CANNABIS AND PARENTING: AN EXPLORATORY ANALYSIS OF THE
RELATIONSHIPS BETWEEN CANNABIS USE, ATTACHMENT, AND PARENTING
OUTCOMES

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Abstract

Alcohol and other drug use have demonstrated negative impacts on parenting behaviours and parent-child attachment. A major shift in federal policy legalized recreational cannabis use for adults in Canada in October 2018. In light of shifting social norms and changes to policy for individuals of reproductive age, important questions arise about the impact of regular cannabis use (RCU) on parenting. Elucidating the influence of RCU on parenting is crucial not only in the context of supporting a healthy developmental environment, but in matters of custody and other litigation pertaining to parent-child interactions. In the present study 313 participants (25.9% male, 73.5% female, 0.6% other) who identified as living in Canada with at least one child under the age of six were recruited from parenting groups online and a Canadian panel company. 27.5% were regular cannabis users. RCU did not have a significant association with measures of parenting and attachment after controlling for problematic alcohol use (PAU) (all \( p \)'s >.05). Within cannabis users, using cannabis for the purpose of expanding awareness and perception expansion was associated with interest and curiosity in the child’s mental states (\( p <.05 \)). Problematic patterns of use were not associated with child maltreatment or child attachment difficulties after controlling for PAU (\( p \)'s >.05), however it was associated with adult attachment difficulties before and after controlling for PAU (\( p<0.01, p<0.05 \)). Finally, there was an association between poor mental health and all measures of parenting, however this effect was not contingent on RCU (\( p \)'s <.05).

There is a dearth of research assessing the impact of RCU on parenting. The results of this study suggest that cannabis users do not differ from non-users on important indices of parenting and attachment. These findings will be of interest as the potential impact of legal cannabis use is reconsidered in matters of custody, litigation, and social stigma related to parental cannabis consumption.
Lay Summary

The purpose of this study is to evaluate the impact of cannabis use on parenting behaviours and attachment. Previous research has focused on parenting and problematic cannabis use, however there is a dearth of research on the impact of typical use patterns, that is, moderate, recreational cannabis use. An online survey was administered to parents of children between the ages of 1-6 recruited through parenting groups on social media as well as through Leger Marketing, a Canadian research and polling service. Specifically, this study examined the differences between cannabis users and non-users on measures of attachment and parenting outcomes, as well as the potential moderating effects of mental health and alcohol use. Results suggest that regular cannabis use does not have a negative impact on parenting and attachment. Among cannabis users, using cannabis with the intention to expand experiential awareness may be associated with some positive aspects of parent-child attachment.
Preface

The Behavioural Research Ethics Board of the University of British Columbia’s Okanagan Campus granted ethics approval for this research. The certificate approval number for the project is H18-03511. To date, the results of this study have not been published.
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1 Introduction

Canada has one of the highest prevalence rates of cannabis use in the world, with 18% of Canadians between the ages of 15-65 indicating that they have used cannabis within the past three months (Rotermann, 2019). While the prevalence of cannabis use has decreased or remained stable for age groups under 25, cannabis use has increased in adults over 25, with the average age of cannabis users currently at 35.5 years old. The average age of first parenthood in Canada is hovering around 30 years of age, and about a quarter of Canadians in this age group are using cannabis (Provencher, Milan, Hallman, & Aoust, 2018; Rotermann, 2019).

In addition to the medical cannabis program established in 2001 with over 100,000 registered patients, (Health Canada, 2016), adult recreational cannabis use was federally legalized in October 2018. In light of the high prevalence, shifting social norms, and pending changes to policy for individuals of reproductive age, important questions arise about the impact of cannabis on parenting. Current guidelines from the Government of Canada suggest that it is safest to avoid non-medical cannabis while parenting (Public Health Agency of Canada, 2018). Concerns in the report include exposure to second-hand smoke or accidental ingestion, and the health impact on the parents. There is also postulated concern regarding reduced attention and ability to react in an emergency, impaired decision making, missed need-related cues from children, and an effect on parent-child interactions and attachment. Elucidating the influence of cannabis use on parenting is crucial not only in the context of supporting a healthy developmental environment, but in matters of custody and other litigation pertaining to parent-child interactions.
1.1 Attachment

One of the key concepts around parenting is attachment, first conceptualized by Bowlby in the 1950’s (Bowlby, 1953). Forming an attachment relationship is a hardwired part of development, necessary to ensure survival of infants, and thus humanity, from an evolutionary perspective. The impact of an individual’s attachment relationship extends beyond infancy to relationships with others for the rest of their lives, affecting the ability to form and maintain productive familial, romantic, peer, and professional relationships (Crittenden, 2006).

While virtually all children attach, the quality of the attachment style can vary widely. While other models of attachment have been developed, the traditional ABC+D model developed by Bowlby and his colleague Ainsworth has the most empirical validation and is the standard used in assessment for children (Holmes & Farnfield, 2014). The traditional model categorically identifies four primary child attachment styles in the ABC + D model: Insecure-Avoidant (A), Secure (B), Insecure-Ambivalent (C), and Disorganized (D). These attachment styles form based primarily on interactions between the child and the caregiver which influence the child’s perception about the world and relationships (Ainsworth, 1979b).

Secure attachment is present for approximately 65% of children, characterized by having a general sense that their environment is reliable, predictable, and trustworthy. When they are separated from their caregiver they experience stress, and when reunited they express their distress and seek reassurance, after which they return to play and exploring their surroundings. They treat their caregiver as a secure base from which they can explore the world. Avoidant children, approximately 20%, experience stress when separated from their caregiver, but when reunited hide their distress and avoid contact. This style may develop when expressions of positive emotions but not negative emotions are accepted by the caregiver.
Approximately 10% of children are characterized as ambivalent and are stressed when separated from the caregiver, but upon being reunited express distress and try to get close to the caregiver while simultaneously pushing them away. This style tends to develop when caregivers may be less sensitive to the communication of the child. These first three styles display a strategic, organized routine of interacting with the caregiver, and all children are primarily categorized as one of these three styles (Ainsworth, 1979b; Holmes & Farnfield, 2014). The fourth category, disorganized, is assigned on top of the primary category to indicate disruptions in the primary attachment style which often occur when the child still needs to rely on the caregiver but there is an element of fear or extreme insensitivity. About 15% of children display a disorganized style of attachment, which is associated with the most negative outcomes (Holmes & Farnfield, 2014; Reijman, Foster, & Duschinsky, 2018).

1.2 Developing an Attachment Bond

One of the implications of attachment theory is that parenting behaviours play a strong role in child development. Parenting is necessarily a primary factor in the development of an individual’s attachment style in infancy, and although there are events and interventions that can instigate a change in attachment style, research suggests that the attachment style developed in childhood tends to be maintained throughout the lifespan (Barlow et al., 2016; Holmes & Farnfield, 2014). As such, determining parental factors that influence attachment is pertinent to support the development of healthy attachment relationships throughout the lifespan.

The primary purpose of infants’ attachment is to have their needs detected and then met (Bowlby, 1953). Thus, the primary factors that influence the development of an attachment bond are those that impact the caregiver’s ability to be aware of and then provide what the child needs. In this way, the sensitivity of the caretaker is central to the formation of the
attachment relationship. The essence of sensitivity is the process of mentalization: the ability to understand the inner cognitive and emotional processes of others in the context of observed behaviour. Parental reflective functioning (PRF) is a term that refers specifically to the relationship between a parent and a child, and the parent’s ability to link the child’s observed behaviour to an inner mental or emotional process (Pajulo et al., 2018). Once a parent has engaged with the child, the next step is to actually address and provide for the detected needs. The physical, emotional, mental, and instrumental resources available interact to determine what care the parent figure is able to provide (Holmes & Farnfield, 2014). Substance use has the potential to influence both the sensitivity and resources available to parents, in turn influencing attachment (Mayes & Truman, 2005).

1.3 Substance Use and Parenting

Virtually all of the research concerning substance use and parenting has focused on problematic use. In general, problematic substance use in parents is linked with a decreased PRF capacity (Håkansson, Söderström, Watten, Skårderud, & Øie, 2018; Pajulo et al., 2018). Other observed effects include decreased awareness, sensitivity, emotional regulation, stability, social support, responsiveness, communication, and positive interactions between the parent and child (Holmes & Farnfield, 2014). While many studies do not differentiate among the substances being used, those that do distinguish among substances show that the specific impacts of parental substance use are varied, as could be expected due to the heterogeneous effects of different substances. Drugs that are more stimulating tend to create an environment that is less stable and predictable, whereas drugs that are more sedative or relaxing can contribute to less responsive and more withdrawn parenting interactions (Mayes & Truman, 2005).
In addition to the specific effects of different drugs, the corresponding environment can vary dramatically based on the influence of the legality, social acceptance, cost, and mode of access for different substances (Mayes & Truman, 2005). In the case of cannabis, the prohibition of cannabis use has been documented as causing more harms to individuals, families, and communities than the use of the drug itself (Beckett & Herbert, 2010). Individuals who use cannabis have been marginalized and stigmatized during this period of prohibition, and as cannabis becomes a legalized, regulated substance, the harms associated with its use stand to decrease.

In the context of cannabis and parenting in this emerging legal landscape, cannabis has now joined alcohol as a regulated psychoactive substance used commonly for recreational and social purposes, with problematic use emerging for some individuals. A primary difference between cannabis and alcohol is the extensive documented therapeutic use of cannabis for a wide range of physical and mental health conditions. This complicates discussions around cannabis and parenting as cannabis use can fall anywhere on a continuum of therapeutic, recreational, and/or problematic use, muddying the waters in contrast to the comparably more straightforward assessment of alcohol use.

1.4 Alcohol and Parenting

Over three quarters of Canadians over the age of 15 drink alcohol, and of them 23% engage in heavy episodic drinking (World Health Organization, 2014). The risk of developing an alcohol use disorder is elevated between the ages of 18-34, the age range where parenthood is most likely to occur (Zucker et al., 2002). Even when use of alcohol is not at a problematic level, a report by the Institute of Alcohol Studies found that although there is a clear dose-response relationship between the negative impact of parental drinking and the amount consumed: even low to moderate drinking can have detrimental effects for children in in the
form of anxiety or embarrassment if they perceive that their parent is “tipsy” or drunk (Institute of Alcohol Studies, 2017).

