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Integrative Therapy for Youth with Cannabis Use Disorder Targeting Attachment Insecurity and Emotion Dysregulation: A Process-Based Case Study

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Abstract

Regular cannabis use during adolescence can have cognitive, psychological, and social consequences, leading to significant distress. Although psychological interventions are the primary treatment for cannabis use disorder, their efficacy in adolescents remains limited. This case study presents a comprehensive overview of a process-based conceptualization and treatment approach, Integrated Therapy for Adolescent Cannabis Misuse (ITACM), tailored for a young female patient with concurrent severe cannabis use and emotional symptoms. ITACM is an individual, brief intervention that includes family sessions, targeting emotion dysregulation and interpersonal difficulties, both of which have been empirically linked to cannabis use disorder in young people. The treatment integrates motivational interviewing, cognitive and behavioral therapy (including psychoeducation, promoting alternative behaviors, and relapse prevention) and an attachment-based therapy (addressing emotion regulation, relational processes, and promoting corrective attachment experiences). A thorough assessment of psychiatric symptoms and psychological processes was conducted at baseline, mid-intervention, post-intervention, and at a 2-month follow-up. At the end of the treatment, the patient reported a significant decrease in her cannabis use, anxiety, and depression, as well as improvements in emotion regulation strategies. The case study underscores significant outcomes following a 10-week course of psychotherapy addressing cannabis use, emotional dysregulation, and interpersonal difficulties in a young patient. The treatment protocol appears promising and warrants further investigation through a randomized controlled trial.

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1 Theoretical and Research Basis for Treatment

Cannabis Use in Youth

Cannabis is one of the most consumed psychoactive substances globally, following tobacco and alcohol. Consumption is notably prevalent among adolescents and young adults: in the United States in 2022, 16.5 % of young adults aged 18–25 and 5.1 % of adolescents aged 12–17 reported a cannabis use disorder (CUD) (Substance Abuse and Mental Health Services Administration, 2023). Furthermore, in Europe in 2021, cannabis was the primary reason for nearly half of those seeking drug treatment for the first time (European Monitoring Centre for Drugs and Drug Addiction, 2023). More specifically, in France, one in five 17-year-olds had a risk of developing CUD in 2022 (Brissot et al., 2023).

Adolescence is a pivotal period for brain development. Neuromaturation, which involves the creation and refinement of synaptic connections as well as myelination, promotes communication between different brain regions, fostering the development of cognitive abilities such as decision-making, planning, impulse control, and emotion regulation. As these reorganizational processes continue through emerging adulthood, the adolescent brain is particularly susceptible to external factors, notably psychoactive substances, that have the potential to interfere with its progression (Gobbi et al., 2019).

For these reasons, frequent cannabis use (CU) during this critical developmental phase has consistently been associated with changes in brain structure and function, contributing to lasting cognitive and psychological risks (Gobbi et al., 2019). Furthermore, studies have demonstrated robust correlations between the frequency and potency of CU during adolescence and a heightened risk of developing various psychiatric disorders, such as psychosis, depression, anxiety, and substance use disorders (Gobbi et al., 2019; Hines et al., 2020). Consequently, CUD during adolescence and young adulthood can lead to cognitive, psychological, academic, and social ramifications, thus causing or exacerbating considerable distress.

Psychotherapeutic techniques remain the primary approach in treating CUD, as no medication has yet proven effective (Nielsen et al., 2019). Research has shown that effective interventions for youth with CUD include motivational interviewing and cognitive-behavioral therapy, as well as family therapy and contingency management (Adams et al., 2023; Bou Nassif et al., 2023). Additionally, multicomponent psychosocial treatments, which combine these approaches, have shown promise in addressing adolescent substance use disorders and comorbid mental health conditions (Fadus et al., 2019).

However, reviews have underscored persistent challenges, including high dropout rates in intensive programs, limited strategies for maintaining engagement, and a lack of interventions specifically tailored to adolescents' developmental needs. Moreover, many studies have not specifically focused on treatments for CUD, instead examining broader approaches to substance use and overlooking the distinct risk and protective factors associated with adolescent CU (Adams et al., 2023; Bou Nassif et al., 2023).

To address these limitations, cannabis-specific treatments incorporating a family component that target both internal and external factors contributing to CUD have shown promise (Tambling et al., 2022). Non-intensive interventions have also emerged as a preferred option, as they more efficiently engage adolescents and are cost-effective, requiring fewer resources and less time to implement in clinical settings (Adams et al., 2023; Bou Nassif et al., 2023; Halladay et al., 2019).

Given rapid changes in policy and attitudes, particularly in North America and Europe, along with the potential for increased access to care resulting from reduced stigma and legal consequences, the need to address CUD among youth has become critical.

Psychological Process and Addiction

A psychological process-based approach is founded on the premise that there are several common dysfunctional psychological processes (motivational, cognitive, behavioral, emotional, and social) found in different psychiatric disorders (Moskow et al., 2023; Philippot et al., 2019). This approach enables an individualized and holistic understanding of the patient's various symptoms based on a dimensional framework. Clinically, it proposes identifying the psychological processes involved in the onset and persistence of the patient's symptoms and making them the focus of subsequent treatment (Moskow et al., 2023; Philippot et al., 2019).

Various studies have indicated the involvement of numerous psychological processes in the development and maintenance of addictive behaviors (Billieux et al., 2015; Hamonniere & Billieux, 2023; Spada et al., 2015; Vujanovic et al., 2017); these include motivational (e.g., motives underpinning consumption), emotional (e.g., anxiety sensitivity or emotion dysregulation), and cognitive (e.g., cognitive bias and distortion) factors at both the intrapersonal and interpersonal levels (e.g., family conflicts, insufficient parental supervision during adolescence) (Kendler et al., 2003; Kober, 2014; Weiss et al., 2022).

Moreover, a process-based framework holds significant promise in treating addictive behaviors (Billieux et al., 2015; Hamonniere & Billieux, 2023), especially when co-occurring with psychiatric comorbidities that share transdiagnostic cognitive-affective processes. For instance, common cognitive-affective factors, including maladaptive emotional regulation strategies, rumination, experiential avoidance, distress tolerance, and heightened sensitivity to negative affect, are found in both depression and substance use disorders (Vujanovic et al., 2017). This approach is further supported by conceptualizing substance use disorders as emotional disorders, wherein individuals rely on substances to suppress or avoid emotional experiences due to heightened reactivity (McHugh & Goodman, 2019; Sauer-Zavala et al., 2019).

Furthermore, research has consistently highlighted the critical role of emotion regulation in the etiology, maintenance, and treatment of addiction (Stellern et al., 2023; Weiss et al., 2022). In CUD, the set of processes associated with emotion dysregulation appears to play a pivotal role in the extent of CU, CU withdrawal symptoms, and reduced abstinence from CU in situations of emotional distress (Buckner et al., 2017; Hamonniere et al., 2022; Paulus et al., 2018).

