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Treatment Planning for Co-Occurring Trauma and Behavioral Dysregulation in Adolescents: An Integrative CBT–DBT Framework

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Abstract

This review examined how an integrative cognitive behavioral therapy and dialectical behavior therapy framework can strengthen treatment planning for adolescents presenting with co-occurring trauma-related symptoms and behavioral dysregulation. The review synthesized contemporary and foundational literature on adolescent trauma, emotion regulation, developmental adaptation, multidimensional assessment, intervention sequencing, implementation barriers, and emerging directions for integrated clinical practice. Particular attention was given to the complementary mechanisms of CBT and DBT, the developmental demands of adolescence, and the contextual factors that shape treatment engagement and response.

The findings indicate that trauma exposure during adolescence can disrupt emotional regulation, cognitive processing, behavioral control, interpersonal functioning, and developmental adaptation, while dysregulated behaviors frequently operate as functional responses to distress, threat sensitivity, or maladaptive reinforcement. CBT was identified as especially valuable for addressing trauma-related cognitions, avoidance, conditioned responses, and meaning-making, whereas DBT contributes structured

strategies for mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness. Evidence further supports formulation-driven sequencing, whereby stabilization and skills acquisition may precede or accompany trauma-focused work according to clinical readiness, risk, developmental capacity, and environmental safety.

The review also identified significant implementation challenges, including workforce limitations, fragmented services, inadequate supervision, cultural adaptation demands, and inequitable access to specialist care. It concludes that integrated CBT–DBT planning is most effective when individualized, developmentally responsive, culturally informed, and supported by repeated outcome monitoring. Future practice should prioritize modular care, clinician training, youth and caregiver participation, interdisciplinary coordination, and pragmatic research comparing sequencing strategies, long-term outcomes, and cost-effectiveness across diverse service settings. Greater attention is also required to school functioning, relapse prevention, treatment engagement, and adolescents' preferences throughout recovery.

Keywords: Adolescent Trauma, Behavioral Dysregulation, Cognitive Behavioral Therapy, Dialectical Behavior Therapy, Treatment Planning, Emotion Regulation

1. Introduction

1.1 Adolescent Trauma and Behavioral Dysregulation

Adolescence represents a developmentally sensitive period in which trauma exposure can interact with rapid neurological, emotional, social, and identity-related changes to produce complex patterns of behavioral dysregulation. Trauma during this stage may arise from maltreatment, interpersonal violence, community victimization, loss, neglect, or repeated adverse experiences, and its consequences frequently extend beyond conventional post-traumatic stress symptoms. Dysregulated adolescents may present with irritability, impulsivity, aggression, oppositional behavior, risk taking, emotional volatility,

avoidance, or difficulty maintaining stable relationships. Such manifestations are clinically important because they can be misinterpreted as deliberate misconduct when they may instead reflect maladaptive attempts to manage overwhelming arousal, threat sensitivity, or distress. Meta-analytic evidence indicates that trauma-exposed young people experience substantial difficulties regulating emotions, with post-traumatic symptom severity closely associated with impaired regulatory functioning (Villalta *et al.*, 2018)^[68].

Emotion dysregulation provides a particularly useful mechanism for understanding how traumatic experiences become translated into disruptive or self-defeating behavior. Trauma may compromise the adolescent's capacity to identify emotional states, tolerate distress, inhibit impulsive responses, and select contextually appropriate coping strategies. A meta-analytic review of maltreatment research found that abused or neglected children and adolescents demonstrate systematic disruptions in coping and emotion-regulation processes, reinforcing the developmental significance of these mechanisms (Gruhn & Compas, 2020)^[20]. Similarly, longitudinal and cross-sectional evidence suggests that maltreatment-related emotional reactivity, rumination, and impulsive responding can operate as transdiagnostic pathways linking adversity with both internalizing and externalizing psychopathology (Heleniak *et al.*, 2016)^[24]. Behavioral dysregulation should therefore be conceptualized not as a unitary conduct problem but as a multidimensional adaptation shaped by affective, cognitive, interpersonal, and environmental processes.

The relationship between trauma and dysregulated behavior is also strongly influenced by social context. Among South African adolescents exposed to violence across home, school, community, and broader sociopolitical environments, emotion dysregulation was associated with health-risk behavior and moderated some effects of victimization, demonstrating that trauma-related behavioral responses are embedded within ecological conditions (Sui *et al.*, 2020)^[62]. Nigerian evidence similarly highlights the importance of psychosocial influences. Parental socioeconomic status, peer influence, and self-esteem have been associated with juvenile delinquency among secondary-school adolescents, illustrating how individual vulnerabilities and social pressures may converge in problematic behavior (Balogun & Sabboh, 2021)^[5]. In a separate Nigerian sample, aggressive behavior was associated with school climate, self-efficacy, social-media exposure, and especially peer pressure, emphasizing the need to interpret adolescent dysregulation within relational and institutional environments rather than solely through diagnostic labels (Sabbah & Alausa, 2021)^[53].