Problematic parental alcohol use has been associated with an increase in negative family climate, conflict, child anxiety sensitivity and development of other child psychopathology, as well as decreased expressiveness, closeness, availability and sensitivity (Eiden, Edwards, & Leonard, 2002; Eiden et al., 2010; MacPherson, Stewart, & McWilliams, 2001; Olson, O’Connor, & Fitzgerald, 2001). In addition, adults with an alcohol-use disorder are more likely to be insecurely attached, which may be passed on to their children through the high correlation between parent and child attachment styles (Wyrzykowska, Głogowska, & Mickiewicz, 2014). Infants in families where one or both parents engage in problematic alcohol use have an elevated risk of being insecurely attached at 12-months (Eiden et al., 2002). Adolescents who grew up with a paternal figure who used alcohol problematically had more attachment difficulties than those who did not, an effect that was mediated by attachment to the maternal figure (Cavell, Jones, Runyan, Constantin-Page, & Velasquez, 1993).

Differences in attachment extend to adult individuals who grew up with a parent who displayed problematic alcohol use. Several studies have found that adult children with parents whom displayed signs of problematic alcohol use are more likely to have an insecure attachment style compared to those whose parents did not engage in problematic alcohol use (Jaeger, Hahn, & Weinraub, 2000; Kelley et al., 2010; Kelley, Cash, Grant, Miles, & Santos, 2004). Whether the parent was the mother, father, or both, their adult children are more likely to be avoidant or anxiously attached, reflecting the challenges that parents may face being available, sensitive, and responsive while engaging in problematic alcohol use.
1.5 Cannabis and Parenting

A study of parents with children up to 19 years of age in Washington State, where cannabis was recently legalized for recreational use, found that well over three quarters of parents had used cannabis in the past and a third had used cannabis in the past year (Kosterman et al., 2016). Although the majority of participants approved of adult cannabis use, 9 out of 10 parents did not approve of using cannabis while caring for children or using cannabis in front of children. However, within past-year cannabis users, over a third had used cannabis in the presence of their children.

Studies of the impact of cannabis use on attachment is limited to individuals experiencing problematic use. A study of individuals with either an opioid, “ecstasy”, or cannabis use disorder as well as controls with no substance use disorder found that cannabis users were less likely to be fearful in attachment and 30 times more likely to be securely attached than the other substance using groups, and 4 times less likely to be securely attached than controls. Those with a cannabis use disorder who were insecurely attached were more likely to be avoidant and less likely to be anxious than the other substance using groups, supporting the idea that problematic use of substances considered to be sedating tend to correlate with withdrawal and deactivation (Schindler, Thomasius, Petersen, & Sack, 2009). Another study of individuals who were in treatment for substance-dependence with no polysubstance use found that cannabis dependencies were correlated with an avoidant attachment style, in contrast with alcohol and opioid dependencies which were positively correlated with an ambivalent attachment style (Pastore, 2014). As research shows that insecure attachment styles in parents are correlated with negative parenting outcomes and insecure attachment styles in their children (Holmes & Farnfield, 2014; Jones, Cassidy, &
Shaver, 2015), it is possible that problematic cannabis use may be associated with negative parenting and child attachment.

On the other hand, problematic cannabis use has been documented to occur in less than 10% of users (Health Canada, 2018), leaving the vast majority of cannabis use to recreational and therapeutic purposes. Chronic pain, arthritis, and mental health conditions including anxiety, depression, PTSD, and substitution for other more harmful substance use are some of the most commonly cited reasons for therapeutic cannabis use, with emerging evidence beginning to provide support for patients’ self-reports of relief (Lucas & Walsh, 2017; Walsh, Gonzalez, Crosby, S Thiessen, et al., 2017). Experiencing mental health conditions or chronic pain is associated with insecure parental-infant attachment and poorer parenting outcomes (Booth, Macdonald, & Youssef, 2018; Evans & Keenan, 2007; Evans, Keenan, & Shipton, 2007; Martins & Gaffan, 2000; Riggs & Jacobvitz, 2002).

While research on problematic and therapeutic use has proliferated, there is a dearth of research assessing the impact of moderate, recreational use. Among individuals who identify as recreational users, one of the most commonly given reasons to use cannabis is for relaxation and stress-relief (Hyman & Sinha, 2009). Parental stress has a demonstrated negative impact on parental sensitivity, which in turn can influence the attachment and parenting provided (Booth et al., 2018). As such, non-problematic cannabis use may not share the negative impacts of problematic use on parenting and attachment. Another commonly endorsed motive for cannabis use is expansion of experiential awareness, using cannabis with the intent of enhancing awareness of both internal and external environments, with an openness to reinterpreting relationships with oneself, others, and the environment (Simons, Correia, Carey, & Borsari, 1998). Within cannabis users, it is possible that expansion motives for use may be associated with some positive aspects of parent-child attachment.
1.6 Cannabis and Child Maltreatment

Previous research has found a relationship between substance use and domestic violence (Foran & O’Leary, 2008; Moore et al., 2008). Child maltreatment often co-occurs with domestic violence, as children living in homes where domestic violence occurs are much more likely to be on the receiving end of violence themselves, and parents who act violently towards their spouse are more likely to be violent towards their children as well (Cox, Kotch, & Everson, 2003). While the use of both alcohol and cannabis have been linked to an increased incidence of domestic violence (Foran & O’Leary, 2008; Moore et al., 2008), other research has shown that after controlling for spurious variables, cannabis use was only weakly associated or not at all associated with domestic violence (Macdonald et al., 2008).

1.7 Cannabis and Mindfulness

Mindfulness, a practice of non-judgmental awareness of the present moment, has been linked with positive mental health outcomes including improved emotional regulation, attention, memory, and quality of life alongside decreases in rumination, anxiety, depression, sensory pain, medical symptoms, and inflammation (Grossman, Niemann, Schmidt, & Walach, 2004; Kiecolt-Glaser et al., 2010; Nagy & Baer, 2017). Most publications on cannabis and mindfulness have focused on the efficacy of mindfulness in attenuating problematic cannabis use (Chiesa & Serretti, 2014; Karyadi, VanderVeen, & Cyders, 2014) or practicing mindfulness in combination with cannabis use to maximize the therapeutic benefits of cannabis use and mitigate potential harms (Dussault, 2017; Smith, Smith, & Barth, 2015). As such, the orientation and motives behind cannabis use may have varying outcomes. Expansion motives, that is, using cannabis for the purpose of expanding present moment awareness and changing perception, is by definition a more mindful approach to cannabis use, and accordingly may be associated with more positive outcomes (Simons et al., 1998).
Although mindfulness may increase the benefits of cannabis use, it may also be a bidirectional relationship. Cannabis has been described as an entheogen - a substance that may induce spiritual experiences (Dussault, 2017) - and studies of entheogenic plants have identified increased mindfulness as a mediator of the relationship between entheogen use and positive outcomes (Soler et al., 2016). Given the overlapping qualities between parental reflective functioning and mindfulness, non-problematic cannabis use may not share the negative consequences of other substance use due to potential mindfulness-related benefits.
2 Current Study

2.1 Purpose

In the context of the legalization of cannabis use for adults in Canada, there are significant questions about the impact of cannabis use on parenting. The literature to date has focused on the impact of problematic cannabis use and its potential negative impact on parenting, however there is some evidence to suggest that this relationship may not hold for the majority of cannabis use which is therapeutic/recreational. The present study seeks to elucidate a) the differences between cannabis users and non-users on measures of parenting and attachment, b) the differences within cannabis users according to use orientation on parenting outcomes and attachment outcomes, and c) the relationship between parenting and attachment outcomes, cannabis use, and parent mental health.

2.2. Hypotheses

There are three sets of hypotheses for this study. The first set of hypotheses regard differences between cannabis users and non-users on measures of parenting and attachment. It was hypothesized that parents who use cannabis regularly would score lower on measures of positive parenting behaviours and parent-child attachment, but that this effect would be attenuated after controlling for problematic alcohol use. Specifically, the first set of hypotheses are as follows:

1a) Cannabis users will have a lower capacity for parental reflective functioning compared to non-users.

1b) Cannabis users will have less parental protective factors than non-users.

1c) The children of cannabis users will have more child attachment difficulties compared to non-users.

1d) Cannabis users will have more attachment difficulties compared to non-users.
1e) Cannabis users will have higher rates of child maltreatment compared to non-users.
1f) In all cases above, the effect will be attenuated after controlling for problematic alcohol use.

The second set of hypotheses pertain to differences within cannabis users according to use orientation. It was hypothesized that expansion motives for use, that is, using cannabis for the purpose of expanding awareness and openness to relationships and the environment, may be positively associated with the capacity for parental reflective functioning. On the other hand, problematic patterns of cannabis use may result in higher levels of child maltreatment and attachment difficulties. Where problematic patterns of cannabis use have an effect, controlling for problematic alcohol use may attenuate the effect. Specifically, the second set of hypotheses are as follows:

2a) Within cannabis users, expansion motives for cannabis use will be associated with interest and curiosity in child mental states.
2b) Within cannabis users, expansion motives for cannabis use will be negatively associated with parental reflective functioning difficulties.
2c) Within cannabis users, expansion motives for cannabis use will be associated with parental protective factors.
2d) Within cannabis users, expansion motives for cannabis use will be negatively associated with child attachment difficulties.
2e) Within cannabis users, expansion motives for cannabis use will be negatively associated with adult attachment difficulties.
2f) Within cannabis users, expansion motives for cannabis use will be negatively associated with child maltreatment.
2g) Within cannabis users, problematic patterns of use will be associated with decreased parent protective factors.

2h) Within cannabis users, problematic patterns of use will be associated with parent reflective functioning difficulties.

2i) Within cannabis users, problematic patterns of use will be associated with child attachment difficulties.

2j) Within cannabis users, problematic patterns of use will be associated with adult attachment difficulties.

2k) Within cannabis users, problematic patterns of use will be associated with child maltreatment.

2l) In all cases above, the effect will be attenuated after controlling for problematic alcohol use.

The third set of hypotheses pertain to the relationship between parent mental health, cannabis use, and parenting and attachment outcomes. It was hypothesized that poor mental health will be associated with poorer parenting and attachment outcomes, however this effect will not be contingent on cannabis use. Poorer outcomes on parental reflective functioning, parental protective factors, adult attachment difficulties, child attachment difficulties, and child maltreatment will all be associated with mental health, however the association will not be contingent on cannabis use.
2.3 Method

2.3.1 Participants

Participants were recruited through two avenues. The first recruitment stream (n=149) was drawn by posting an ad for the study in parenting groups on social media from across Canada. The second recruitment stream (n=164) was recruited through panels run by Leger, a Canadian research and analytics company. Leger recruited participants by mailing out a study ad to a general population panel.