Additionally, a growing number of studies have established attachment insecurity as a risk factor in developing substance use disorders, specifically in adolescence (Fairbairn et al., 2018; Schindler, 2019). According to attachment theory, attachment security and emotion regulation are intrinsically linked. When a stressor activates the attachment system, individuals are prompted to seek proximity to their attachment figure (Bowlby, 1982). Parents who are sensitive and receptive to their children's emotions can effectively communicate about them, validate their feelings, and help them in labelling their emotions, all while providing support and comfort (Mikulincer & Shaver, 2020). However, when primary attachment strategies fail, negative internal working models of self and others can develop, leading children to adopt secondary strategies to fulfil their attachment needs, either through hyperactivation or deactivation of the attachment system (Bowlby, 1982; Main, 1996).

During adolescence, young people begin to assert their independence by spending less time with their parents, engaging in fewer shared activities, and demonstrating less physical affection towards them. Nevertheless, the quality of the relationship with parents remains crucial in

assisting adolescents to navigate internal and external difficulties, as parents continue to serve as primary attachment figures for adolescents in times of distress (Allen et al., 2003; Moretti & Peled, 2004). However, the intense and fluctuating emotional states of adolescents, coupled with their need for independence, can impede their ability to seek support from their parents in times of need. In addition, friendships and romantic relationships are experienced as new attachment bonds to which adolescents can turn in stressful situations, leading to the development of new strategies for emotion regulation. However, in emotional situations, adolescents with insecure attachments are more likely to adhere to distorted mental representations of self and others and to encounter metacognitive difficulties that can affect their ability to effectively navigate and manage their relationships (Allen et al., 2018).

Moreover, research indicates that adolescents and young adults tend to select peers with similar CU behaviors, resulting in a gradual alignment in usage frequencies over time (Barnett et al., 2021). Additionally, substance use behaviors, including CU, are influenced by both perceived and actual peer usage (Watts et al., 2024). However, while peer influences play a role, longitudinal studies have concluded that early CU and its progression into young adulthood are primarily predicted by childhood family factors, including parental attachment and positive parenting practices (Leadbeater et al., 2022; Scholes-Balog et al., 2020).

Some authors have proposed that psychopathological disorders – including internalizing (mood and anxiety disorders) and externalizing symptoms (substance use disorders and antisocial disorders) – are influenced by attachment insecurity (a distal risk factor) through the mediation of a "dark triad of processes" (proximal risk factors) (Ein-Dor & Doron, 2014; Ein-Dor et al., 2016). According to this model, each insecure attachment style is responsible for pathogenic psychological processes, including affective (exacerbation of negative affect or emotional avoidance), cognitive (rumination or excessive self-reliance), and interpersonal difficulties, all of which are known to contribute to problematic CU (Ein-Dor et al., 2016; Fairbairn et al., 2018; Hamonniere et al., 2022; Stellern et al., 2023).

Capitalizing on this literature regarding the role of identified psychological processes in CUD, we have developed a 10-session therapy named Integrated Therapy for Adolescent Cannabis Misuse (ITACM) within a university hospital group in France. ITACM is an individual intervention that includes family sessions and targets insecure attachment (distal processes) alongside emotion dysregulation and relational processes (proximal processes). It is designed to achieve three primary objectives: developing interactional skills, enhancing interpersonal relationships, and reducing levels of CU and emotional distress. The intervention integrates motivational interviewing and cognitive-behavioral techniques, including psychoeducation, promoting alternative behaviors, relapse prevention, and assertiveness techniques. Additionally, ITACM is grounded in attachment theory, which aims to identify emotional reactivity and relational processes, mainly focusing on their association with CU and subsequent distress (Rahioui, 2016).

As previously discussed, emotional reactivity can manifest as either hyperactivation or deactivation of the attachment system. Individuals with an anxious attachment style may display heightened emotional responses aligned with their attachment needs, while those with attachment avoidance tend to suppress or distance themselves from emotional experiences (Mikulincer & Shaver, 2019). Furthermore, relational processes include inter-personal (e.g., seeking social support, expression of emotional experiences, emotional reciprocity, and managing conflicts) and intra-personal processes (e.g., reassessing negative representations about the self and others) (Allen et al., 2018; Bowlby, 1982; Mikulincer & Shaver, 2019).

Building on this understanding, these attachment-based interventions aim to enhance interpersonal skills and promote corrective attachment experiences between parents and adolescents (see Table 1 for an overview of the sessions and their objectives).

Table 1. ITACM Session Framework Overview.

Session	Approach	Objectives	Target psychological processes
1	Familial session: Integrated attachment therapy	Building bonds: Exploring adolescent needs and family dynamics	- Interpersonal dysfunctional process
2	Individual session: Motivational interviewing	Exploring ambivalence and setting goals for cannabis use	- Motivational - Distorted cognitions about cannabis
3	Familial session: Integrated attachment therapy	Promoting corrective attachment experiences	- Interpersonal dysfunctional process - Distorted cognitions about self and others
4	Individual session: Cognitive and behavioral therapy	Psychoeducation on adolescent development and emotion characteristics	- Motivational - Distorted cognitions about cannabis - emotion regulation deficits
5	Individual session: Integrated attachment therapy	Exploring emotion reactivity in stressfully situations with an attachment Figure	- Emotion regulation deficits - Interpersonal dysfunctional process
6	Individual session: Integrated attachment therapy	Enhancing interpersonal skills with parents through role-playing	- Emotion regulation deficits - Interpersonal dysfunctional process - Distorted cognitions about self and others
7	Individual session: Integrated attachment therapy	Enhancing interpersonal skills with peers through role-playing	- Emotion regulation deficits - Interpersonal dysfunctional process - Distorted cognitions about self and others
8	Individual session: Cognitive and behavioral therapy	Developing strategies to manage potential triggers and cravings (e.g., assertiveness techniques)	- Emotion regulation deficits - Interpersonal dysfunctional process
9	Individual session: Motivational interviewing and cognitive and behavioral therapy	Relapse prevention planning	Emotion regulation deficits
10	Familial session: Integrated attachment therapy	Encouraging adolescent exploration and autonomy	- Emotion regulation deficits - Interpersonal dysfunctional process - Distorted cognitions about self and others

2 Case Introduction

This case study is a component of an ongoing randomized controlled trial, and all required ethical approvals were obtained. In accordance with ethical guidelines, written informed consent was obtained from the patient prior to participation in the study. Patient selection was based on case

conceptualization and comprehensive evaluation, as detailed below, that revealed the presence of dysfunctional processes that serve as reinforcement factors for her CU. These dysfunctional processes align precisely with the focus of ITACM.

At the time of referral, Julie (pseudonym) was an 18-year-old patient who lived with her parents in the Paris region and was an only child. She discontinued her high school education after repeating her second year in 2021 and has not been involved in either employment or studies since.

3 Presenting Complaints

Julie sought psychotherapy in July 2023 at our specialized unit for addictive behaviors in youth, situated within a hospital setting. During the assessment, she expressed motivation to address her CU, which she reported at five to ten joints daily for the previous 2 years. In this study, a "joint" refers to a hand-rolled cannabis cigarette, which typically contains around 0.3–0.75 grams of cannabis, depending on individual preparation methods.

In her two previous attempts to abstain from cannabis, one in 2022 and another in 2023, managing the withdrawal symptoms—particularly anxiety and emotional lability—had proved challenging, leading to subsequent relapses. Under her previous psychiatric care, she had been prescribed an antidepressant medication (sertraline 125 mg) for the previous six months, alongside alprazolam (0.5 mg) if needed. She typically used alprazolam one to three times per week during episodes of acute anxiety. The treatment did not significantly improve her CU or mood, consistent with the absence of established treatments for cannabis withdrawal (Nielsen et al., 2019).