Trauma-related dysregulation can additionally become self-perpetuating when high emotional arousal is followed by actions that provide immediate relief but generate longer-term impairment. Evidence from adolescent psychiatric populations has shown that emotion dysregulation can mediate associations between maltreatment exposure and maladaptive coping behavior, indicating that difficulty managing distress may become a central pathway through which traumatic experiences influence behavioral outcomes (Peh *et al.*, 2017)^[46]. Clinically, this mechanism has major implications for treatment planning because observable behaviors may serve different functions across adolescents. Aggression may represent threat-based hyperarousal,

withdrawal may reflect avoidance, impulsivity may provide temporary escape from intolerable affect, and oppositionality may emerge in contexts perceived as unsafe or controlling.

1.2 Developmental Consequences of Trauma Exposure

Trauma exposure during childhood and adolescence can alter developmental trajectories across neurobiological, cognitive, emotional, interpersonal, and behavioral domains. Its effects are consequential during adolescence because regulatory systems are still maturing while demands for autonomy, identity formation, academic competence, and peer relationships intensify. A developmental perspective therefore treats trauma not simply as an event producing symptoms, but as an experience capable of reorganizing processes through which young people interpret threat, regulate affect, learn, and relate to others. Neurodevelopmental evidence indicates that adversity involving threat and deprivation is associated with alterations in neural systems supporting salience detection, memory, reward processing, and executive control, although patterns vary according to adversity type, timing, and developmental stage (McLaughlin, Weissman & Bitrán, 2019)^[35].

Cognitive development may be compromised when maltreatment or persistent adversity occurs during periods of learning. Prospective evidence links childhood maltreatment with later difficulties across intelligence, executive functioning, memory, processing speed, academic achievement, and verbal comprehension, suggesting that developmental consequences can extend beyond trauma-specific symptomatology (Su *et al.*, 2019)^[61]. Such difficulties are clinically relevant because weakened inhibitory control, working memory, and flexible problem-solving may reduce an adolescent's capacity to apply coping strategies consistently, anticipate consequences, or reinterpret trauma-related beliefs during treatment.

Psychological development is affected through heightened vulnerability to internalizing and externalizing psychopathology. Gene-environment research indicates that maltreatment interacts with individual susceptibility in shaping outcomes such as depression, antisocial behavior, and psychiatric difficulties, underscoring heterogeneity rather than developmental inevitability (Maglione *et al.*, 2018)^[34]. Longitudinal research following maltreated young people across adolescence further demonstrates that abuse and neglect may influence interconnected physical, social, psychological, and behavioral pathways as developmental tasks become increasingly complex (Negri *et al.*, 2020)^[40]. African evidence reinforces the importance of contextualizing these developmental processes. Among South African adolescents in the Cape Town Adolescent Antiretroviral Cohort, childhood trauma and stressful experiences were associated with adverse mental-health outcomes, illustrating how trauma can intersect with health-related and social vulnerabilities during adolescence (Sevenoaks *et al.*, 2022)^[59]. Within Nigeria, psycho-social predictors of child abuse among junior secondary school students highlight examining family, social, and environmental circumstances surrounding traumatic exposure rather than treating adversity as context-free (Sabbah & Yusuf, 2021)^[56]. Parenting is relevant because caregiving relationships can intensify developmental vulnerability or provide regulatory support. Evidence among

Nigerian secondary-school adolescents linking parenting styles and effortful control with mental health further demonstrates the developmental significance of family processes and self-regulatory capacity (Oyarekua&Sabbah, 2021)^[45].

For integrative CBT–DBT treatment planning, these consequences require formulation at the level of developmental functioning rather than diagnosis alone. Trauma-related cognitions must be considered alongside attentional control, emotional awareness, impulse regulation, interpersonal expectations, school functioning, family relationships, and autonomy. An adolescent who appears resistant, aggressive, avoidant, or inconsistent may require assessment of developmental capacities that trauma has disrupted before intensive cognitive or exposure-based work is undertaken. Treatment goals can then be calibrated to regulatory competence, cognitive readiness, environmental safety, caregiver support, and the functional meaning of dysregulated behavior, allowing CBT and DBT components to address trauma processing and developmental capacities required to sustain therapeutic gains.

1.3 Limitations of Single-Model Treatment Approaches

Single-model psychotherapies have generated substantial evidence for discrete adolescent clinical problems, yet their utility becomes less straightforward when trauma exposure co-occurs with severe emotional and behavioral dysregulation. Adolescents rarely present with neatly bounded symptom clusters; trauma-related avoidance, hostile attribution, impulsivity, affective instability, interpersonal conflict, and disruptive conduct may interact dynamically across contexts. Nigerian evidence showing that parenting style and self-esteem jointly predict moral disengagement among in-school adolescents illustrates the broader psychosocial complexity within which maladaptive behavior can develop, cautioning against formulations that isolate one symptom domain from its relational and developmental determinants (Sabbah, 2021).