Individuals were eligible to participate if they identified that they were Canadian citizens or permanent residents of Canada and had at least one child under the age of 6 who lived with them. At the end of the survey, participants recruited through social media who opted to provide their email were entered into a draw for one of two $50 (CAD) Amazon gift cards, while panel members recruited by Leger were awarded $2.00, four Air Miles, or 50 Aeroplan points, along with two entries into Leger’s monthly draws. Based on the requirements of the planned statistical analyses, it was determined that a minimum sample size of 200 participants were required.

2.3.2 Measures

A standard demographics questionnaire was administered querying gender, age, education, and number and age of children. Participants completed questions querying frequency and amount of cannabis use. The following measures were used to define the variables of interest in this study:

2.3.2.1 Regular cannabis use.

Frequency of cannabis use was measured in this study with the frequency question from the Cannabis Use Disorders Identification Test (CUDIT; Adamson & Sellman, 2003) “How often do you use cannabis?” with response options of never, monthly or less, 2-4 times a month,
2-3 times a week, or 4 or more times a week. Individuals who reported using cannabis monthly or less were categorized with those who selected “never” as non-users, as we were interested in studying regular cannabis use. Thus, regular cannabis use was operationally defined in this study as using cannabis 2-4 times a month or more, while individuals who reported using cannabis less than twice a month, including never, were categorized as non-users. Other studies of regular cannabis use have used 1-2 times per week as the definition of regular use (Pacek, Mauro, & Martins, 2015), however the question on this measure separates once weekly from two or more times weekly. As the 2-4 times per month group included weekly users, this and a preliminary examination of the data determined that this group fit best with the regular cannabis users.

2.3.2.2 Problematic cannabis use.

Problematic cannabis use was measured using the Cannabis Use Disorders Identification Test (CUDIT; Adamson & Sellman, 2003). The CUDIT is a measure based on the AUDIT developed to query problematic cannabis use. The 14 items pertaining to cannabis behaviours and feelings are rated on a 5-point Likert scale ranging from “0 = Never” to “4 = Daily”. Higher scores on the CUDIT indicate higher rates of behaviours associated with problematic patterns of cannabis use.

2.3.2.3 Problematic alcohol use.

Problematic alcohol use was measured using the Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, De La Fuente, & Grant, 1993). The AUDIT is a brief 10-item measure developed to screen for problematic alcohol use according to the World Health Organization’s diagnostic criteria for alcohol dependence. Respondents rate the first 8 items pertaining to the frequency of alcohol use behaviors and feelings on a 5-point Likert scale ranging from “0 = Never” to “4 = Daily”, with the last 2 items rated on a 3-point scale.
The AUDIT is used in this study to measure alcohol use, with higher scores indicated higher rates of problematic alcohol use. Items in this measure can be found in Appendix 1.

2.3.2.4 Motives for cannabis use.

Motives for cannabis use were measured using the Marijuana Motives Measure (MMM; Simons, Correia, Carey, & Borsari, 1998). The MMM is a five-factor measure of potential motives for cannabis use, adapted from the Drinking Motives Questionnaire (Cooper, 1994). The 25 items are rated on a 5-point Likert scale from “1 = Almost never/never” to “5 = Almost always/always”. The measure provides a score for each of the following five potential motives for cannabis use: enhancement, conformity, expansion, coping, and social. In this study, we used the expansion subscale score to measure expansion motives for cannabis use. Items in this measure can be found in Appendix 2.

2.3.2.5 Child attachment difficulties.

Child attachment difficulties were measured using the Kinship Center Attachment Questionnaire (KCAQ; Kappenberg & Halpern, 2006). The KCAQ is a concise screener for a child’s attachment difficulties and is completed by the caregiver. The measure is designed to be used for children under 6 years of age. The questionnaire consists of 20 items (α = .75) querying behaviours of the child rated on a 7-point Likert scale ranging from “0 = Never/rarely” to “6 = Almost always”. The measure produces a total score which quantifies child attachment difficulties with their caregiver. Higher scores indicate higher rates of child attachment difficulties. The KCAQ total score has moderate to high positive correlations with the Child Behaviour Checklist, a widely used instrument assessing child behaviour difficulties, providing evidence of convergent validity for this measure (Kappenberg & Halpern, 2006). Items in this measure can be found in Appendix 3.
2.3.2.6 *Parental reflective functioning.*

Parental Reflective Functioning was measured using the Parental Reflective Functioning Questionnaire (PRFQ; Luyten, Mayes, Nijssens, & Fonagy, 2017). The PRFQ is a brief self-report measure designed to quantify the PRF ability, a measure of the parent’s ability to understand the mental states of their child under the age of 6. The PRFQ uses 18 items to measure three primary components of PRF: interest and curiosity of the child’s mental states ($\alpha = .75$), recognizing the opacity of mental states ($\alpha = .82$), and prementalizing which captures distortions in mentalizing ability ($\alpha = .70$). The statements are rated on a 7-point Likert scale from “Strongly Disagree” to “Strongly Agree”. Interest and curiosity of the child’s mental states (ICMS) is associated with positive parenting outcomes including more secure parent-child attachment relationships, and as such this subscale was used in this study as a measure of positive aspects of parental reflective functioning. Comparison to commonly used measures of parent-child attachment, emotional availability, and demographic features with known relationships to parental reflective functioning support the validity of this measure (Luyten et al., 2017). The items on this scale can be found in Appendix 4.

2.3.2.7 *Adult attachment difficulties.*

Adult attachment difficulties were measured using the Experiences in Close Relationships – Relationship Structures Questionnaire (ECR-RS; Fraley, Heffernan, Vicary, & Brumbaugh, 2011). The ECR-RS is a self-report measure of attachment patterns across different relationship types including parental relationships, romantic partner, and friendship relationships, producing scores for each relationship type as well as global scores. The participant is asked to rate 36 items on a 7-point Likert scale from “Strongly Disagree” to “Strongly Agree”. This scale is a dimensional measure providing scores for attachment-related avoidance ($\alpha = .88$) and attachment-related anxiety ($\alpha = .80$). This measure has demonstrated
correlations with personality traits and other related variables in a similar pattern to other measures of attachment (Fraley et al., 2011). Higher scores on the ECR-RS are indicative of higher rates of adult attachment-related difficulties. Items in this scale can be found in Appendix 5.

2.3.2.8 Parental protective factors.

Parental protective factors were measured using the Parents Assessment of Protective Factors (PAPF; Kiplinger & Browne, 2014). The PAPF is a self-report measure of protective factors (that is, conditions that enhance well-being and mitigate risk factors) which may or may not be present as positive parenting behaviours in the parenting style of an individual. The item pool for the PAPF was developed based on a review of 30 commonly used parenting instruments. The measure consists of 36 statements rated on a 5-point Likert scale from “This is not at all like me or what I believe” to “This is very much like me or what I believe”. Four factors were identified and a subscale is included for each factor: parental resilience ($\alpha = .88$), social connections ($\alpha = .93$), concrete support in times of need ($\alpha = .87$), and children’s social and emotional competence ($\alpha = .88$). The measure produces a score for each factor as well as a total score, with higher scores indicating higher rates of positive parenting factors. Face and content validity of the scale was established through review and revision by a Technical Advisory Committee. Convergent and construct validity were established by comparing composite reliabilities to the average variance extracted from the latent construct, and in each case composite reliability was higher than average variance extracted, indicating appropriate convergent and construct validity (Kiplinger & Browne, 2014). Items in this measure can be found in Appendix 6.
2.3.2.9 Child maltreatment.

Child maltreatment was measured using the Conflict Tactics Scale – Parent-Child (CTSPC; Straus, Hamby, Finkelhor, Moore, & Runyan, 1998). The CTSPC is a version of the Conflict Tactics Scale revised for use as a parent’s self-report measure of conflict tactics with their child. The 22 items on the scale are statements about parent behaviour, including physical and psychological aggression. Respondents rate each item on an 8-point scale indicating the frequency that each behaviour has occurred, ranging from “This has never happened” to “More than 20 times in the past year”. The CTSPC provides scores for subscales of nonviolent discipline (α = .70), psychological aggression (α = .60), physical assault (α = .55), and neglect (α = .22), as well as a total score. While some of the inter-item correlations are low, this is attributed to the relative rarity of the occurrence of many events on the scale. Tests using demographic correlates based on variables with established links to child maltreatment suggest adequate construct and discriminant validity of this scale (Straus et al., 1998). Items for this measure can be found in Appendix 7.

2.3.2.10 Parent mental health.

Parent mental health was measured using the Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995). The DASS is a set of three self-report scales designed to measure depression, anxiety and stress in a research or clinical setting. A shortened form of the regular 42-item scale was used consisting of 21 items, with 7 items on each scale. Cronbach’s alpha’s for the depression, anxiety, and stress 7-item subscales are .94, .87, and .91 respectively. Each statement is rated on a 4-point Likert scale ranging from “0 = Did not apply to me at all” to “3 = Applied to me very much, or most of the time”. The measure provides a global score for psychological distress, as well as scores for each of the three subscales. The DASS-21 has moderate to high correlations with other commonly used
measures of depression and anxiety, with correlations for the depression scale between .71 and .79, anxiety scale between .44 and .85, and stress between .57 and .68 (Antony, Bieling, Cox, Enns, & Swinson, 1998). Items on this measure can be found in Appendix 8.

2.3.3 Procedure.

All study procedures were approved by the Behavioural Research Ethics Board of the University of British Columbia Okanagan Campus (H18-03511). The study ad was posted in parenting groups and pages on social media inviting study participation. The study ad was also distributed to general population panels by Leger, a Canadian polling company. Individuals who met the inclusion criteria were able to participate by clicking a link to the online survey. The survey took between 15-30 minutes to complete, dependent on branching.

2.3.4 Analytical procedure.

Descriptive statistics were run on all variables to characterize the study data. Next, two preliminary analyses were run to produce a) bivariate correlations for the measures of parenting and attachment and b) bivariate correlations for the measures of cannabis use and alcohol use. Finally, a series of logistic and linear regressions were run to address the specific hypotheses, as detailed below.

2.3.4.1 Differences between cannabis users and non-users.

Binary logistic regressions were performed to assess predictors of regular cannabis use group membership. This test was selected as the data contained both categorical and continuous variables, and it was determined that not all variables were normally distributed. To answer the specific hypotheses, the following logistic regression analyses were run:

1a) To assess whether cannabis users have a lower capacity for parental reflective functioning compared to non-users, regular cannabis use was input as the dependent variable and parental reflective functioning difficulties (PRFQ) was input as the predictor variable.
1b) To assess whether cannabis users have less parental protective factors compared to non-users, regular cannabis use was input as the dependent variable and parental protective factors (PAPF) was input as the predictor variable.