Following her psychiatrist's recommendation, Julie engaged in three months of analytic therapy with a psychologist in private practice. The therapy aimed to increase self-understanding and reduce risk behaviors. Although a trusting therapeutic relationship was established and Julie actively engaged, the psychologist determined that a referral to our unit would better address her specific needs.

Julie reported difficulties in her interpersonal relationships, which contributed to her emotional distress. This distress was further exacerbated by a profound sense of loneliness within her social sphere. Since 2021, her feelings of loneliness had progressively intensified, as she had not been involved in employment or education, further limiting her connections. Despite maintaining a small circle of friends, most of whom resided outside Paris, she primarily interacted with acquaintances formed through online platforms. These superficial connections often left her feeling isolated, as she desired deeper and more meaningful relationships.

Additionally, Julie's interpersonal behaviors, such as frequent reassurance-seeking from close friends and family and displaying aggressive behaviors during conflicts, strained her relationships. This, in turn, contributed to the intense loneliness she experienced, particularly during conflicts with her mother, which resulted in emotional distress and suicidal ideation. Her emotional instability also manifested in heightened reactivity and impulsive behaviors, including CU, binge eating, and suicidal behaviors.

4 History

In her psychiatric history, she underwent a four-week psychiatric hospitalization in November 2021 for symptoms of major depressive disorder, including sadness, emotional outbursts, extended periods of daytime bed rest, and neglect of personal hygiene. However, she had prematurely interrupted this hospitalization due to the unavailability of cannabis. No specific issues were noted regarding her physical health.

In recent months, she had engaged in self-harming behaviors on three occasions by intentionally exceeding the prescribed dosage of her medication and mixing it with other substances to mitigate intense distress triggered by conflicts with friends and family.

5 Assessment

Following a comprehensive psychiatric evaluation using the Kiddie-SADS-Present and Lifetime Version, aligning with DSM-5 criteria (Thümmler & Askenazy, 2018), it was established that Julie met the diagnostic criteria for severe CUD, tobacco use disorder, and persistent depressive disorder. Moreover, clinical indicators suggestive of a borderline personality disorder were noted. These included intense fear of abandonment in relationships, unstable relationships, impulsive behaviors (e.g., substance use, binge eating, sexual behavior), self-harming behaviors (e.g., drug intoxication, skin-picking), emotional instability, chronic feelings of emptiness, and outbursts of anger. We observed that Julie experienced significant distress in managing interpersonal relationships and tended to resort to CU as her primary strategy for emotional regulation.

Self-report measures were used to evaluate the efficacy of the intervention on psychological processes and symptoms at four intervals: pre-treatment (first session), mid-treatment (fifth session), post-treatment (10th session), and a two-month follow-up.

The primary outcome measure was the Timeline Followback (TLFB) for CU (Robinson et al., 2014). The TLFB measures the number of days and quantity of CU over the previous 30 days and has good psychometric properties among youth (Robinson et al., 2014). Secondary outcome measures included parental attachment, emotion regulation, and symptoms of anxiety and depression.

Parental attachment quality was assessed using the Parent and Peer Attachment Inventory (IPPA), a 28-item questionnaire measured using a 5-point Likert scale. The IPPA provides an overall security score towards parents and consists of three subscales: mutual trust, communication quality, and feelings of anger or isolation. It has been validated in French for ages 14–19, with good internal consistency (Cronbach's alpha coefficient, 0.85–0.89) (Vignoli & Mallet, 2004).

Emotion regulation strategies were assessed using the Emotion Regulation Questionnaire (REQ), a 21-item questionnaire measured using a 5-point Likert scale. The REQ evaluates functional and dysfunctional emotion regulation, occurring internally (intra-personally) and externally (inter-personally) in youth (Phillips & Power, 2007). It has been validated in French for ages 12–20, with internal consistency ranging from 0.66 to 0.76 and good convergent validity with the IPPA (Amaro, 2013).

Depressive symptomatology was assessed using the Beck Depression Inventory (BDI- II), a 21-item questionnaire measured using a 4-point Likert scale, which assesses depressive symptoms over the previous two weeks. The BDI has been validated in French for students with an average age of 20.2 years, showing good internal consistency (Cronbach's alpha of 0.92) and test-retest reliability (0.62 over four months) (Byrne & Baron, 1994).

Anxious symptomatology was assessed using the Spielberg State-Trait Anxiety Inventory (STAI-Y), a 40-item questionnaire measured with a 4-point Likert scale that assesses both trait and state anxiety. The STAI-Y has been validated in French for ages 11–18 years, with an internal consistency of 0.73 and 0.88 and test-retest reliability (over eight weeks) of 0.60 and 0.86 for trait and state anxiety, respectively (Spielberger et al., 1993).

The reliable change index (RCI) was calculated to assess clinically significant change, defined as a value exceeding 1.96 ($p < .05$) (Jacobson & Truax, 1991). This value indicates statistically significant improvement or deterioration beyond the range of measurement error

and is determined by comparing pre-treatment and post-treatment scores on each outcome measure.

6 Case Conceptualization

This clinical case conceptualization, based on initial sessions, revealed dysfunctional psychological processes associated with Julie's anxious attachment style, which contributed to her presenting issues (Mikulincer & Shaver, 2019). This supports our hypothesis that her anxious attachment led to negative perceptions, interpersonal difficulties, and emotion dysregulation, as detailed below:

(a) **Distorted cognitions (about the self, others, and cannabis):** We hypothesized that Julie developed low self-esteem and negative representations of both herself and others, which are related to her insecure attachment. During initial sessions, she voiced feelings of shame and failure, particularly regarding her physical appearance and perceived lack of academic achievement.

Additionally, Julie expressed pessimistic beliefs about her ability to manage distress, characterizing herself as "vulnerable and fragile". She harbored the belief that others would eventually abandon her, leading to rumination about past and potential future scenarios of abandonment. Furthermore, she held distorted beliefs about cannabis, viewing it as her sole effective mechanism to regulate her distress and considering it as her "best friend".

This perspective aligns with the results of the psychological assessment (see Table 2), which indicated insecure attachment tendencies towards both her mother and her father.

(b) **Interpersonal dysfunctional process:** We hypothesized that Julie displayed a dependent relationship with her mother, regularly reaching out to her through calls and texts throughout the day. She relied on her mother to make decisions and schedule appointments, to the extent that she even requested that we directly contact her mother to arrange our sessions. Furthermore, Julie insisted that her mother accompany her to therapy, indicating that she would not attend otherwise. Additionally, Julie disclosed that she had only one close friend who did not live nearby and that she led a relatively isolated lifestyle.

(c) **Emotion regulation deficits:** We hypothesized that Julie displayed unsuccessful efforts to regulate the intensity of negative emotions, thereby contributing to the reinforcement of her distress. In interpersonal contexts, Julie displayed reassurance-seeking behaviors towards her mother, pursued affection through sexual behaviors to feel loved, and engaged in suicidal behaviors to gauge the reactions of others. Additionally, she demonstrated aggressive behaviors during conflicts, including screaming and breaking things. In an intrapersonal context, she resorted to CU, binge eating, and self-harm to regulate her distress in emotional situations.