Trauma-focused cognitive-behavioral approaches remain highly effective for reducing post-traumatic symptoms and associated difficulties. In a multisite trial involving young people with sexual abuse-related post-traumatic stress, trauma-focused CBT produced stronger improvements across several clinical outcomes than child-centred therapy (Cohen *et al.*, 2004). Nevertheless, efficacy for trauma processing does not imply that every co-occurring regulatory problem will respond optimally to an invariant protocol. Evidence from Zambia similarly demonstrates that trauma-focused CBT can be successfully delivered in a resource-constrained setting, while also underscoring the importance of contextual adaptation, caregiver participation, and implementation conditions when translating a structured model across populations (Murray *et al.*, 2015).

Conversely, treatments primarily organized around behavioral and emotional regulation may inadequately address trauma-specific cognitions, avoidance, traumatic meaning, and memory processing when these mechanisms remain clinically central. A Norwegian randomized trial established the effectiveness of adolescent DBT for severe dysregulation-related outcomes, supporting its value for strengthening behavioral control and emotional management (Mehlum *et al.*, 2014). Yet such findings do not eliminate the need for explicit trauma-focused work when dysregulation is functionally connected to unresolved

traumatic stress. Research with trauma-exposed girls involved in delinquency likewise found benefits from an intervention emphasizing affect regulation, while outcomes varied across post-traumatic, cognitive, emotional, and relational domains, indicating that no single therapeutic target necessarily captures the full clinical presentation (Ford *et al.*, 2012).

The principal limitation of a single-model approach is therefore not theoretical inadequacy, but insufficient flexibility when adolescent needs are multidimensional, shifting, and comorbid. Modular treatment research offers empirical support for this proposition. In community mental-health services, a flexible protocol permitting clinicians to select and sequence evidence-based components across anxiety, depression, disruptive behavior, and traumatic stress produced faster clinical and functional improvement than community-implemented single-focus evidence-based treatments (Chorpita *et al.*, 2017). For adolescents experiencing both trauma and behavioral dysregulation, an integrative CBT–DBT framework can consequently preserve trauma-focused cognitive and behavioral mechanisms while incorporating mindfulness, distress tolerance, emotion regulation, and interpersonal skills according to formulation. Such integration supports treatment planning that is responsive to changing risk, readiness, family context, developmental capacity, and the functional relationship between traumatic stress and dysregulated behavior without sacrificing coherence, fidelity, or developmental sensitivity in care.

1.4 Review Purpose, Scope, and Objectives

This review examines the clinical rationale for integrating cognitive behavioral therapy and dialectical behavior therapy within treatment planning for adolescents who present with co-occurring trauma-related difficulties and behavioral dysregulation. Its purpose is to clarify how these two evidence-based traditions can be conceptually and practically combined to address the interconnected cognitive, emotional, behavioral, interpersonal, and developmental processes that often characterize complex adolescent presentations. Rather than treating trauma symptoms and dysregulated behavior as separate clinical problems, the review adopts an integrative perspective that considers how trauma exposure can shape threat perception, avoidance, emotional reactivity, impulsivity, aggression, relational instability, and maladaptive coping.

The scope of the review centers on adolescents across community, school-linked, and behavioral health settings where trauma histories intersect with significant difficulties in emotion regulation and behavioral control. Particular attention is given to developmental formulation, multidimensional assessment, treatment sequencing, adaptation of intervention components, and the practical challenges involved in implementing coordinated care. The review does not seek to replace established CBT or DBT protocols, but to examine how their complementary mechanisms may be organized within a coherent treatment plan responsive to symptom complexity, developmental readiness, environmental context, and clinical risk.

The objectives are to synthesize knowledge on the developmental consequences of trauma, evaluate the respective contributions and limitations of CBT and DBT, identify principles for integrating their therapeutic components, and examine how assessment can guide

sequencing and personalization. The review also aims to highlight implementation barriers, evidence gaps, and future priorities for adolescent practice. Ultimately, it provides a foundation for treatment planning that is mechanism-informed, developmentally sensitive, clinically flexible, and capable of addressing both traumatic stress and behavioral dysregulation within a unified therapeutic framework.

2. Integrative Foundations for Trauma and Dysregulation

2.1 Trauma, Emotion, and Behavioral Regulation

Trauma exposure and behavioral dysregulation in adolescence are best understood through the regulatory systems that organize emotional arousal, attention, interpretation, and action. Adolescence already involves heightened sensitivity to social evaluation, increasing autonomy, and continuing maturation of cognitive control. Traumatic experiences can intensify these developmental pressures by altering how threat is detected and how emotional states are managed. Emotion regulation therefore functions as a central bridge between exposure and behavior: When adolescents cannot identify, tolerate, modulate, or flexibly respond to distress, strong affect may be expressed through aggression, avoidance, impulsivity, oppositional behavior, or disengagement. Contemporary reviews emphasize that effective regulation is not simply the habitual use of a supposedly adaptive strategy; it requires flexible selection and adjustment of strategies according to situational demands, goals, and available resources (Haag, Bagrodia & Bonanno, 2024) [21].