1c) To assess whether the children of cannabis users have more child attachment difficulties than the children of non-users, regular cannabis use was input as the dependent variable and child attachment difficulties (KCAQ) was input as the predictor variable.

1d) To assess whether cannabis users have more attachment difficulties than non-users, regular cannabis use was input as the dependent variable and adult attachment difficulties (ECR-RS) was input as the predictor variable.

1e) To assess whether cannabis users have higher rates of child maltreatment in comparison to non-users, regular cannabis use was input as the dependent variable and child maltreatment (CTSPC) was input as the predictor variable.

1f) To control for problematic alcohol use, if the analyses above were significant, problematic alcohol use (AUDIT) was entered as a covariate in a second block in the model.

2.3.4.2 Differences within cannabis users.

Linear regressions were performed on cannabis users to examine differences with users. To answer the specific hypotheses, the following logistic regression analyses were run within cannabis users:

2a) To assess the association between expansion motives for use and interest and curiosity in mental states, interest and curiosity in mental states (ICMS) was input as the dependent variable and expansion motives (MMM-expansion scale) was input as the predictor variable.
2b) To assess the association between problematic patterns of use and parental protective factors, parent protective factors (PAPF) was input as the dependent variable and problematic patterns of use (CUDIT) was input as the predictor variable.

2c) To assess the association between problematic patterns of use and parental reflective functioning, parental reflective functioning (PRFQ) was input as the dependent variable and problematic patterns of use (CUDIT) was input as the predictor variable.

2d) To assess the association between problematic patterns of use and child attachment difficulties, child attachment difficulties (KCAQ) was input as the dependent variable and problematic patterns of use (CUDIT) was input as the predictor variable.

2e) To assess the association between problematic patterns of use and adult attachment difficulties, adult attachment difficulties (ECR-RS) was input as the dependent variable and problematic patterns of use (CUDIT) was input as the predictor variable.

2f) To assess the association between problematic patterns of use and child maltreatment, child maltreatment (CTSPC) was input as the dependent variable and problematic patterns of use (CUDIT) was input as the predictor variable.

2g) To control for problematic alcohol use, if the analyses above were significant, problematic alcohol use (AUDIT) was entered as a covariate in a second block in the model.

2.3.4.3 Associations between parent mental health, cannabis use, and parenting and attachment outcomes.

First, bivariate correlations were run to examine the associations between parent mental health (DASS) and parenting and attachment outcomes (parental reflective functioning (PRFQ), parental protective factors (PAPF), adult attachment difficulties (ECR-RS), child attachment difficulties (KCAQ), and child maltreatment (CTSPC). Next, a series of linear regressions were run with each parenting and attachment variable as the dependent variable,
and regular cannabis use, parent mental health (DASS), and the interaction term between regular cannabis use and parent mental health (regular cannabis use * DASS) each entered as predictors in three separate blocks.

2.4 Results

2.4.1 Descriptive Statistics.

2.4.1.1 Sample Characteristics.

The sample consisted of 313 individuals (25.9% male, 73.5% female, 0.6% other) who identified themselves as Canadian or residing in Canada with at least one child under the age of six living with them. The participants recruited through Leger tended to be slightly older and have a slightly lower income than those recruited through Facebook. Otherwise, there were no significant demographic differences between the two recruitment streams. As the sample was primarily female, the analyses were also run excluding males. As the pattern of results remained the same, males were including in the final analyses, however there were not enough male participants to formally assess the presence of any gender differences. Demographic characteristics of the sample are displayed in Table 1.
Within the sample, 86 participants (27.5%, 27.9% male, 72.1% female) identified as regular cannabis users, defined as using cannabis twice a month or more. Over three quarters of the cannabis users used cannabis at least twice a week (76.5%), with over half (56.5%) reporting cannabis use four or more times a week. Out of those who were not identified as regular cannabis users, 37% reported that they had never tried cannabis, 21.6% reported that
they had tried it once or twice, and the remaining participants reported some occasional use. The most commonly endorsed motive for cannabis use was enhancement, and the least common was conformity. Compared to the published norms when the measure was validated (Simons et al., 1998) motives for cannabis use were in the same hierarchical order, except for coping which was notably higher in this sample. While coping was the second most commonly endorsed motive in this sample, it was the second least commonly endorsed motive in the normative sample (M = 1.8). Motives for cannabis use are displayed in Table 2.

Table 2.

Motives for Cannabis Use Among Cannabis Users.

<table>
<thead>
<tr>
<th>Motive</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enhancement</td>
<td>2.8</td>
<td>1.0</td>
</tr>
<tr>
<td>Coping</td>
<td>2.5</td>
<td>1.1</td>
</tr>
<tr>
<td>Expansion</td>
<td>2.3</td>
<td>1.2</td>
</tr>
<tr>
<td>Social</td>
<td>2.3</td>
<td>1.1</td>
</tr>
<tr>
<td>Conformity</td>
<td>1.2</td>
<td>0.6</td>
</tr>
</tbody>
</table>

2.4.1.2 Descriptive Statistics for Measures.

Preliminary analyses were performed to characterize the study data. None of the measures were normally distributed (Shapiro-Wilk’s test $p < 0.05$ in all cases). However, because of the large sample size, the selected statistically procedures should be robust against the non-normal distributions (Ghasemi & Zahediasl, 2012). The means and standard deviations of the measures used in this study are displayed in Table 3.
Table 3.

Descriptive Statistics For Measures of Parenting, Mental Health, and Substance Use.

<table>
<thead>
<tr>
<th></th>
<th>Cannabis Non-users</th>
<th>Cannabis Users</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>CTSPC</td>
<td>4.2</td>
<td>5.1</td>
<td>4.5</td>
</tr>
<tr>
<td>PRFQ</td>
<td>2.8</td>
<td>0.7</td>
<td>2.8</td>
</tr>
<tr>
<td>ICM</td>
<td>6.0</td>
<td>0.8</td>
<td>5.9</td>
</tr>
<tr>
<td>KCAQ</td>
<td>32.9</td>
<td>13.4</td>
<td>34.7</td>
</tr>
<tr>
<td>PAPF</td>
<td>4.3</td>
<td>0.5</td>
<td>4.3</td>
</tr>
<tr>
<td>ECR-RS</td>
<td>2.7</td>
<td>1.0</td>
<td>3.0</td>
</tr>
<tr>
<td>AUDIT</td>
<td>3.3</td>
<td>3.5</td>
<td>5.1</td>
</tr>
<tr>
<td>DASS</td>
<td>32.6</td>
<td>9.9</td>
<td>37.2</td>
</tr>
<tr>
<td>CUDIT</td>
<td>-</td>
<td>-</td>
<td>7.3</td>
</tr>
</tbody>
</table>

Note: PAPF = Parenting protective factors, ECR-RS = adult attachment difficulties, KCAQ = child attachment difficulties, PRFQ = parental reflective functioning difficulties, CTSPC = child maltreatment.

2.4.2 Pearson Correlations.

2.4.2.1 Measures of parenting and attachment.

All measures of parenting and attachment were significantly correlated with each other except for positive parenting factors (PAPF) and parental reflective functioning difficulties (PRFQ). All other correlations ranged from small to large (minimum .14, maximum .58). The results are displayed in Table 4.

Table 4.

Pearson Correlational Analyses for Measures of Parenting and Attachment.

<table>
<thead>
<tr>
<th></th>
<th>PAPF</th>
<th>ECR</th>
<th>KCAQ</th>
<th>PRFQ</th>
<th>CTSPC</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECR</td>
<td>- .54**</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>KCAQ</td>
<td>- .29**</td>
<td>.58**</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>PRFQ</td>
<td>- .04</td>
<td>.14*</td>
<td>.28**</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CTSPC</td>
<td>- .38**</td>
<td>.29**</td>
<td>.39**</td>
<td>.26*</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: * p < 0.05; ** p < 0.01. PAPF = Positive parenting factors, ECR-RS = adult attachment difficulties, KCAQ = child attachment difficulties, PRFQ = parental reflective functioning difficulties, CTSPC = child maltreatment.
2.4.2.2 Measures of cannabis and alcohol use.

Measures of regular cannabis use, problematic cannabis use, and problematic alcohol use were all moderately correlated (minimum .20, maximum .46). The results are displayed in Table 5.

Table 5.

*Pearson Correlational Analyses for Measures of Substance Use.*

<table>
<thead>
<tr>
<th></th>
<th>CUDIT</th>
<th>RCU</th>
</tr>
</thead>
<tbody>
<tr>
<td>RCU</td>
<td>.46**</td>
<td>–</td>
</tr>
<tr>
<td>AUDIT</td>
<td>.24*</td>
<td>.20**</td>
</tr>
</tbody>
</table>

*Note:* *p* < 0.05; ** *p* < 0.01. CUDIT = problematic cannabis use, RCU = regular cannabis use, AUDIT = problematic alcohol use.

2.4.3 Cannabis use and parenting logistic regressions.

The assumptions of a binary logistic regression were evaluated and no violations were found for independence of errors, multicollinearity, or linearity of the logit.

2.4.3.1 Parental protective factors logistic regression.

A logistic regression analysis was conducted with parental protective factors (PAPF) total score as the predictor variable and regular cannabis use as the dependent variable. The model was not statistically significant, $\chi^2(1) = .35, p = .56$, indicating that this variable was unable to differentiate between regular users and non-users. The means for cannabis users and non-users are displayed in Figure 1.
2.4.3.2 Parental reflective functioning logistic regression.

A logistic regression analysis was conducted with parental reflective functioning difficulties (PRFQ) total score as the predictor variable and regular cannabis use as the dependent variable. The model was not statistically significant, $\chi^2(1) = .10, p = .75$, indicating that this variable was unable to differentiate between regular users and non-users. The means for cannabis users and non-users are displayed in Figure 2.
Figure 2. Comparison of Means Between Users and Non-users on Parental Reflective Functioning Difficulties. Note: RCU = regular cannabis user, No RCU equals non-user. PRFQ = parental reflective function difficulties.

2.4.3.3 Child attachment difficulties logistic regression.

A logistic regression analysis was conducted with child attachment difficulties (KCAQ) as the predictor variable, and regular cannabis use as the dependent variable. The model was not statistically significant, $\chi^2(1) = 1.10$, $p = .29$, indicating that this variable was unable to differentiate between regular users and non-users. The means for cannabis users and non-users are displayed in Figure 3.
2.4.3.4 Adult attachment difficulties logistic regression.