Our view was further supported by the results of the psychological assessments (see Table 2), which indicated dysfunctional intrapersonal and interpersonal emotion regulation strategies.

Figure 1 presents a summary of the process-based conceptualization, which is informed by existing processual conceptualizations. It illustrates the relationships between the identified risk factors (distal factors), the hypothesized psychological processes (proximal factors), and the resulting CUD and emotional symptoms.

Table 2. Change in Cannabis Use, Emotional Symptoms, and Psychological Processes.

	Range	Cutoff	Pre-intervention	Mid-intervention	Post-intervention	2-month follow-up	RCI
Total numbers of CU days	NA		29	30	24	11	NA
Total joints	NA		178	169	132	34	NA
Max. Joints/day	NA		9	9	8	5	NA
BDI	0–63	30	45	49	17	29	−5.44*
IPPA M – Trust	4–20		14	14	17	14	1.15
IPPA M – Alienation	4–20		12	14	8	16	−1.32
IPPA M – Communication	5–30		26	25	28	26	0.52
IPPA M – Total	11 46		28	25	37	24	1.42
IPPA F – Trust	4–20		17	15	17	15	0
IPPA F – Alienation	4–20		9	12	13	13	1.37
IPPA F – Communication	5–30		18	16	18	19	0
IPPA F – Total	11–46		26	19	22	21	−0.74
Internal – Functional ER	4–25		4	7	11	6	14.43*
Internal – Dysfunctional ER	4–25		17	13	13	12	−7.64*
External – Functional ER	5–30		6	8	9	7	4.61*
External – Dysfunctional ER	4–25		6	2	4	4	−5.45*
STAI – Trait	20–80	65	48	65	43	56	−1.31
STAI – State	20–80	65	78	73	63	74	−2.06*

Note. BDI = Beck Depression Inventory, IPPA Mother = Parent and Peer Attachment Inventory, IPPA Father = Parent and Peer Attachment Inventory, ER = Emotion Regulation, STAI = Spielberg State-Trait Anxiety Inventory (STAI-Y), RCI = Reliable Change Index. *Clinically significant change.

7 Course of Treatment and Assessment of Progress

Course of Treatment

In the initial session, the psychiatrist engaged both Julie and her mother to foster a therapeutic alliance, exploring family dynamics and current difficulties through interactions with Julie alone and in her mother's presence. According to her mother, their relationship was characterized as tumultuous. She described her daughter as having a tyrannical demeanor at times, displaying aggression towards her when frustrated. However, Julie also exhibited a highly sensitive and vulnerable side, frequently seeking reassurance about her mother's love and affection. Julie's CU amplified the conflicts with her parents. Julie recognized this, expressing feelings of guilt. She further elaborated on her CU as a coping strategy for her intense emotional states: "When I abstain from smoking, I experience anger, dark thoughts, and I feel overwhelmed and fragile."

Afterwards, with Julie and her mother present, the therapist validated parental concerns and emotions, acknowledging adolescence as a challenging transitional phase for every family member. He offered insight into the biopsychosocial factors of addiction, aiming to guide both the parents and Julie away from assigning blame. The therapist clarified that CU often initially arises

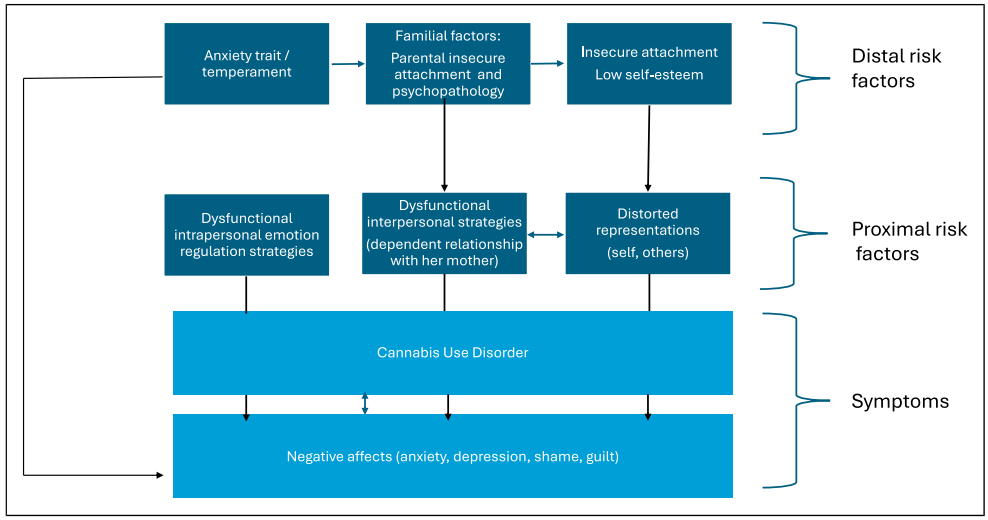

Figure 1. Julie's process-based conceptualization.

from underlying difficulties rather than being the sole cause, yet prolonged usage can lead to negative consequences. The therapist then recalled the framework and primary focus of the intervention. A simple engagement contract involving the whole family was proposed for the duration of the therapy: refraining from discussing cannabis within the family and redirecting focus toward meeting the adolescent's needs, thus breaking the cycle of positive reinforcement.

In the second session, using a motivational approach, the therapist guided Julie in exploring her ambivalence toward her CU by highlighting discrepancies between her current behavior and personal values, while fostering a non-judgmental, collaborative environment. Julie's therapeutic goals included reducing CU and recognizing its adverse effects on her mood, relationships, and aspirations (e.g., her ambition to engage in voluntary work abroad). Although she assessed her motivation level for quitting CU at 9 out of 10, her confidence in quitting smoking remained modest, at 1 out of 10. She listed several obstacles: her attachment to cannabis, feelings of loneliness, challenges in managing intense emotions and interpersonal conflicts, sleep disturbances, and reliance on cannabis in the morning to initiate her day. At the end of the session, the therapist prepared Julie for the next one with her mother, explaining that they would address rules and boundaries essential for her growth and clarifying that these were necessary for her personal growth.

In the third session, with both Julie and her mother present, the therapist examined communication between Julie and her parents, particularly during Julie's moments of distress and parental responses to her needs. Julie's mother expressed her distress and frustration with their relationship, limiting interactions with her daughter to avoid conflicts. Meanwhile, Julie felt misunderstood regarding her CU and expressed feeling guilt about her father's depression, which hindered her from discussing her difficulties. The therapist then explained that addiction can be reinforced by difficulties in adaptation during adolescence, such as managing intense emotional states or transitioning from relying mainly on parents to developing more reciprocal relationships. Emphasis was placed on addressing Julie's need for support during this transitional period while nurturing her need for autonomy and personal experiences. The therapist underscored the importance of gradually distancing herself from her mother, assuming more responsibilities, and engaging in new activities. Parents were consequently positively reinforced in their central role as primary attachment figures during times of distress. In addition, the therapist highlighted to Julie

and her mother that since she still relied on her parents, it was important for her to respect boundaries. Subsequently, a discussion ensued regarding strategies to improve communication. The therapist recommended that emotionally charged conversations should occur at opportune moments, focusing on the present context and a specific subject. Each individual should be afforded the right to express their feelings and viewpoints, with a priority placed on emotional validation. Following this, a conflict scenario between Julie and her mother was addressed, which revolved around CU at home. The mother expressed discomfort with the odor of cannabis in the house and concerns about neighbors witnessing Julie's smoking, while Julie voiced anxiety about being away from home. After a collaborative dialogue, a compromise was reached: Julie would smoke in the nearby park.