This flexibility is important following trauma because emotional responses may become rapid, intense, and difficult to return to baseline. Neurobiological evidence indicates that adolescent emotion dysregulation is associated with differences across neural systems implicated in affective processing, cognitive control, and integration of emotional information, supporting its characterization as a clinically meaningful transdiagnostic process rather than a feature confined to one disorder (Gill *et al.*, 2024) [19]. Physiological regulation is also relevant. A systematic review and meta-analysis identified associations between emotional dysregulation and indices of autonomic functioning in young people, reinforcing the view that dysregulation involves interactions among subjective emotion, behavior, and bodily arousal rather than cognition alone (Bellato *et al.*, 2024) [7].

Trauma can further undermine behavioral control by disrupting attentional processes required to pause, evaluate cues, and select goal-consistent responses. Longitudinal evidence from Chinese adolescents demonstrated that childhood trauma predicted later externalizing problems partly through attentional control, while individual sensitivity influenced the strength of these pathways (Zhang & Wang, 2024) [74]. This finding is important for treatment formulation because apparently deliberate misconduct may reflect compromised regulatory capacity under stress. Broader developmental research similarly identifies emotion regulation, coping, and decision-making as interdependent capacities associated with externalizing behavior, suggesting that interventions addressing only observable conduct may overlook mechanisms sustaining it (Modecki, Zimmer-Gembeck & Guerra, 2017) [37].

Environmental context also determines whether regulatory vulnerability becomes clinically significant. Among South

African adolescents, exposure to multiple forms of violence was associated with both internalizing and externalizing difficulties, with domestic victimization showing particularly strong relationships with adverse psychological outcomes (du Plessis *et al.*, 2015) [16]. Such findings demonstrate that behavioral regulation cannot be separated from the environments in which adolescents experience threat, attachment disruption, peer conflict, and reinforcement.

Nigerian evidence adds an important psychosocial dimension. Peer approval seeking, socioeconomic status, and locus of control were associated with academic self-handicapping among young people, illustrating how perceived social evaluation and personal control can influence maladaptive responses to challenge (Sabbah & Ojo, 2023) [54]. Likewise, research on academic buoyancy among undergraduates in Ibadan highlights the relevance of psychological and contextual resources for adaptive functioning under everyday adversity (Yusuf, Sabbah & Asiyanbi, 2023) [73]. Within trauma-informed adolescent care, these insights support assessment of peer dynamics, perceived control, coping resources, and environmental stress alongside symptom severity.

For an integrative CBT–DBT framework, trauma, emotion, and behavior should therefore be formulated as reciprocally interacting processes. CBT can address trauma-linked appraisals, attentional biases, avoidance, and learned behavioral patterns, whereas DBT contributes structured methods for emotion regulation, distress tolerance, mindfulness, and interpersonal effectiveness. Treatment planning should determine which regulatory failures are most functionally connected to trauma triggers, which behaviors are reinforced by short-term relief or environmental contingencies, and whether the adolescent possesses sufficient regulatory capacity to engage in trauma-focused cognitive and behavioral work. This mechanism-based perspective permits treatment components to be sequenced according to developmental readiness and functional need rather than diagnostic labels alone, while preserving attention to family, school, peer, and cultural contexts that shape both dysregulation and recovery.

2.2 Cognitive Behavioral Therapy for Adolescent Trauma

Trauma-focused cognitive behavioral therapy (TF-CBT) represents one of the most established cognitive-behavioral approaches for children and adolescents experiencing trauma-related psychological difficulties. Its clinical logic rests on the proposition that post-traumatic distress is maintained through interactions among maladaptive appraisals, conditioned fear, avoidance, dysregulated affect, and disrupted interpersonal functioning. Treatment is therefore structured to combine psychoeducation, relaxation and affect-modulation skills, cognitive coping, gradual trauma narration and processing, in-vivo mastery of reminders where appropriate, caregiver involvement, and enhancement of future safety. Contemporary clinical synthesis emphasizes that these components are delivered within a phased framework that first strengthens coping capacities before progressively addressing trauma memories and trauma-related meanings (Cohen & Mannarino, 2022) [11].

The empirical foundation for CBT in youth trauma is substantial. A meta-analysis of randomized controlled trials

found significant reductions in pediatric post-traumatic stress symptoms and associated anxiety and depressive symptoms, supporting CBT as an effective intervention across heterogeneous trauma presentations (Xian-Yu *et al.*, 2022) ^[72]. Evidence from routine Norwegian community services further indicates that TF-CBT can outperform therapy as usual for traumatized youth, suggesting that its efficacy is not restricted to highly controlled research environments (Jensen *et al.*, 2014) ^[26].