A logistic regression analysis was conducted with adult attachment difficulties (ECR-RS) and regular cannabis use as the dependent variable. The model was statistically significant, $\chi^2(1) = 4.99$, $p < .05$, indicating that this variable was able to differentiate between regular users and non-users with a small effect size ($d = 0.16$). Since the model was significant, problematic alcohol use was input in a second block. After controlling for alcohol use in the second model, adult attachment difficulties was no longer a significant predictor of regular cannabis use, $\chi^2(1) = 2.17$, $p < .14$. Results are displayed in Table 6. The means for cannabis users and non-users are displayed in Figure 4.
Table 6. Adult Attachment Difficulties and Problematic Alcohol Use Logistic Regression Analyses.

<table>
<thead>
<tr>
<th></th>
<th>β</th>
<th>SE</th>
<th>χ²</th>
<th>OR</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC-RS</td>
<td>.29</td>
<td>.13</td>
<td>4.99</td>
<td>1.34</td>
<td>.02</td>
</tr>
<tr>
<td><strong>Step 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECR-RS</td>
<td>.20</td>
<td>.14</td>
<td>2.17</td>
<td>1.22</td>
<td>.14</td>
</tr>
<tr>
<td>AUDIT</td>
<td>.09</td>
<td>.03</td>
<td>8.29</td>
<td>1.09</td>
<td>.004</td>
</tr>
</tbody>
</table>

*Note: OR = odds ratio. ECR-RS = adult attachment difficulties, AUDIT = problematic alcohol use.*

Figure 4. Comparison of means between users and non-users on adult attachment difficulties.

*Note: RCU = regular cannabis user, No RCU equals non-user. ECR-RS adult attachment difficulties.*

2.4.3.5 Child maltreatment logistic regression.

A logistic regression analysis was conducted with child maltreatment (CTSPC) total score as the predictor variable and regular cannabis use as the dependent variable. The model was approaching significance, $\chi^2(1) = .38$, $p = .05$ with a negligible effect size ($d = 0.01$). Since the model was approaching significance, problematic alcohol use (AUDIT) was added as a predictor in the second block. After controlling for problematic alcohol use in the second
model, child maltreatment was no longer approaching significance, $\chi^2(1) = .1.7, p = .19$. Results are displayed in Table 7. The means for cannabis users and non-users are displayed in Figure 5.

**Table 7. Child Maltreatment and Problematic Alcohol Use Logistic Regression Analyses.**

<table>
<thead>
<tr>
<th>Step</th>
<th>Variable</th>
<th>$\beta$</th>
<th>SE</th>
<th>$\chi^2$</th>
<th>OR</th>
<th>$p$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CTSPC</td>
<td>.02</td>
<td>.01</td>
<td>3.75</td>
<td>1.02</td>
<td>.05</td>
</tr>
<tr>
<td>2</td>
<td>CTSPC</td>
<td>.02</td>
<td>.01</td>
<td>1.74</td>
<td>1.02</td>
<td>.19</td>
</tr>
<tr>
<td></td>
<td>AUDIT</td>
<td>.10</td>
<td>.03</td>
<td>9.20</td>
<td>1.10</td>
<td>.00</td>
</tr>
</tbody>
</table>

*Note: OR = odds ratio. CTSPC = child maltreatment, AUDIT = problematic alcohol use.*

![Bar chart showing comparison of means between users and non-users on child maltreatment.](image)

*Figure 5. Comparison of Means Between Users and Non-users on Child Maltreatment.*

*Note: RCU= regular cannabis user, No RCU equals non-user, CTSPC = child maltreatment.*
2.4.4 Differences within cannabis users linear regressions.

2.4.4.1 Expansion motives and interest and curiosity in child mental states linear regression.

A linear regression analysis was conducted on cannabis users with expansion motive for cannabis use as the predictor variable and interest and curiosity in mental states subscale score as a measure of positive parental reflective functioning (ICMS) as the dependent variable. The results indicated that expansion motives for use were positively associated with positive parental reflective functioning, $\beta = .22$, SE $= .20$, $t(1,83) = 2.08$, $p < .05$, with a medium effect size ($d = .46$).

2.4.4.2 Expansion motives and parental reflective functioning difficulties.

A linear regression analysis was conducted on cannabis users with expansion motive for cannabis use as the predictor variable parental reflective functioning difficulties (PRFQ) as the dependent variable. The results indicated that expansion motives for use were not associated with parental reflective functioning difficulties, $\beta = .08$, SE $= .18$, $t(1,83) = .72$, $p = .46$.

2.4.4.3 Expansion motives and parental protective factors linear regression.

A linear regression analysis was conducted on cannabis users with expansion motive for cannabis use as the predictor variable and parental protective factors (PAPF) as the dependent variable. The results indicated that expansion motives for use were not associated with parental protective factors, $\beta = .02$, SE $= .24$, $t(1,81) = .18$, $p = .86$.

2.4.4.4 Expansion motives and child attachment difficulties linear regression.

A linear regression analysis was conducted on cannabis users with expansion motive for cannabis use as the predictor variable and child attachment difficulties (KCAQ) as the
dependent variable. The results indicated that expansion motives for use were not associated with child attachment difficulties, $\beta = .06$, $SE = .01$, $t(1,81) = .62$, $p = .58$.

### 2.4.4.5 Expansion motives and adult attachment difficulties linear regression.

A linear regression analysis was conducted on cannabis users with expansion motives for cannabis use as the predictor variable and adult attachment difficulties (ECR-RS) as the dependent variable. The results indicated that expansion motives for use were not associated with adult attachment difficulties, $\beta = .11$, $SE = .15$, $t(1,83) = .93$, $p = .35$.

### 2.4.4.6 Expansion motives and child maltreatment linear regression.

A linear regression analysis was conducted on cannabis users with expansion motives for cannabis use as the predictor variable and child maltreatment (CTSPC) as the dependent variable. The results indicated that expansion motives for use were not associated with child maltreatment, $\beta = .16$, $SE = .01$, $t(1,80) = 1.26$, $p = .21$.

### 2.4.4.7 Problematic cannabis use and parental protective factors.

A linear regression analysis was conducted on cannabis users with problematic cannabis use (CUDIT) as the predictor variable and parental protective factors (PAPF) as the dependent variable. The model was statistically significant, $\beta = -.35$, $SE = .02$, $t(1,79) = -3.33$, $p < .01$, indicating that problematic cannabis use was associated with parental protective factors with a large effect size ($d = .74$). Since the model was significant, problematic alcohol use was added as a covariate in the second block. In the second model controlling for problematic alcohol use, problematic cannabis use was still a significant predictor of parental protective factors, $\beta = -.25$, $SE = .01$, $t(1,79) = -2.42$, $p < .05$ with a medium effect size ($d = .52$).
2.4.4.8 Problematic cannabis use and parental reflective functioning.

A linear regression analysis was conducted on cannabis users with problematic cannabis use (CUDIT) as the predictor variable and parental reflective functioning difficulties (PRFQ) as the dependent variable. The model was not statistically significant, $\beta = .11$, SE = .02, $t(1,81) = .101$, $p = .31$, indicating that problematic cannabis use was not significantly associated with parental reflective functioning difficulties.

2.4.4.9 Problematic cannabis use and child attachment difficulties.

A linear regression analysis was conducted on cannabis users with problematic cannabis use (CUDIT) as the predictor variable and child attachment difficulties (KCAQ) as the dependent variable. The model was not statistically significant, $\beta = .08$, SE = .36, $t(1,79) = .71$, $p = .48$, indicating that problematic cannabis use was not significantly associated with child attachment difficulties.

2.4.4.10 Problematic cannabis use and adult attachment difficulties.

A linear regression analysis was conducted on cannabis users with problematic cannabis use (CUDIT) as the predictor variable and adult attachment difficulties (ECR-RS) as the dependent variable. The model was statistically significant, $\beta = .29$, SE = .02, $t(1,81) = 2.74$, $p < .01$, indicating that problematic cannabis use was associated with adult attachment difficulties with a medium effect size ($d = .60$). Since the model was significant, problematic alcohol use was added as a covariate in the second block. In the second model controlling for problematic alcohol use, problematic cannabis use was still significantly associated with adult attachment difficulties $\beta = .25$, SE = .02, $t(1,80) = 2.24$, $p < .05$, with a medium effect size ($d = .52$).
2.4.4.1 Problematic cannabis use and child maltreatment linear regression.

A linear regression analysis was conducted on cannabis users using problematic cannabis use (CUDIT) as the predictor variable and child maltreatment (CTSPC) as the dependent variable. The model was statistically significant, $\beta = .26$, $SE = .33$, $t(1,78) = 2.41$, $p < .05$ indicating that CTSPC was associated with problematic cannabis use with a medium effect size ($d = .54$). Since the model was significant, problematic alcohol use was added as a covariate in the second block. In the second model controlling for problematic alcohol use, problematic cannabis use was no longer a significant predictor of child maltreatment, $\beta = .21$, $SE = .34$, $t(1,77) = 1.85$, $p = .07$.

2.4.5 Parent mental health, cannabis use, and parenting and attachment outcomes.

2.4.5.1 Parent mental health and parenting and attachment outcomes Pearson bivariate correlations.

Pearson bivariate correlations were run to examine the associations between parent mental health (DASS) and measures of parenting and attachment (parental reflective functioning (PRFQ), parental protective factors (PAPF), adult attachment difficulties (ECR-RS), child attachment difficulties (KCAQ), and child maltreatment (CTSPC). In the total sample, poorer parent mental health was significantly associated with poorer outcomes on all measures with a small to moderate effect size (minimum = .13, maximum .53). When cannabis users were isolated, parental reflective functioning (PRFQ) and child maltreatment (CTSPC) were not significantly correlated. The results are displayed in Table 8.
Table 8. Pearson Bivariate Correlations Between Parent Mental Health and Parenting and Attachment Outcomes.

<table>
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<tr>
<th></th>
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<tr>
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<td>-.53**</td>
<td>-.49**</td>
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<td>.53**</td>
<td>.53**</td>
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<td>.33**</td>
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<td>.14</td>
<td>.13**</td>
</tr>
<tr>
<td>CTSPC</td>
<td>.24*</td>
<td>.40</td>
<td>.38**</td>
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Note: * p < 0.05; ** p < 0.01. PAPF = Positive parenting factors, ECR-RS = adult attachment difficulties, KCAQ = child attachment difficulties, PRFQ = parental reflective functioning difficulties, CTSPC = child maltreatment, DASS = parent mental health.