In session 4, the focus shifted to psychoeducational insights into adolescent brain development and the effects of cannabis. Julie grasped the paradox: while cannabis may provide temporary relief from emotional distress, it simultaneously impairs the development of short and long-term emotion regulation abilities. In addition, the therapist and Julie focused on the characteristics of emotions, as well as their interactions with cognitions, physical sensations, and behaviors, and their consequences in the short and long term.

During sessions 5 and 6, the therapist and the patient first analyzed Julie's emotional reactions to identify avoidance or hyperactivation of the attachment system and the resulting strategies. The therapist elucidated the distinctions between emotional dysregulation associated with the typical stages of adolescence, depressive mood, and secondary attachment strategies (in this case, hyperactivation strategies). Julie realized that, in interpersonal situations that activated her attachment system, she experienced overwhelming distress and a profound fear of abandonment. These responses led her to use cannabis to numb her emotions, engage in self-harm behaviors, or demonstrate reassurance-seeking behaviors from others. However, while these strategies initially alleviated distress and attachment needs, they ultimately reinforced her emotional and interpersonal difficulties. After assessing both the short- and long-term consequences of these emotion regulation strategies, the therapist and Julie identified specific situations that could activate her attachment situation, enabling her to better anticipate and manage them.

In sessions 7 and 8, the focus was on developing emotion regulation and interpersonal problem-solving skills. The therapist prompted Julie to vividly recount interactional scenarios involving attachment figures that had preceded CU. Following emotion-focused questioning, patterns in expressions of feelings and needs emerged. The therapist observed interactions marked by agitation and confusion, along with difficulties in articulating feelings and being receptive to others. Julie realized that she had not felt heard during these interactions, but also that she had struggled to listen to others. After identifying that Julie tended to hyperactivate her attachment system during a conflict, resulting in overwhelming emotions and inhibiting her cognitive abilities, the therapist guided her towards positive conflict resolution. Through role-playing, the emphasis was on selecting the appropriate moment when Julie was not experiencing intense emotions and on openly expressing feelings while being receptive to the emotions and thoughts of others.

Session 9 encompassed psychoeducational elements addressing craving and relapse alongside the identification of high-risk situations for CU. Julie recognized that major arguments with her parents, new relationships, and a new job were potential triggers. Together, she and the therapist formulated a management plan, which included strategies such as weighing pros and cons, seeking support from her best friend, and using drawing as a distraction.

In session 10, the therapist summarized Julie's progress to her mother and gathered feedback from both Julie and her mother to assess their evolving interactions. Collaboratively, they tackled challenging situations by discussing potential solutions with the therapist's encouragement of autonomy and exploration. Finally, the therapist underscored the importance of parents validating the adolescent's emotional experiences, leading to new regulation strategies and open

communication of difficulties. This new emotional climate would serve to provide corrective attachment experiences, characterized by trust and a commitment to problem-solving.

Outcomes

As assessed by the TLFB calendar, we observed a steady and gradual decrease in her CU throughout therapy and for the two months following the intervention (see Figure 2). Before therapy, Julie reported CU on 29 of the previous 30 days, totaling 178 joints (average of 6.14 per CU day). Two months after the intervention, her usage had decreased to 11 days in the previous month, with a total of 34 joints consumed (average 1.1 per CU day).

Table 2 illustrates a significant reduction in depression levels (BDI scores) post-intervention (RCI = −5.44, $p < .05$). This reduction persisted below the clinical cutoff at the 2-month follow-up, with a significant decrease compared to baseline.

Regarding anxiety levels, there was a significant decrease post-intervention (RCI = −2.06, $p < .05$), reaching clinical relevance (score <65). However, at follow-up, no difference from baseline was observed.

Additionally, all the emotion regulation strategies showed significant improvement post-intervention. Internal-functional (RCI = 14.43) and external-functional (RCI = 4.60) strategies improved from baseline, while internal-dysfunctional (RCI = 7.64) and external-dysfunctional (RCI = −5.45) strategies decreased significantly. At the two-month follow-up, differences were noted for all except the external functional strategies.

It is noteworthy that no significant difference was found in attachment to the mother or father compared to baseline. While attachment scores to the mother initially increased from 28 to 37 out of 50 post-intervention, they subsequently declined to 24 at the follow-up.

8 Complicating Factors

Despite improvements in CU, emotional symptoms, and emotional regulation, the patient did not exhibit significant enhancements in self-reported attachment security. There may be several reasons for this. First, the duration of the follow-up period may have been insufficient to observe noticeable changes in attachment security, as such improvements often require time and new interpersonal experiences to develop. Second, it is plausible that the duration of therapy itself was inadequate for effectively addressing attachment-related issues, particularly concerning traits associated with borderline personality disorder, which can lead to intense hyperactivation of the

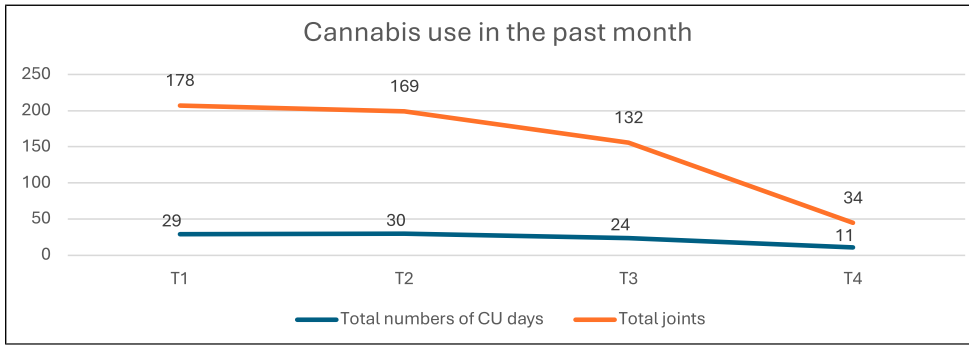

Figure 2. Change in cannabis use in the previous 30 days. T1: pre-intervention; T2: mid-intervention; T3: post- intervention; T4: 2-month post- intervention.

attachment system (Miljkovitch et al., 2018). These patterns may necessitate a deeper exploration of underlying emotions and beliefs over an extended therapeutic period. Third, the assessment of attachment security relied on a self-report measure, which may have inherent limitations. Inconsistent or contradictory narratives, characterized by oscillations between idealization and devaluation of attachment figures, are common in individuals with anxious attachment patterns. Additionally, as the scale validation article did not provide information on standard deviations, we referenced a thesis study for the estimation of the RCI (Vignoli & Mallet, 2004).

9 Access and Barriers to Care

Julie encountered several challenges throughout therapy. First, her lack of structured daily activities, resulting from self-isolation due to distress and insufficient support from her mother, increased her risk of continued CU. To address this, the ongoing pressure Julie faced from her mother regarding her future was discussed during therapy, with an emphasis on prioritizing substance use recovery and emotion regulation to help Julie develop a more positive perspective on her future. Additionally, her father's difficulties with alcohol use disorder and depression prevented him from attending therapy, which reinforced Julie's feeling of guilt and concern. To maintain family cohesion and alleviate Julie's guilt, the therapist encouraged her and her mother to summarize the key points discussed in therapy and share them with her father.