International evidence also underscores the importance of contextual adaptation. A systematic review of TF-CBT in low- and middle-income countries found generally favorable trauma-related and psychosocial outcomes, while highlighting cultural adaptation, translated measures, workforce constraints, and local implementation conditions as important determinants of delivery (Thomas *et al.*, 2022) ^[65]. In South Africa, an abbreviated eight-session TF-CBT protocol produced significant improvements in post-traumatic stress and depression among trauma-exposed adolescents, demonstrating that core therapeutic mechanisms can be retained while modifying treatment intensity for resource-constrained settings (Kaminer *et al.*, 2023) ^[27].

The Nigerian evidence base is comparatively emergent, yet a 2024 review focused specifically on adolescents reported that CBT was associated with reductions in post-traumatic stress and related emotional difficulties, while emphasizing the relevance of sociocultural context and service accessibility (Ugwualor *et al.*, 2024) ^[66]. For adolescents presenting simultaneously with trauma and behavioral dysregulation, these findings position CBT as a crucial trauma-processing component rather than a complete response to every regulatory difficulty. Within an integrative CBT-DBT treatment plan, cognitive restructuring, exposure-based processing, behavioral rehearsal, and caregiver-supported meaning reconstruction can directly target trauma-maintaining mechanisms, while treatment pacing should remain responsive to emotional stability, developmental readiness, environmental safety, and the adolescent's capacity to engage with trauma material without becoming behaviorally overwhelmed in clinical practice. This approach also permits clinicians to distinguish trauma-driven avoidance from broader dysregulation, identify barriers to engagement, and coordinate caregiver support so cognitive and behavioral gains are reinforced across settings.

2.3 Dialectical Behavior Therapy for Dysregulation

Dialectical behavior therapy (DBT) offers a coherent framework for adolescents whose clinical presentation is dominated by emotion dysregulation, impulsive responding, interpersonal instability, and difficulty tolerating distress. Its theoretical foundation combines behavioral principles with dialectical strategies that balance acceptance and change, thereby helping young people recognize emotional experiences without automatically translating them into maladaptive action. Adaptations for adolescents typically emphasize skills acquisition, family involvement, developmentally appropriate language, and attention to environmental contingencies, making DBT especially relevant when dysregulated behavior interferes with engagement in trauma-focused treatment (MacPherson, Cheavens & Fristad, 2013) ^[33].

Within DBT, behavioral dysregulation is understood

functionally rather than morally. Clinicians examine antecedents, vulnerabilities, consequences, and reinforcement patterns surrounding problematic responses, while mindfulness supports awareness of internal states and interpersonal effectiveness strengthens communication and boundary management. Contemporary reviews indicate that DBT has developed into a principle-driven, evidence-based treatment with applications across multiple clinical populations, while maintaining emotion regulation and behavioral change as central therapeutic mechanisms (Rizvi *et al.*, 2024) ^[50]. This orientation is particularly valuable for adolescents with trauma histories because intense arousal may narrow behavioral choices and undermine reflective decision-making.

Skills training constitutes a major mechanism through which DBT strengthens regulation. Emotion-regulation strategies aim to improve recognition and modulation of affect; distress-tolerance strategies support functioning during high-intensity emotional states; mindfulness promotes non-reactive awareness; and interpersonal skills address relational conflict that may trigger dysregulated responses. Meta-analytic evidence suggests that DBT skills training can improve symptoms across common mental-health difficulties, supporting the broader clinical relevance of these regulatory capacities beyond a single diagnostic category (Delaquis *et al.*, 2022) ^[14].

Cultural and socioeconomic context nevertheless matters when regulatory interventions are planned. Research among older adolescents from low-income South African settings found substantial emotion-regulation difficulties associated with depressive, anxiety, and post-traumatic stress symptoms, demonstrating the need to situate regulatory vulnerability within broader psychosocial conditions (Ward-Smith, Sorsdahl & van der Westhuizen, 2024) ^[69]. Nigerian evidence likewise shows that cognitive reappraisal and emotional suppression relate differently to adolescent ethical behavior, illustrating that regulation strategies have distinct behavioral implications rather than constituting a unitary capacity (Odo, 2022) ^[42].

2.4 Complementarity Between CBT and DBT

The complementarity of cognitive behavioral therapy (CBT) and dialectical behavior therapy (DBT) is relevant when adolescents present with trauma-related symptoms alongside emotional and behavioral dysregulation. CBT offers structured methods for identifying maladaptive appraisals, reducing avoidance, and modifying learned behavioral responses, whereas DBT emphasizes mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness. Evidence from Nigerian adolescents demonstrates that school-based CBT can be feasible and beneficial, reinforcing the adaptability of cognitive-behavioral methods within culturally and resource-diverse youth settings (Bella-Awusah *et al.*, 2016) ^[6].

DBT contributes a distinct regulatory architecture that can strengthen adolescents' capacity to remain engaged when emotionally demanding trauma work is introduced. In an Egyptian adolescent sample, DBT-A was associated with improvements in emotion regulation, distress tolerance, mindfulness, interpersonal functioning, and behavioral stability, illustrating how skills-based treatment can establish capacities necessary for more intensive cognitive and exposure-oriented work (Abdel-Hameed *et al.*, 2024) ^[1]. This regulatory emphasis is especially pertinent when high

arousal, impulsive responding, or unstable relationships interfere with conventional trauma processing.