2.4.5.2 Parent mental health, cannabis use, and parenting and attachment outcomes linear regressions.

A series of linear regression analyses were conducted with measures of parenting and attachment (parental reflective functioning (PRFQ), parental protective factors (PAPF), adult attachment difficulties (ECR-RS), child attachment difficulties (KCAQ), and child maltreatment (CTSPC) were each entered as the dependent variable in the respective models, and regular cannabis use, parent mental health (DASS), and an interaction term between regular cannabis use and parent mental health were entered as predictors entered in three separate blocks. The results indicated that the relationship between parent mental health and parental reflective functioning was not contingent on cannabis use. Results are displayed in Table 9.
Table 9. Linear Regressions for Parent Mental Health, Regular Cannabis Use, and Measures of Parenting and Attachment.

<table>
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3 Conclusion

3.1 Discussion

The prevalence of cannabis use in adults of parenting age is high in Canada, and in light of the recent legalization of cannabis there is increasing discussion around the impact of cannabis use on the ability to parent. This study aimed to contribute to the discussion by examining parenting behaviours and attachment in parents of young children in Canada.

The first set of hypotheses predicted that cannabis users would have poorer parenting and attachment outcomes, but that the effect would be ameliorated by controlling for alcohol use. The results indicated that regular cannabis users did not differ significantly from non-users on measures of parental protective factors or parental reflective functioning. The lack of significant associations may indicate a relatively benign effect of typical patterns of cannabis use on parenting behaviours in comparison to other substance use. In the Canadian context, the legal status of cannabis is a factor that may reduce the impact on parental protective factors such as the ability to access services, affiliative community support, and environmental safety as the potential risks of accessing the illegal market can be avoided (Kiplinger & Browne, 2014). Legalization may alleviate the negative effects of cannabis use associated with stigma and prohibition which account for a significant proportion of the potential negative impact of cannabis use (Beckett & Herbert, 2010). The lack of relationship with parental reflective function as seen in patterns of problematic substance use (Håkansson et al., 2018) likely reflects not only the differences between specific effects of drugs ((Mayes & Truman, 2005) but also fundamental differences between problematic patterns of use and typical use. These results may also reflect the relatively less impairing effect of cannabis in comparison to other substances, including alcohol (Bramness, Khiabani, & Mørland, 2010; Mayes & Truman, 2005).
These factors likely extend to the findings related to both adult and child attachment. In the extant literature on cannabis use and attachment, higher rates of attachment-related avoidance have been observed in problematic cannabis users (Pastore, 2014; Schindler et al., 2009), but no research has examined the direct effect on child attachment or in populations of typical use. In the current study, no effect was found on child attachment difficulties. Adult attachment difficulties were associated with cannabis use with a small effect size, however the relationship was no longer significant after controlling for alcohol use. It was noted in Schindler et al. (2009) that alcohol use was prevalent among the sample, however it was not controlled for in the analyses, nor was it controlled for in Pastore (2013). The mediation of this effect by alcohol in this study may suggest that the observed adult attachment difficulties in problematic cannabis users might be accounted for by the impact of problematic alcohol use on adult attachment difficulties (Jaeger et al., 2000; Kelley et al., 2010, 2004), or represent a broader vulnerability to general substance use.

While child maltreatment was approaching a significant association with cannabis use, the effect size was negligible and after controlling for problematic alcohol use the effect was no longer approaching significance. This aligns with previous findings in which the association between cannabis use and domestic violence was attenuated after controlling for alcohol use and other spurious variables (Crosby, 2015; Macdonald et al., 2008). In contrast, previous research on the association between alcohol and domestic violence has remained significant after controlling for other variables, including concurrent cannabis use (Foran & O’Leary, 2008; Wei, Loeber, & White, 2004).

The second set of hypotheses examined differences between cannabis users according to motive for use and problematic patterns of use. Expansion motives for use, using cannabis for the purpose of expanding experiential awareness, was positively associated with interest
and curiosity in the mental states of children, a component of parental reflective functioning (Luyten et al., 2017), with a medium effect size. Participants who endorsed higher levels of expansion motives were more likely to be actively interested and engaged in figuring out what their child is thinking or feeling internally, a necessary component of healthy parental reflective functioning. The direction of this relationship is unclear. While there are reports that cannabis use may promote present moment awareness directly (Dussault, 2017; Smith et al., 2015), it also may be that individuals who are already more active and engaged in the present moment are more likely to use cannabis for the purpose of expansion. There was no association between expansion motives and parental reflective functioning difficulties, nor any other measures of parenting and attachment, which may suggest that the association between the interest and curiosity in child’s mental states and expansion motives may be related more to mindfulness and present moment awareness than to parental reflective functioning or parenting behaviours.

This study examined the association between problematic patterns of cannabis use and parenting and attachment variables within users. Problematic cannabis use was negatively associated with parental protective factors to large effect before controlling for problematic alcohol use, and to medium effect after. Fundamentally, analyzing problematic patterns of use is measuring the extent to which cannabis use has a negative impact on an individual’s life functionally and interpersonally. Problematic patterns of use may interfere with a person’s capacity to maintain supportive social connections, engage with community resources, and fully engage with their child. A trend observed in the literature is the association between problematic cannabis use and withdrawn or avoidant behaviours (Mayes & Truman, 2005; Pastore, 2014; Schindler et al., 2009). This general tendency may underlie the lack of social, community, and familial engagement that characterizes a lack of parental protective factors.
In contrast, there was no association with problematic patterns of cannabis use and parental reflective functioning or child attachment difficulties. This pattern of results suggests that problematic cannabis use may have a greater association with the previously listed broader contextual parenting factors rather than the direct relationship with the child.

Adult attachment difficulties were positively associated with problematic cannabis use to medium effect. While the association between regular cannabis use and adult attachment difficulties was offset by problematic alcohol use, in patterns of problematic cannabis use within users this relationship remained after accounting for the role of alcohol with a medium effect size. This aligns with the previous studies on attachment and cannabis use which has examined samples of participants who meet the criteria for a cannabis use disorder (Pastore, 2014; Schindler et al., 2009). In both studies, individuals with problematic patterns of cannabis use were more likely to have attachment difficulties compared to healthy controls. The results of this study add to the discussion by suggesting that moderate cannabis use in a typical use pattern (i.e. the vast majority of cannabis use) may not share the negative effects of problematic patterns of cannabis use.

Within cannabis users, problematic cannabis use was associated with higher rates of child maltreatment to medium effect, however after controlling for problematic alcohol use the association was no longer significant. This extends the current body of research delineating the relationships between cannabis use, alcohol use, and domestic violence more broadly (Crosby, 2015; Kelley et al., 2010, 2004; Moore et al., 2008) to problematic use and child-specific maltreatment. As expected, the relationship seems to be accounted for by problematic alcohol use rather than problematic cannabis use. In general, the psychopharmacological effects of cannabis trend towards the relaxing and disconnecting end of the spectrum, compared to other drugs which are associated with aggression and confrontation (Mayes & Truman, 2005). As
such, it is expected that cannabis would not have an association with domestic violence, however child maltreatment also includes neglect, which is a postulated concern with cannabis users (Public Health Agency of Canada, 2018). The results of this study fail to provide evidence that child maltreatment is a concern when parents are using cannabis in either a typical or problematic pattern of use.

The third set of hypotheses examined the relationship between cannabis use, parent mental health, and parenting and attachment outcomes. As expected, poorer mental health was associated with poorer parenting and attachment outcomes across all measures in the total sample, although the smaller group size of cannabis users compared to non-users lacked the power to significantly detect the effect. This relationship has has been continuously demonstrated in the literature (Booth et al., 2018; Evans & Keenan, 2007; Evans et al., 2007; Martins & Gaffan, 2000). However, this effect was not contingent on cannabis use, suggesting that regular cannabis use did not alleviate nor exacerbate the effect of poor mental health on parenting and attachment outcomes. Cannabis is commonly used to treat mental health conditions in Canada yet it’s use for this purpose is widely dichotic, split between dire warnings that cannabis use will worsen mental health conditions contrasting with vocal advocates for it’s use to treat these same conditions (Walsh, Gonzalez, Crosby, Thiessen, et al., 2017). In this study, the results suggest that regular cannabis use may not be a significantly contributing factor in the relationship between poor mental health and adverse parenting outcomes, a possibility that is rampant in public health literature (Public Health Agency of Canada, 2018). If mental health and poor parenting outcomes are not contingent on cannabis use as the results of this study suggest, these statements serve to further perpetuate stigma around cannabis use and may amplify harms rather than reducing them (Beckett & Herbert, 2010).
In this study, the variable with the highest association with poor mental health across both cannabis users and non-users was adult attachment difficulties. This association may shed light on the consistent relationship between cannabis use and adult attachment difficulties. In light of the high prevalence of cannabis use to treat mental health conditions (Walsh, Gonzalez, Crosby, Thiessen, et al., 2017) and the association between adult attachment difficulties and poor mental health (Mullen, 2017) it is possible that the associations between cannabis use and adult attachment difficulties are at least partially representing the use of cannabis to self-medicate mental health conditions.

The results of this study do not provide evidence that moderate cannabis use with a recreational or therapeutic orientation has a negative impact on parenting or attachment. Within cannabis users, the motives for use may impact these outcomes such that expansion motives may be associated with higher rates of behaviours related to positive parental reflective functioning and building a healthy attachment bond.

3.2 Strengths and Limitations

Assessing regular cannabis use rather than acute intoxication allows for the broad assessment of the cumulative impact of events of acute intoxication as well as any residual effects over time. In addition, examining typical patterns of use allow for the opportunity to explore cannabis use as it most commonly occurs, providing more ecological validity and relevancy for the majority of parents using cannabis in Canada.

The data for this study was collected cross-sectionally. As such, we were able to capture associations at a specific point in time, but were unable to determine the directionality of the associations or examine them over time. The data for this study was based on self-report. Due to the sensitive subject matter there is a risk that negative parenting behaviours or substance use are under-reported, however the anonymity of the online survey may have ameliorated the
tendency towards a social desirability bias. The age-range of the participants’ children in this study was limited to those under 6 years of age. While this study provides a focused look at early childhood, the developmental period during which children are most sensitive to factors impacting parent-child attachment, conclusions from this study are limited to children in this age range and may not be generalizable to children in other developmental stages. We are also not able to assess whether the impact of parental cannabis use at this early developmental stage is maintained across the developmental lifespan, especially in the case of future cessation or initiation of parental cannabis use. The lack of representation from fathers limits the conclusions that can be drawn about males. Even with attempts to specifically target males in the distribution of the survey, there was very low engagement, preventing the opportunity to meaningfully compare genders. Other variables that may be of interest such as method of use (e.g. smoking, vaping, edibles) and whether or not cannabis is consumed in front of the children or during active parenting time were not assessed.

