ever struggled with mental health or substance abuse?” (The interviewer reassures the participant that they do not need to answer any questions in the interview that they feel uncomfortable with if they hesitate to answer this question).
15. “Do you currently need/receive help for mental health or substance use disorder?” (Again, the interviewer reassures the participant that they do not need to answer. The interviewer may want to probe medications here though if they are unclear on what help is. Some individuals may be receiving treatment through their family doctor that may be classified as “a drug to help me sleep” for example).
16. “How involved are you in your family member’s treatment program and what do you think of it?”
17. “Have you received any information about the relationship between cannabis and psychosis from the professionals involved in your loved one’s treatment?”
18. “Is there something you would like to change about your loved one’s treatment to help them more or faster?”
19. “Is there something you would like to change about your approach with respect to your loved one’s struggles?”
20. “What helped you cope with all the difficulties that we discussed today?”
21. “Is there anything else you would like to share with us?”

G. Interview Questions Family Members (revised)

QUALITATIVE INTERVIEW FOR FAMILY MEMBERS WITH LIVED EXPERIENCE

Welcome and introduction (items in quotes are suggested script)

1. Interviewer introduces self and inquires how to address the participant: "We can be on a first name basis or use your preferred name"

2. Start by framing the interview: "You were selected to participate in this study because you have been identified as the closest family member by one of our study participants who suffers from psychosis. We are going to ask you questions about your views with respect to a few important matters related to their diagnosis and related context. The results will be used to better understand the risk factors that can create vulnerability for severe psychosis, and also to discover ways in which patients can be helped".

3. The interviewer informs the participant that the conversation will be audio recorded.

Guidelines

1. "I will ask you a series of questions. There are no right or wrong answers, only different points of view. Feel free to speak candidly about your experience and point of view."

2. The interviewer may have to inform the participant that he/she is not able to share his/her thoughts on any subjects discussed. "My role as an interviewer will be to guide the conversation, not to provide my own experiences or thoughts."

Interview questions

1. "I would first like to ask some demographic questions to start the interview." Interviewer asks name, age, occupation of interviewee and relationship to patient.

2. "Can you tell me how you've come to understand your loved one's psychotic episode(s)?" *Wait to see what they say first – then probe if needed. Want to get a sense of what their loved one is like. Probes: "Can you give me a sense of the timeline before the episode?" "What did you observe prior to the episode?" "What might have caused the episode?"*

3. "How would you describe your loved one's journey with cannabis use?" *See what they say first, then could ask about first time use, frequency, amount, etc.*

4. "How have you felt over time about your loved one using cannabis (in general/in your presence/your home)?"

5. "To what extent, if at all, are you and your loved one's views on cannabis and psychosis in agreement?"

6. "I am wondering about whether your relationship with your loved one has been affected by cannabis use, and if it has, how so?" *Let them answer*. "What about their psychosis, how has that affected your relationship, if at all?"

7. "I am wondering about the presence of any trauma history in your loved one's life?" *See if they naturally connect the trauma to cannabis use/psychosis, if not go to question 8*

8. "I am wondering if you see any connection between your loved one's cannabis use and trauma? How do you view this connection?" *Let them answer.* "How do you see the connections, if any, between their psychosis and trauma?"

9. "How would you describe your loved one's way of relating to others over time? Have you seen any changes?" *The interviewer may need to prompt with e.g. before and after cannabis use; before and after the diagnosis of psychosis was made.*

10. "What connections, if any, would you describe between their close relationships and cannabis use? *Let them answer.* "What about any connections if any to psychosis?" *If yes.* "Can you tell me a little more about that?"

11. "Do you see a connection between your loved one's living arrangements and their cannabis use?" *Let them answer.* "What about connections to their mental health?"

12. "I'm wondering whether you've ever felt if your loved one was at risk for self harm or suicide?" *Let them answer how they understood what led up to that before asking probes. Probing questions: "What do you think might precipitate that?" "Can you tell me about when that occurred?" (If they say they attempted suicide).*

13. "How involved are you in your family member's treatment program (EPIP) and what do you think of it?"

14. "What has your experience of treatment with your loved one been like?" *Probe if it they had to resort to drastic measures if they do not mention.*

15. "How would you evaluate the treatment that your loved one has received? *Let them answer.* If necessary: "What has been good? What has been not good?"

16. "I am wondering whether other members of your families have ever struggled with mental health or substance abuse?" *The interviewer reassures the participant that they do not need to answer any questions in the interview that they feel uncomfortable with if they hesitate to answer this question.*

17. "Is there anything else you would like to share with us, or anything we did not cover that you think is relevant?"