The rationale for combining these traditions is supported directly by work integrating DBT with prolonged exposure, a cognitive-behavioral trauma intervention. For adolescents with severe trauma-related difficulties and high-risk behavior, an integrated DBT-A and prolonged-exposure framework has been proposed to address both behavioral stabilization and trauma processing rather than requiring clinicians to choose between them (Lang *et al.*, 2018) [29]. Such integration preserves DBT's hierarchy of behavioral targets while incorporating confrontation and reappraisal of trauma-related memories and beliefs.

Evidence from complex trauma treatment further demonstrates the clinical value of this synthesis. In a randomized trial involving adults with childhood-abuse-related complex PTSD, both cognitive processing therapy and DBT-PTSD produced substantial improvement, while the phase-based DBT-PTSD approach yielded stronger outcomes on several measures, indicating that regulatory and trauma-focused elements can be coherently combined within one treatment architecture (Bohus *et al.*, 2020) [8].

Implementation research also suggests that adding prolonged exposure to standard DBT can improve PTSD and secondary outcomes in public mental-health settings without abandoning DBT's stabilization framework (Harned *et al.*, 2021) [23]. For adolescent treatment planning, complementarity should therefore be understood as functional integration rather than protocol accumulation. CBT components can target trauma meanings, avoidance, and behavioral learning, while DBT components can strengthen the regulatory capacities required to tolerate and apply those interventions. Sequencing should remain individualized, with skills acquisition, cognitive work, exposure, caregiver involvement, and interpersonal interventions coordinated according to risk, readiness, developmental capacity, and the functional relationship between trauma cues and dysregulated behavior.

2.5 Developmental Adaptation of Integrated Interventions

Developmental adaptation is essential when integrating CBT and DBT for adolescents because therapeutic effectiveness depends not only on intervention content but also on whether methods correspond with evolving cognitive, emotional, relational, and autonomy-related capacities. Adolescents differ in abstract reasoning, impulse control, perspective taking, dependence on caregivers, and sensitivity to peers; consequently, adult-derived procedures cannot simply be transferred without modification. A systematic review of trauma-focused interventions found that adaptations commonly involved age-appropriate activities, simplified language, altered delivery formats, caregiver participation, and tailoring to population and cultural context, demonstrating that developmental fit is a core implementation consideration rather than a superficial adjustment (Lange *et al.*, 2022) [30].

Within an integrated CBT-DBT framework, developmental adaptation should preserve core therapeutic mechanisms while modifying how they are taught and practised. Cognitive restructuring may require concrete examples, visual prompts, shorter exercises, or guided identification of trauma-linked beliefs, whereas DBT skills may be strengthened through rehearsal, coaching, behavioural

examples, and repeated application to school, family, and peer situations. Evidence from culturally responsive TF-CBT implementation in Kenya and Tanzania similarly shows that clinicians must attend to local beliefs, customs, socioeconomic conditions, and communication practices while retaining evidence-based treatment principles (Woods-Jaeger *et al.*, 2017) [71].

Family participation is especially important because adolescents remain embedded within caregiving systems that can either reinforce dysregulation or support new coping patterns. Meta-analytic evidence indicates that psychological interventions incorporating parents can yield greater improvements in adolescent psychopathology than adolescent-only approaches, particularly for externalizing difficulties (Pine *et al.*, 2024) [48]. Trauma-focused evidence likewise suggests that caregiver-involving interventions can improve post-traumatic and associated emotional outcomes, although effects vary according to intervention characteristics and family circumstances (Szota, Schulte & Christiansen, 2023) [64].

Nigerian evidence further supports attention to relational context. Parental bonding has been associated with academic boredom and adjustment among young people, illustrating how perceived caregiver relationships may shape engagement and functioning during development (Sabbah&Olugbade, 2021) [55]. Parental involvement has also been linked with career decision-making among secondary-school students, reinforcing the continuing influence of family processes during adolescent autonomy formation (Ezeani, Ogu & Sabbah, 2023) [17].

Accordingly, integrated treatment planning should calibrate CBT and DBT components to developmental stage, literacy, cognitive capacity, family structure, cultural meaning, trauma complexity, and readiness for autonomy. Clinicians may need to vary pacing, session length, caregiver participation, skills rehearsal, motivational strategies, and the balance between individual and family work. Developmental adaptation should not dilute treatment fidelity; rather, it should distinguish essential mechanisms from modifiable delivery features so that trauma processing and regulation skills remain clinically coherent, accessible, and responsive to the adolescent's changing developmental ecology.