This study focused on the Canadian context and recruited only individuals who were currently residing in Canada. The current social, political, and legal landscape in Canada pertaining to cannabis use is a unique environment, and as such the results may not be generalizable to other cultural contexts. However, limiting the sample to Canadians living in Canada provides unique information in a post-prohibition context, and may inform emerging legal landscapes in other countries and cultures.

3.3 Implications

Much of the public health communication conflates moderate recreational use with problematic use, perhaps as a relic of prohibition which framed any cannabis use as problematic. The results of this study generally indicate that moderate use with a recreational or therapeutic orientation does not appear to share the potential negative impacts of
problematic cannabis use on parenting and attachment outcomes. As the vast majority of cannabis use (over 90% by most estimates) does not satisfy the criteria for problematic use, the public health literature on cannabis use and parenting should account for these differences. Framing all cannabis use as having a negative impact on parenting stands to stigmatize adult recreational or therapeutic cannabis users, potentially resulting in poorer outcomes in the healthcare or legal systems. Accurate and evidence-based public health information pertaining to the impacts of cannabis use on parenting should be available to help parents and decision-makers foster healthy developmental environments for Canadian children. Based on this study, the current guidelines should be adjusted to differentiate between the risks of problematic use in contrast to moderate, non-problematic use. This could include psychoeducational information on motives for cannabis use and signs of problematic use to assist parents in contextualizing and reflecting on their own patterns of cannabis consumption, and identifying whether or not their use may be problematic. A major implication of this study is the importance of controlling for alcohol use when assessing the impact of cannabis use. Cannabis use and alcohol use are highly comorbid, and isolating the effects of cannabis are important to provide clear and accurate information to parents to support informed choices pertaining to substance use.

3.4 Future Directions.

Based on the outcomes of this study, further investigation to delineate the relationships between cannabis use and parenting and attachment outcomes should be pursued. In order to measure parent and child attachment more precisely, future research should utilize an in-person design. This would provide the opportunity to directly evaluate a child’s attachment to their parent using trained observers in standard assessments such as the strange situation paradigm (Isaacs, George, & Marvin, 2009). This would also provide the opportunity to evaluate adult
attachment directly through administering attachment style interviews (Jones et al., 2015). Additionally, an in-person design could allow for the observation of the impact of acute cannabis intoxication on parent-child interactions.

Many households have more than one parent figure. Future studies should look at patterns of cannabis use across the household and examine the collective effect of cannabis use across all parenting figures present. Recruiting multiple parents may also provide opportunities to evaluate any gender differences that may exist in how cannabis use impacts parenting and attachment outcomes.

A longitudinal design could provide information on patterns of cannabis use in parents and map the impact of parental cannabis use at different developmental stages. Additionally, older cohorts of children could be studied to examine the impact of parental cannabis use in older children and adolescents. On a macro level, a design following the same participants across multiple time points could clarify the directionality of the relationships observed in this study. On a micro level, ecological momentary assessments could be utilized to track parenting behaviours in real time throughout the day. This could allow for a clearer picture of the acute impact of cannabis use on parenting behaviours while also measuring potential contributing factors or confounds such as other substance use and parent mental and emotional state.

Future research could utilize the results of this study to inform the development of interventions for parents who may be at risk of problematic use. These interventions could focus on determining and adjusting motives for use, and supporting mindful cannabis use. In cases where problematic use has been identified, adaptive coping strategies that are associated with activity in the endocannabinoid system such as mindfulness and yoga could be offered (McPartland, Guy, & Marzo, 2014), and may have the additional effect of supporting mindful cannabis consumption.
Canada is a unique cultural context as one of the first countries to legalize cannabis for recreational purposes. As we move forward from legalization we stand to see a decrease in stigma surrounding cannabis use. Future studies in Canada may be able to provide information about cannabis use and parenting in a post-stigma or reduced-stigma environment. While these results may inform the emerging legal market, different cultural contexts where cannabis use is prohibited may have a tangibly different impact on parenting. Examining the different cultural contexts outside of the legal market may stand to provide different information for parents in these different environments.
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reflective functioning and executive functioning in mothers with substance use disorder.


https://doi.org/10.1080/14616734.2017.1398764


Hyman, S. M., & Sinha, R. (2009). Stress-related factors in cannabis use and misuse:


https://doi.org/10.1177/1088868314541858


https://doi.org/10.1177/0013164405285545


Digital Press.


Appendices

Appendix 1: Alcohol Use Disorders Identification Test (AUDIT)

Please select the answer that is correct for you.

1. How often do you have a drink containing alcohol?

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<tr>
<th>Never</th>
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<th>2-3 times a week</th>
<th>4 or more times a week</th>
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<td>Monthly or less</td>
<td>2-4 times a month</td>
<td>2-3 times a week</td>
<td>4 or more times a week</td>
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2. How many standard drinks containing alcohol do you have on a typical day when drinking?

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<th>7 to 9</th>
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<tbody>
<tr>
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<td>3 or 4</td>
<td>5 or 6</td>
<td>7 to 9</td>
<td>10 or more</td>
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3. How often do you have six or more drinks on one occasion?

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<th>Monthly</th>
<th>Weekly</th>
<th>Daily or almost daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Less than monthly</td>
<td>Monthly</td>
<td>Weekly</td>
<td>Daily or almost daily</td>
</tr>
</tbody>
</table>

4. During the past year, how often have you found that you were not able to stop drinking once you had started?

<table>
<thead>
<tr>
<th>Never</th>
<th>Less than monthly</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Daily or almost daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Less than monthly</td>
<td>Monthly</td>
<td>Weekly</td>
<td>Daily or almost daily</td>
</tr>
</tbody>
</table>

5. During the past year, how often have you failed to do what was normally expected of you because of drinking?

<table>
<thead>
<tr>
<th>Never</th>
<th>Less than monthly</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Daily or almost daily</th>
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</thead>
<tbody>
<tr>
<td>Never</td>
<td>Less than monthly</td>
<td>Monthly</td>
<td>Weekly</td>
<td>Daily or almost daily</td>
</tr>
</tbody>
</table>

6. During the past year, how often have you needed a drink in the morning to get yourself going after a heavy drinking session?

<table>
<thead>
<tr>
<th>Never</th>
<th>Less than monthly</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Daily or almost daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>Less than monthly</td>
<td>Monthly</td>
<td>Weekly</td>
<td>Daily or almost daily</td>
</tr>
</tbody>
</table>

7. During the past year, how often have you had a feeling of guilt or remorse after
drinking?

<table>
<thead>
<tr>
<th>Never</th>
<th>Less than monthly</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Daily or almost daily</th>
</tr>
</thead>
</table>

8. During the past year, have you been unable to remember what happened the night before because you had been drinking?

<table>
<thead>
<tr>
<th>Never</th>
<th>Less than monthly</th>
<th>Monthly</th>
<th>Weekly</th>
<th>Daily or almost daily</th>
</tr>
</thead>
</table>

9. Have you or someone else been injured as a result of your drinking?

| No | Yes, but not in the past year |

10. Has a relative or friend, doctor or other health worker been concerned about your drinking or suggested you cut down?

| No | Yes, but not in the past year |
Appendix 2: Marijuana Motives Measure (MMM)

These questions apply to motivations for marijuana use. Please answer each statement in terms of how often you have used marijuana in your lifetime for that reason.

1. To forget my worries
2. Because my friends pressure me to use marijuana
3. Because it helps me to enjoy a party
4. Because it helps me when I am depressed or nervous
5. To be sociable
6. To cheer me up when I am in a bad mood
7. Because I like the feeling
8. So that others won’t kid me about using marijuana
9. Because it’s exciting
10. To get high
11. Because it makes social gatherings more fun
12. To fit in with the group I like
13. Because it gives me a pleasant feeling
14. Because it improves parties and celebrations
15. Because I feel more self-confident and sure of myself
16. To celebrate a special occasion with friends
17. To forget about my problems
18. Because it’s fun
19. To be liked
20. So I won’t feel left out
21. To know myself better

22. Because it helps me be more creative and original

23. To understand things differently

24. To expand my awareness

25. To be more open to experiences
Appendix 3: Kinship Center Attachment Questionnaire (KCAQ)

Answer the following focusing on the youngest child you have under the age of 5 who is in your care.

Please read each item below and circle the number that you think **BEST** describes how often your child behaves as described in the item. Please rate your child based on their current behaviour.

7 point Likert scale:
0 = never/rarely
1 = once in a while
2 = occasionally
3 = sometimes
4 = often
5 = usually
6 = almost always

1. My child is **very** clingy.
2. If things don’t go his/her way, my child gets very upset.
3. When my child gets hurt, he/she refuses to let anyone comfort him/her.
4. My child understands what is said to him/her.
5. My child learns from his/her mistakes and stops a behavior when that behavior results in a negative consequence.
6. When my child is in pain, he/she doesn’t show it.
7. My child is kind and gentle with animals.
8. My child does not like being separated from me except on his/her terms.

9. My child is very whiny.

10. My child talks as well as other children of the same age.

11. When my child is upset, he/she does not allow familiar adults to comfort him/her, but will go to strangers for comfort.

12. My child teases, hurts, or is cruel to other children.

13. My child hoards food or has other unusual eating habits (e.g., eats paper, raw flour, packaged mixes, feces, etc.).

14. My child destroys or breaks his/her own things.

15. My child destroys or breaks things that belong to others.

16. My child has an easy time making and keeping friends.

17. My child steals things and doesn’t seem to feel bad about his/her behavior.

18. My child seems overly interested in fire, gore, and blood.

19. My child has told others that I abuse him/her even though I never have.

20. My child plays well with other children.
Appendix 4: Parental Reflective Functioning Questionnaire (PRFQ)

Listed below are a number of statements concerning you and your child. Read each item and decide whether you agree or disagree and to what extent.

Use the following rating scale, with 7 if you strongly agree; and 1 if you strongly disagree. The midpoint, if you are neutral or undecided, is 4.