Julie also tended to interpret the therapist's statements negatively, often responding with intense emotions, particularly during family sessions. In response, the therapist created a structured and supportive environment that encouraged Julie to express her distress. Once a trusting relationship was established, the therapist helped Julie identify her attachment-related emotional and cognitive responses, enabling her to reassess her initial interpretations and adopt more adaptive perspectives. These tailored interventions were integral to reducing the barriers to care and fostering her engagement in the therapeutic process.

This case study highlights the importance of a personalized, flexible approach tailored to adolescent CUD, considering cost-effectiveness, time constraints, and implementation feasibility. In this context, evidence-based treatments for adolescent CUD typically involve a combination of motivational interviewing, cognitive behavioral therapy, and family-based therapies (Adams et al., 2023; Bou Nassif et al., 2023; Fadus et al., 2019). Multidimensional family therapy is among the most effective family-based approaches for treating CU in youth. However, its format—which can sometimes extend up to six months, involving several sessions per week and requiring a multidisciplinary team—results in high costs and practical challenges in clinical settings (Adams et al., 2023).

To address these challenges, our program offers a unique approach by integrating motivational interviewing, cognitive behavioral therapy, and attachment-based therapy, while incorporating family sessions within an individual therapy. One notable advantage of ITACM is its brevity, which facilitates implementation in clinical settings and enhances engagement with adolescents and their parents. Additionally, the brief training required for clinical psychologists supports its feasibility for widespread adoption.

While ITACM is a promising intervention, its effectiveness may be constrained by barriers, particularly in complex psychological and social contexts. One key factor in the success of this intervention is early parental engagement in therapy. Involving both parents allows for a comprehensive approach to address disagreements regarding their child's substance use, align caregiving strategies, explore shared feelings of guilt and shame, and consider the adolescent's development needs. However, attachment-related challenges within families may hinder participation in therapy. For example, enmeshed families may need reassurance that therapy fosters family cohesion by balancing autonomy and support while disengaged families may benefit from

emphasizing their critical role in the adolescent's development. When involving both parents is not feasible, engaging one parent with the expectation of sharing key points with the other may still be effective. In all cases, clinicians and families must collaboratively establish realistic and context-sensitive objectives.

Therefore, ITACM is designed for adolescents with an insecure attachment style that is linked to negative perceptions of self and others, emotion dysregulation, and difficulties in interpersonal relationships. However, it may not be appropriate for adolescents with other predominant difficulties contributing to CUD, such as a history of trauma, which may require specialized interventions. For adolescents experiencing family violence or those with parents facing severe psychological difficulties, interventions that prioritize the adolescent's individual safety and needs, such as individual psychotherapy, may be more appropriate. For dysfunctional families, depending on the relational patterns or issues, individual or family therapy may be recommended to address systemic challenges.

10 Follow-Up

We hypothesized that by addressing emotion dysregulation and interpersonal difficulties—through identifying and challenging attachment-related emotional and cognitive responses, and improving interpersonal skills—along with strategies like problem-solving and emotional awareness, the patient demonstrated consistent reduction in her CU. This decrease went from 178 joints over 29 out of 30 days–32 joints over 11 out of 30 days at the two-month follow-up. Additionally, there was a significant reduction in depressive symptoms at the follow-up, with the score falling below the clinical cutoff. Julie also showed significant improvements in all measured intra-personal emotional regulation strategies and in inter-personal dysfunctional strategies.

11 Treatment Implications of the Case

In response to recent recommendations, we developed ITACM, a 10-session individual intervention which incorporates three family sessions. ITACM places a primary focus on targeting the underlying etiological psychological processes associated with CUD, such as emotion dysregulation and interpersonal difficulties, rather than exclusively focusing on CU (Hamonniere et al., 2022; Stellern et al., 2023; Weiss et al., 2022).

This article aimed to provide a comprehensive overview of a process-based conceptualization and treatment approach for a young patient with concurrent severe CU, emotion dysregulation, and interpersonal difficulties. During therapy sessions, Julie and the therapist identified her emotional reactivity and hyperactivation of the attachment system as central to her difficulties. Distorted cognitions and dysfunctional emotional strategies were recognized as temporary coping mechanisms that ultimately reinforced her CU. In response, they collaborated to develop adaptive strategies, focusing on emotional triggers and implementing alternative behaviors while acquiring new interpersonal skills. During family sessions, the emphasis was on encouraging Julie's autonomy and personal development while providing support when needed. By the final family session, Julie's increased openness and her mother's more empathetic and validating responses led to improved emotion regulation and greater receptivity to dialogue.

The findings suggest that addressing core psychological processes—particularly those related to attachment reactivity and emotion dysregulation—can effectively reduce CU and emotional distress in youth, specifically when these processes are identified as maintaining factors in case conceptualization. By integrating family involvement and focusing on improving both interpersonal and emotion regulation skills, ITACM offers a holistic approach that could be applied to other youth facing similar challenges. These findings underscore the potential of process-based

therapies to inform future clinical practice, offering a more comprehensive treatment model that targets the underlying psychological factors contributing to CUD and other difficulties based on the patient's symptom conceptualization, rather than solely focusing on CU itself. These results are particularly promising, considering the significant improvements observed in a complex patient within just ten sessions. However, since this research is based on a single case study, additional research with a larger cohort of patients is necessary to validate ITACM's effectiveness.

12 Recommendations to Clinicians and Students

The results indicated that ITACM is indeed feasible, demonstrating potential in reducing severe CU and emotional symptoms by targeting factors such as emotion dysregulation and interpersonal difficulties. ITACM's individualized approach ensures that treatment strategies are tailored to each patient's specific situation and needs. Clinicians are encouraged to identify emotional reactivity and relational dynamics when conceptualizing the patient's difficulties, including recognizing patterns of attachment-related emotional responses and understanding both interpersonal and intrapersonal processes related to CU.

To enhance ITACM's effectiveness, it is crucial to consider patient factors that influence the treatment approach. For instance, age and socio-economic context may determine the depth and complexity of psychoeducation, which should be tailored to the patient's cognitive abilities. Additionally, prioritizing strategies to enhance engagement is essential for patients exhibiting low motivation. Family dynamics also play a significant role: for adolescents with intrusive parents, the focus should be on fostering autonomy, independence, and establishing healthy boundaries. In contrast, for those with absent or neglectful parents, interventions should focus on enhancing parental involvement and promoting effective communication to support emotional awareness and regulation. Furthermore, the therapist's approach should align with the patient's attachment style and emotional reactivity. Patients exhibiting emotional hyperactivation may require a more structured and supportive environment, while those displaying emotional deactivation may benefit from a gradual approach to exploring their feelings and thoughts. Finally, clinicians should reflect on their own emotional and relational responses throughout therapy, as these may be influenced by their attachment style.

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Ethical Statement

Ethical Approval

Approval for the study was obtained from the Institutional Review Board of Comité de Protection des Personnes Sud Ouest et Outre Mer II (Approval Number: 2022-A02067-36).