3. Assessment and Integrative Treatment Planning

3.1 Multidimensional Assessment and Clinical Formulation

Multidimensional assessment is the foundation of defensible treatment planning when adolescents present with both trauma-related symptoms and behavioral dysregulation. A narrowly diagnostic assessment may identify post-traumatic stress or disruptive behavior while overlooking the mechanisms linking them. Clinical formulation should therefore integrate trauma exposure, symptom patterns, emotional reactivity, behavioral functions, cognitive appraisals, developmental capacities, family relationships, school functioning, peer context, protective factors, and environmental stressors. Developmentally informed trauma instruments can contribute structured information about exposure and post-traumatic symptoms, but their value emerges when results are interpreted alongside interview data and functional observations rather than treated as self-sufficient diagnoses (Kaplow *et al.*, 2020) [28].

Assessment should first establish the nature, timing,

chronicity, interpersonal context, and perceived meaning of traumatic experiences while avoiding unnecessary repetition of distressing material. The Child and Adolescent Trauma Screen 2 illustrates the value of instruments capable of assessing DSM-5 post-traumatic stress alongside ICD-11 PTSD and complex PTSD domains, thereby broadening attention to disturbances in self-organization that may complicate adolescent presentations (Sachser *et al.*, 2022)^[57]. Multi-informant assessment is equally important because adolescents, caregivers, teachers, and clinicians may observe different aspects of functioning. South African research comparing self-report and structured interview methods found meaningful differences in estimates of trauma exposure and PTSD, demonstrating why method and informant effects must be considered when interpreting adolescent assessment data (Suliman *et al.*, 2005)^[63].

Behavioral dysregulation requires similarly differentiated measurement. Irritability, impulsivity, emotional lability, oppositionality, attentional difficulty, and interpersonal conflict should not automatically be attributed to trauma, because comparable behaviors may arise through different developmental or psychiatric pathways. Reviews of dysregulation measurement emphasize the importance of selecting instruments that clarify regulatory domains being assessed rather than relying on a global label that obscures clinically relevant distinctions (Althoff & Ametti, 2021)^[3]. Assessment should also identify strengths that may moderate vulnerability. The development of a revised self-esteem measure for Nigerian adolescents and youths illustrates the relevance of culturally grounded measurement when self-appraisal is incorporated into psychological formulation (Sabbah, 2022)^[51].

Clinical formulation extends beyond test selection by organizing findings into a coherent hypothesis explaining why difficulties developed, what currently maintains them, and which resources may support change. Psychological variables should therefore be considered relationally rather than as isolated scores. Nigerian research examining perceived stress, hopelessness, and self-esteem demonstrates the value of considering interconnected vulnerability constructs when evaluating psychological functioning (Sabbah, 2023)^[52]. For adolescents with repeated or interpersonal trauma, assessment must also extend beyond conventional PTSD symptoms to attachment, identity, affect regulation, dissociation, cognition, behavior, and relational functioning. A systematic review of developmental-trauma measures found variation in available instruments and highlighted the importance of developmentally appropriate assessment across multiple domains (Denton *et al.*, 2017)^[15].

Formulation should additionally incorporate a functional analysis of dysregulated behavior. Clinicians need to identify precipitating cues, emotional and physiological states, trauma-linked meanings, immediate consequences, reinforcement patterns, and contextual responses surrounding each target behavior. This distinguishes, for example, avoidance maintained by perceived threat from impulsive behavior maintained by short-term relief or interpersonal contingencies. Such distinctions are essential for deciding whether initial treatment should emphasize DBT-informed regulation and distress-tolerance capacities, CBT-oriented cognitive and behavioral strategies, environmental modification, caregiver work, or coordinated sequencing of these components.

Assessment should remain iterative after treatment begins. Trauma-informed measurement-based care demonstrates how structured assessment can support case conceptualization, treatment planning, and outcome monitoring across child-serving settings (Purbeck *et al.*, 2020)^[49]. Within an integrative CBT-DBT framework, formulation should therefore function as a revisable clinical map rather than a static intake summary. Changes in symptom burden, regulatory capacity, family circumstances, school functioning, engagement, and readiness for trauma processing should inform adjustments to treatment priorities. This multidimensional approach allows clinicians to connect observable behavior with its developmental and trauma-related functions while avoiding both diagnostic reductionism and the assumption that every difficulty is caused by trauma.

3.2 Sequencing CBT and DBT Interventions

Sequencing CBT and DBT interventions requires a formulation-driven rather than mechanically staged approach, particularly when adolescents present with trauma symptoms alongside emotional and behavioral dysregulation. The central clinical question is whether an adolescent has sufficient stability, attentional control, distress tolerance, and therapeutic engagement to participate productively in trauma-focused work. TF-CBT literature for complex trauma supports extending coping and safety-building components when regulation difficulties are prominent, while retaining gradual trauma processing as an essential treatment element (Cohen *et al.*, 2012)^[12].

A DBT-informed first phase may be indicated when intense affect, impulsive behavior, interpersonal instability, or poor crisis-management skills repeatedly disrupt treatment. Evidence from integrated DBT and prolonged exposure research shows that trauma-focused procedures can be introduced after adequate behavioral control and skills acquisition, rather than deferred indefinitely, supporting a readiness-based transition from stabilization to trauma processing (Harned, Korslund & Linehan, 2014)^[22]. Related phase-based research found that affective and interpersonal skills training before exposure improved several outcomes among individuals with childhood-abuse-related PTSD, illustrating the potential value of preparatory regulation work for complex presentations (Cloitre *et al.*, 2010)^[9].