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

1. __ The only time I’m certain my child loves me is when he or she is smiling at me.
2. __ I always know what my child wants.
3. __ I like to think about the reasons behind the way my child behaves and feels.
4. __ My child cries around strangers to embarrass me.
5. __ I can completely read my child’s mind.
6. __ I wonder a lot about what my child is thinking and feeling.
7. __ I find it hard to actively participate in make believe play with my child.
8. __ I can always predict what my child will do.
9. __ I am often curious to find out how my child feels.
10. __ My child sometimes gets sick to keep me from doing what I want to do.
11. __ I can sometimes misunderstand the reactions of my child.
12. __ I try to see situations through the eyes of my child.
13. __ When my child is fussy he or she does that just to annoy me.
14. __ I always know why I do what I do to my child.
15. __ I try to understand the reasons why my child misbehaves.
16. __ Often, my child’s behavior is too confusing to bother figuring out.
17. __ I always know why my child acts the way he or she does.
18. __ I believe there is no point in trying to guess what my child feels.
Appendix 5: Experiences in Close Relationships – Relationship Structures

Questionnaire (ECR-RS)

The statements below concern how you feel in emotionally intimate relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by selecting how much you agree or disagree with the statement.

Each item is rated on a 7-point scale where 1 = strongly disagree and 7 = strongly agree.

1. I'm afraid that I will lose my partner's love.
2. I often worry that my partner will not want to stay with me.
3. I often worry that my partner doesn't really love me.
4. I worry that romantic partners won’t care about me as much as I care about them.
5. I often wish that my partner's feelings for me were as strong as my feelings for him or her.
6. I worry a lot about my relationships.
7. When my partner is out of sight, I worry that he or she might become interested in someone else.
8. When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.
9. I rarely worry about my partner leaving me.
10. My romantic partner makes me doubt myself.
11. I do not often worry about being abandoned.
12. I find that my partner(s) don't want to get as close as I would like.
13. Sometimes romantic partners change their feelings about me for no apparent reason.
14. My desire to be very close sometimes scares people away.
15. I'm afraid that once a romantic partner gets to know me, he or she won't like who I
really am.

16. It makes me mad that I don't get the affection and support I need from my partner.

17. I worry that I won't measure up to other people.

18. My partner only seems to notice me when I'm angry.

19. I prefer not to show a partner how I feel deep down.

20. I feel comfortable sharing my private thoughts and feelings with my partner.

21. I find it difficult to allow myself to depend on romantic partners.

22. I am very comfortable being close to romantic partners.

23. I don't feel comfortable opening up to romantic partners.

24. I prefer not to be too close to romantic partners.

25. I get uncomfortable when a romantic partner wants to be very close.

26. I find it relatively easy to get close to my partner.

27. It's not difficult for me to get close to my partner.

28. I usually discuss my problems and concerns with my partner.

29. It helps to turn to my romantic partner in times of need.

30. I tell my partner just about everything.

31. I talk things over with my partner.

32. I am nervous when partners get too close to me.

33. I feel comfortable depending on romantic partners.

34. I find it easy to depend on romantic partners.

35. It's easy for me to be affectionate with my partner.

36. My partner really understands me and my needs.
Appendix 6: Parents Assessment of Protective Factors (PAPF)

The Parents Assessment of Protective Factors (PAPF) is a list of 36 statements that describe you as a parent or caregiver. Some of the statements will describe you very well. Other statements will not describe you at all.

This survey should take only a few minutes to complete. You are encouraged to respond to every statement.

Focus on the youngest child in your care who is between birth and 8-years-old. In responding to the statements, please keep 3 points in mind:

1. You should respond truthfully to each statement. There are no right or wrong answers – only your opinions.
2. Some statements may seem like others, but no two statements are exactly the same.
3. You are encouraged to respond to every statement.

Read each statement and select what best describes you during the last couple of months.

1 = This is NOT AT ALL LIKE me or what I believe
2 = This is NOT MUCH LIKE me or what I believe
3 = This is a LITTLE LIKE me or what I believe
4 = This is LIKE me or what I believe
5 – This is VERY MUCH LIKE me or what I believe

<table>
<thead>
<tr>
<th>Statement</th>
<th>Response Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I feel positive about being a parent/caregiver.</td>
<td></td>
</tr>
<tr>
<td>2. I take good care of my child even when I am sad.</td>
<td></td>
</tr>
<tr>
<td>3. I find ways to handle problems related to my child.</td>
<td></td>
</tr>
<tr>
<td>4. I take good care of my child even when I have personal problems.</td>
<td></td>
</tr>
<tr>
<td>5. I manage the daily responsibilities of being a parent/caregiver.</td>
<td></td>
</tr>
<tr>
<td>6. I have the strength within myself to solve problems that happen in my life.</td>
<td></td>
</tr>
<tr>
<td>7. I am confident I can achieve my goals.</td>
<td></td>
</tr>
<tr>
<td>8. I take care of my daily responsibilities even if problems make me sad.</td>
<td></td>
</tr>
<tr>
<td>9. I believe that my life will get better even when bad things happen.</td>
<td></td>
</tr>
<tr>
<td>10. I have someone who will help me get through tough times.</td>
<td></td>
</tr>
<tr>
<td>11. I have someone who helps me calm down when I get upset.</td>
<td></td>
</tr>
<tr>
<td>12. I have someone who can help me calm down if I get frustrated with my child.</td>
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<td></td>
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<tr>
<td>13.</td>
<td>I have someone who will encourage me when I need it.</td>
</tr>
<tr>
<td>14.</td>
<td>I have someone I can ask for help when I need it.</td>
</tr>
<tr>
<td>15.</td>
<td>I have someone who will tell me in a caring way if I need to be a better parent/caregiver.</td>
</tr>
<tr>
<td>16.</td>
<td>I have someone who helps me feel good about myself.</td>
</tr>
<tr>
<td>17.</td>
<td>I am willing to ask for help from my family.</td>
</tr>
<tr>
<td>18.</td>
<td>I have someone to talk to about important things.</td>
</tr>
<tr>
<td>19.</td>
<td>I don’t give up when I run into problems trying to get the services I need.</td>
</tr>
<tr>
<td>20.</td>
<td>I make an effort to learn about the resources in my community that might be helpful for me.</td>
</tr>
<tr>
<td>21.</td>
<td>When I cannot get help right away, I don’t give up until I get the help I need.</td>
</tr>
<tr>
<td>22.</td>
<td>I know where to go if my child needs help.</td>
</tr>
<tr>
<td>23.</td>
<td>I am willing to ask for help from community programs or agencies.</td>
</tr>
<tr>
<td>24.</td>
<td>I know where I can get helpful information about parenting and taking care of children.</td>
</tr>
<tr>
<td>25.</td>
<td>Asking for help for my child is easy for me to do.</td>
</tr>
<tr>
<td>26.</td>
<td>I know where to get help if I have trouble taking care of emergencies.</td>
</tr>
<tr>
<td>27.</td>
<td>I try to get help for myself when I need it.</td>
</tr>
<tr>
<td>28.</td>
<td>I maintain self-control when my child misbehaves.</td>
</tr>
<tr>
<td>29.</td>
<td>I help my child learn to manage frustration.</td>
</tr>
<tr>
<td>30.</td>
<td>I stay patient when my child cries.</td>
</tr>
<tr>
<td>31.</td>
<td>I play with my child when we are together.</td>
</tr>
<tr>
<td>32.</td>
<td>I can control myself when I get angry with my child.</td>
</tr>
<tr>
<td>33.</td>
<td>I make sure my child gets the attention he or she needs even when my life is stressful.</td>
</tr>
<tr>
<td>34.</td>
<td>I stay calm when my child misbehaves.</td>
</tr>
<tr>
<td>35.</td>
<td>I help my child calm down when he or she is upset.</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>36.</td>
<td>I am happy when I am with my child.</td>
</tr>
</tbody>
</table>
Appendix 7: Conflict Tactics Scale – Parent-Child (CTSPC)

Children often do things that are wrong, disobey, or make their parents angry. We would like to know what you have done when your child did something wrong or made you upset or angry.

Response options:

Once in the past year
Twice in the past year
3-5 times in the past year
6-10 times in the past year
11-20 times in the past year
More than 20 times in the past year
Not in the past year, but it has happened before
This has never happened

1. Explained why something was wrong
2. Put him/her in time out or sent to their room
3. Shook him/her
4. Hit him/her on the bottom with something like a belt, hairbrush, stick, or some other hard object
5. Gave him/her something else to do instead of what he/she was doing wrong
6. Shouted, yelled, or screamed at him/her
7. Hit him/her with a fist or kicked him/her hard
8. Spanked him/her on the bottom with your bare hand
9. Grabbed him/her around the neck and choked him/her
10. swore or cursed at him/her
11. Beat him/her up, that is you hit him/her over and over as hard as you could
12. Said you would send him/her away or kick them out of the house
13. Burned or scalded him/her on purpose
14. Threatened to spank or hit him/her but did not actually do it
15. Hit him/her on some other part of the body with something like a belt, hairbrush, a stick or some other hard object
16. Slapped him/her on the hand, arm, or leg
17. Took away privileges or grounded him/her
18. Pinched him/her
19. Threatened him/her with a knife or a gun
20. Threw or knocked him/her down
21. Called him/her dumb or lazy or some other name like that
22. Slapped him/her on the face or head or ears
Appendix 8: Depression Anxiety Stress Scales (DASS)

Please read each statement and indicate how much the statement applied to you over the past week. There are no right or wrong answers. Do not spend too much time on any statement.

1: Did not apply to me at all
2: Applied to me to some degree, or some of the time
3: Applied to me to a considerable degree, or a good part of the time
4: Applied to me very much, or most of the time

1. I found it hard to wind down
2. I was aware of dryness of my mouth
3. I couldn’t seem to experience any positive feeling at all.
4. I experienced breathing difficulty (eg, excessive rapid breathing, breathlessness in the absence of physical exertion)
5. I found it difficult to work up the initiative to do things
6. I tended to over-react to situations
7. I experienced trembling (eg, in the hands)
8. I felt that I was using a lot of nervous energy
9. I was worried about situations in which I might panic and make a fool of myself
10. I felt that I had nothing to look forward to
11. I found myself getting agitated
12. I found it difficult to relax
13. I felt down-hearted and blue
14. I was intolerant of anything that kept me from getting on with what I was doing
15. I felt I was close to panic
16. I was unable to become enthusiastic about anything
17. I felt I wasn’t worth much as a person
18. I felt that I was rather touchy
19. I was aware of the action of my heart in the absence of physical exertion (eg. sense of heart rate increase, heart missing a beat)

20. I felt scared without any good reason

21. I felt that life was meaningless