Informed Consent

Written informed consent to participate in this study was obtained from the patient prior to participation. Written informed consent to publish the findings of this study was obtained from the patient.

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References

Adams, Z. W., Marriott, B. R., Hulvershorn, L. A., & Hinckley, J. (2023). Treatment of adolescent cannabis use disorders. *Child and Adolescent Psychiatric Clinics of North America*, *32*(1), 141–155. https://doi.org/10.1016/j.chc.2022.07.006

Allen, J. P., Grande, L., Tan, J., & Loeb, E. (2018). Parent and peer predictors of change in attachment security from adolescence to adulthood. *Child Development*, *89*(4), 1120–1132. https://doi.org/10.1111/cdev.12840

Allen, J. P., McElhaney, K. B., Land, D. J., Kuperminc, G. P., Moore, C. W., O'Beirne–Kelly, H., & Kilmer, S. L. (2003). A secure base in adolescence: Markers of attachment security in the mother–adolescent relationship. *Child Development*, *74*(1), 292–307. https://doi.org/10.1111/1467-8624.t01-1-00536

Amaro, L. P. S. (2013). *Régulation émotionnelle, attachement et satisfaction de vie*. (Master's thesis). Université de Coimbra. https://hdl.handle.net/10316/25839

Barnett, N. P., DiGuiseppi, G. T., Tesdahl, E. A., & Meisel, M. K. (2021). Peer selection and influence for marijuana use in a complete network of first-year college students. *Addictive Behaviors*, *124*, Article 107087. https://doi.org/10.1016/j.addbeh.2021.107087

Billieux, J., Philippot, P., Schmid, C., Maurage, P., De Mol, J., & Van der Linden, M. (2015). Is dysfunctional use of the mobile phone a behavioural addiction? Confronting symptom-based versus process-based approaches. *Clinical Psychology & Psychotherapy*, *22*(5), 460–468. https://doi.org/10.1002/cpp.1910

Bou Nassif, Y., Rahioui, H., & Varescon, I. (2023). Psychological interventions for cannabis use among adolescents and young adults: A systematic review. *International Journal of Environmental Research and Public Health*, *20*(14), 6346. https://doi.org/10.3390/ijerph20146346

Bowlby, J. (1982). Attachment and loss: Retrospect and prospect. *American Journal of Orthopsychiatry*, *52*(4), 664–678. https://doi.org/10.1111/j.1939-0025.1982.tb01456.x

Brissot, A., Eroukmanoff, V., Gandilhon, M., Janssen, E., Le Nézet, O., Philippon, A., Simioni, M., & Spilka, S. (2023). Les drogues à 17 ans—Analyse de l'enquête ESCAPAD 2022. *Tendances*, *155*, 1–8. https://www.ofdt.fr/publication/2023/les-drogues-17-ans-analyse-de-l-enquete-escapad-2022-562

Buckner, J. D., Walukevich, K. A., Zvolensky, M. J., & Gallagher, M. W. (2017). Emotion regulation and coping motives serially affect cannabis cessation problems among dually diagnosed outpatients. *Psychology of Addictive Behaviors*, *31*(7), 839–845. https://doi.org/10.1037/adb0000310

Byrne, B. M., & Baron, P. (1994). Measuring adolescent depression: Tests of equivalent factorial structure for English and French versions of the Beck Depression Inventory. *Applied Psychology*, *43*(1), 33–47. https://doi.org/10.1111/j.1464-0597.1994.tb00808.x

Ein-Dor, T., & Doron, G. (2014). Psychopathology and attachment. In J. A. Simpson, & W. S. Rholes (Eds.), *Attachment theory and research: New directions and emerging themes* (pp. 346–373). The Guilford Press.

Ein-Dor, T., Viglin, D., & Doron, G. (2016). Extending the transdiagnostic model of attachment and psychopathology. *Frontiers in Psychology*, *7*, 484. https://doi.org/10.3389/fpsyg.2016.00484

European Monitoring Centre for Drugs and Drug Addiction. (2023). *European drug report 2023*. Publications Office. https://data.europa.eu/doi/10.2810/161905

Fadus, M. C., Squeglia, L. M., Valadez, E. A., Tomko, R. L., Bryant, B. E., & Gray, K. M. (2019). Adolescent substance use disorder treatment: An update on evidence-based strategies. *Current Psychiatry Reports*, *21*(10), 96. https://doi.org/10.1007/s11920-019-1086-0

Fairbairn, C. E., Briley, D. A., Kang, D., Fraley, R. C., Hankin, B. L., & Ariss, T. (2018). A meta-analysis of longitudinal associations between substance use and interpersonal attachment security. *Psychological Bulletin*, *144*(5), 532–555. https://doi.org/10.1037/bul0000141

Gobbi, G., Atkin, T., Zytynski, T., Wang, S., Askari, S., Boruff, J., Ware, M., Marmorstein, N., Cipriani, A., Dendukuri, N., & Mayo, N. (2019). Association of cannabis use in adolescence and risk of depression, anxiety, and suicidality in young adulthood: A systematic review and meta-analysis. *JAMA Psychiatry*, *76*(4), 426–434. https://doi.org/10.1001/jamapsychiatry.2018.4500

Halladay, J., Scherer, J., MacKillop, J., Woock, R., Petker, T., Linton, V., & Munn, C. (2019). Brief interventions for cannabis use in emerging adults: A systematic review, meta-analysis, and evidence map. *Drug and Alcohol Dependence*, *204*, Article 107565. https://doi.org/10.1016/j.drugalcdep.2019.107565

Hamonniere, T., & Billieux, J. (2023). Individually delivered mindfulness based cognitive therapy in concomitant problematic substance use and emotional symptoms: A process based case study. *Clinical Psychology & Psychotherapy*, *30*(3), 714–727. https://doi.org/10.1002/cpp.2827

Hamonniere, T., Milan, L., & Varescon, I. (2022). Repetitive negative thinking, metacognitive beliefs, and their interaction as possible predictors for problematic cannabis use. *Clinical Psychology & Psychotherapy*, *29*(2), 706–717. https://doi.org/10.1002/cpp.2664

Hines, L. A., Freeman, T. P., Gage, S. H., Zammit, S., Hickman, M., Cannon, M., Munafo, M., MacLeod, J., & Heron, J. (2020). Association of high-potency cannabis use with mental health and substance use in adolescence. *JAMA Psychiatry*, *77*(10), 1044–1051. https://doi.org/10.1001/jamapsychiatry.2020.1035

Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology*, *59*(1), 12–19. https://doi.org/10.1037/0022-006X.59.1.12

Kendler, K. S., Prescott, C. A., Myers, J., & Neale, M. C. (2003). The structure of genetic and environmental risk factors for common psychiatric and substance use disorders in men and women. *Archives of General Psychiatry*, *60*(9), 929–937. https://doi.org/10.1001/archpsyc.60.9.929

Kober, H. (2014). Emotion regulation in substance use disorders. In *Handbook of emotion regulation* (2nd ed, pp. 428–446). The Guilford Press.

Leadbeater, B., Ames, M. E., Contreras, A., Thompson, K., & Goulet-Stock, S. (2022). Parent and peer influences and longitudinal trajectories of cannabis use from adolescence to young adulthood. *Journal of Child and Family Studies*, *31*(11), 3181–3191. https://doi.org/10.1007/s10826-022-02353-7

Main, M. (1996). Introduction to the special section on attachment and psychopathology: 2. Overview of the field of attachment. *Journal of Consulting and Clinical Psychology*, *64*(2), 237–243. https://doi.org/10.1037/0022-006X.64.2.237

Mikulincer, M., & Shaver, R. P. (2020). Enhancing the "broaden and build" cycle of attachment security in adulthood: From the laboratory to relational contexts and societal systems. *International Journal of Environmental Research and Public Health*, *17*(6), 2054. https://doi.org/10.3390/ijerph17062054

McHugh, R. K., & Goodman, F. R. (2019). Are substance use disorders emotional disorders? Why heterogeneity matters for treatment. *Clinical Psychology: Science and Practice*, *26*(2). https://doi.org/10.1111/cpsp.12286

Mikulincer, M., & Shaver, P. R. (2019). Attachment orientations and emotion regulation. *Current Opinion in Psychology*, *25*, 6–10. https://doi.org/10.1016/j.copsyc.2018.02.006

Miljkovitch, R., Deborde, A. S., Bernier, A., Corcos, M., Speranza, M., & Pham-Scottez, A. (2018). Borderline personality disorder in adolescence as a generalization of disorganized attachment. *Frontiers in Psychology*, *9*, 1962. https://doi.org/10.3389/fpsyg.2018.01962

Moretti, M. M., & Peled, M. (2004). Adolescent-parent attachment: Bonds that support healthy development. *Paediatrics and Child Health*, *9*(8), 551–555. https://doi.org/10.1093/pch/9.8.551

Moskow, D. M., Ong, C. W., Hayes, S. C., & Hofmann, S. G. (2023). Process-based therapy: A personalized approach to treatment. *Journal of Experimental Psychopathology*, *14*(1), Article 20438087231152848. https://doi.org/10.1177/20438087231152848

Nielsen, S., Gowing, L., Sabioni, P., & Le Foll, B. (2019). Pharmacotherapies for cannabis dependence. *Cochrane Database of Systematic Reviews*, *1*(1), Article 08940. https://doi.org/10.1002/14651858.CD008940.pub3

Paulus, D. J., Hogan, J. B. D., & Zvolensky, M. J. (2018). Examining emotion dysregulation as an underlying factor explaining relations of anxiety sensitivity and cannabis use severity. *Translational Issues in Psychological Science*, *4*(1), 21–32. https://doi.org/10.1037/tps0000143

Philippot, P., Bouvard, M., Baeyens, C., & Dethier, V. (2019). Case conceptualization from a process-based and modular perspective: Rationale and application to mood and anxiety disorders. *Clinical Psychology & Psychotherapy*, *26*(2), 175–190. https://doi.org/10.1002/cpp.2340

Phillips, K. F. V., & Power, M. J. (2007). A new self-report measure of emotion regulation in adolescents: The Regulation of Emotions Questionnaire. *Clinical Psychology & Psychotherapy*, *14*(2), 145–156. https://doi.org/10.1002/cpp.523

Rahioui, H. (2016). *La thérapie interpersonnelle*. Presses Universitaires de France.

Robinson, S. M., Sobell, L. C., Sobell, M. B., & Leo, G. I. (2014). Reliability of the Timeline Followback for cocaine, cannabis, and cigarette use. *Psychology of Addictive Behaviors*, *28*(1), 154–162. https://doi.org/10.1037/a0030992

Sauer-Zavala, S., Cassiello-Robbins, C., Ametaj, A. A., Wilner, J. G., & Pagan, D. (2019). Transdiagnostic treatment personalization: The feasibility of ordering unified protocol modules according to patient strengths and weaknesses. *Behavior Modification*, *43*(4), 518–543. https://doi.org/10.1177/0145445518774914

Schindler, A. (2019). Attachment and substance use disorders—theoretical models, empirical evidence, and implications for treatment. *Frontiers in Psychiatry*, *10*, 727. https://doi.org/10.3389/fpsyt.2019.00727

Scholes-Balog, K. E., Hemphill, S. A., Heerde, J. A., Toumbourou, J. W., & Patton, G. C. (2020). Childhood social environmental and behavioural predictors of early adolescent onset cannabis use. *Drug and Alcohol Review*, *39*(4), 384–393. https://doi.org/10.1111/dar.13077

Spada, M. M., Caselli, G, Nikčević, A. V., & Wells, A. (2015). Metacognition in addictive behaviors. *Addictive Behaviors*, *44*, 9–15. https://doi.org/10.1016/j.addbeh.2014.08.002

Spielberger, C. D., Bruchon-Schweitzer, M., & Paulhan, I. (1993). *Inventaire d'anxiété état-trait forme Y (STAI-Y)*. Éditions du Centre de Psychologie Appliquée.

Stellern, J., Xiao, K. B., Grennell, E., Sanches, M., Gowin, J. L., & Sloan, M. E. (2023). Emotion regulation in substance use disorders: A systematic review and meta analysis. *Addiction*, *118*(1), 30–47. https://doi.org/10.1111/add.16001

Substance Abuse and Mental Health Services Administration. (2023). *Key substance use and mental health indicators in the United States: Results from the 2022 national survey on drug use and health*. [HHS Publication No. PEP23-07-01-006, NSDUH Series H-58]. https://www.samhsa.gov/data/report/2022-nsduh-annual-national-report

Tambling, R. R., Russell, B., & D'Aniello, C. (2022). Where is the family in young adult substance use treatment? The case for systemic family therapy for young adults with substance use disorders. *International Journal of Mental Health and Addiction*, *20*(3), 1659–1670. https://doi.org/10.1007/s11469-020-00471-1

Thümmler, S., & Askenazy, F. (2018). *K-SADS-PL DSM-5 French version may 2018 (from KSADS-PL DSM-5 November 2016)*. https://sfpeada.fr/k-sads-pl-dsm-5-version-francaise-2018

Vignoli, E., & Mallet, P. (2004). Validation of a brief measure of adolescents' parent attachment based on Armsden and Greenberg's three-dimension model. *European Review of Applied Psychology*, *54*(4), 251–260. https://doi.org/10.1016/j.erap.2004.04.003

Vujanovic, A. A., Meyer, T. D., Heads, A. M., Stotts, A. L., Villarreal, Y. R., & Schmitz, J. M. (2017). Cognitive-behavioral therapies for depression and substance use disorders: An overview of traditional, third-wave, and transdiagnostic approaches. *The American Journal of Drug and Alcohol Abuse*, *43*(4), 402–415. https://doi.org/10.1080/00952990.2016.1199697

Watts, L. L., Hamza, E. A., Bedewy, D. A., & Moustafa, A. A. (2024). A meta-analysis study on peer influence and adolescent substance use. *Current Psychology*, *43*(5), 3866–3881. https://doi.org/10.1007/s12144-023-04944-z

Weiss, N. H., Kiefer, R., Goncharenko, S., Raudales, A. M., Forkus, S. R., Schick, M. R., & Contractor, A. A. (2022). Emotion regulation and substance use: A meta-analysis. *Drug and Alcohol Dependence*, *230*, Article 109131. https://doi.org/10.1016/j.drugalcdep.2021.109131

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