However, sequencing should not become an assumption that every trauma-exposed patient requires lengthy stabilization. A randomized Dutch trial comparing phase-based treatment with immediate trauma-focused therapy found no advantage for mandatory preparatory treatment, indicating that direct trauma-focused intervention can be appropriate when clinical readiness is sufficient (van Vliet *et al.*, 2021)^[67]. For adolescents, this distinction is important because unnecessary delay may reinforce avoidance, whereas premature trauma processing may exceed available regulatory capacity.

Youth-focused evidence reinforces the feasibility of trauma treatment when intervention intensity and context are matched. Among war-affected Congolese adolescent girls, culturally modified group TF-CBT reduced post-traumatic and broader psychosocial difficulties, demonstrating that structured trauma processing can be implemented in highly adverse settings when delivery is developmentally and culturally adapted (O'Callaghan *et al.*, 2013)^[41]. Nigerian evidence shows that structured cognitive-behavioral

problem-solving can reduce aggressive behavior among school-aged young people, supporting the value of targeted behavioral skills within local service contexts (Abdulmalik *et al.*, 2016)^[2].

4. Implementation Challenges in Adolescent Treatment Planning

Implementing an integrative CBT–DBT treatment plan for adolescents with co-occurring trauma and behavioral dysregulation is more complex than selecting evidence-based techniques. Implementation requires clinical systems capable of sustaining assessment, sequencing, caregiver involvement, skills coaching, trauma processing, risk management, and outcome monitoring across settings in which adolescents live and receive care. A major obstacle is the gap between evidence generation and routine service delivery. Systematic evidence from child and young people's mental-health services identifies barriers at intervention, practitioner, organizational, and wider-system levels, including limited resources, insufficient training, weak leadership support, time pressures, and difficulties maintaining engagement (Peters-Corbett *et al.*, 2024)^[47].

Workforce capability is consequential because integrated care demands competence in two structured therapeutic traditions while preserving coherent case formulation. Clinicians require more than introductory workshops: They need supervised practice, consultation, feedback, and organizational conditions that protect time for treatment preparation and adherence. Implementation science shows that effective dissemination depends on balancing fidelity to core intervention functions with context-sensitive adaptation, rather than reproducing manuals rigidly or modifying them so extensively that active ingredients are lost (Stirman, 2022)^[60]. This tension is amplified in adolescent trauma care, where developmental level, family circumstances, culture, school demands, and fluctuating regulation may require adjustments in pacing and delivery.

DBT presents distinctive operational demands because comprehensive programming can involve individual therapy, skills groups, consultation structures, and between-session support. Multisite implementation of adolescent DBT within publicly funded services in Ireland demonstrated that coordinated training and service-level organization can make DBT-A feasible, but also illustrates the infrastructure required to deliver the model consistently across teams (Flynn *et al.*, 2019)^[18]. TF-CBT implementation presents parallel challenges. Community dissemination experience indicates that workshops alone are insufficient and that ongoing consultation, learning collaboratives, and implementation supports are important for maintaining clinician competence and treatment uptake (Cohen & Mannarino, 2008)^[10].

Resource constraints become especially visible in lower-resource systems. In Lagos youth correctional institutions, psychiatric morbidity coexisted with limited staff preparation, little child mental-health training, and an absence of systematic mental-health screening and intervention, illustrating how service gaps can obstruct treatment planning before psychotherapy is even initiated (Atilola *et al.*, 2017)^[4]. South African service providers have similarly identified limited capacity, excessive workloads, inequitable resource allocation, fragmented services, and inadequate infrastructure as major constraints on child and adolescent mental-health provision (Mokitimi

et al., 2022)^[39]. Under such conditions, an integrated CBT–DBT model may require task-sharing, stepped-care arrangements, referral protocols, and prioritization of essential components rather than assuming specialist-intensive delivery is universally available.

Coordination across professionals and sectors constitutes another implementation challenge. Adolescents with trauma and behavioral dysregulation may simultaneously interact with mental-health clinicians, pediatric services, schools, social services, and family systems. Fragmented communication can produce duplicated assessments, contradictory goals, inconsistent behavioral contingencies, and poorly timed transitions between stabilization and trauma processing. Evidence on multidisciplinary collaboration emphasizes that structured teamwork, information exchange, role clarity, and coordinated decision-making can improve care processes and patient outcomes in complex clinical environments (Ohunyon, Ayinde & Ojukwu, 2023)^[43]. For adolescent treatment planning, these principles imply responsibility for monitoring risk, reinforcing skills, communicating formulation changes, and maintaining continuity across settings.

Sustaining individualized treatment also requires reliable outcome information. Measurement-based care can help clinicians determine whether dysregulation is improving sufficiently to advance trauma work, whether trauma symptoms are responding to CBT components, and whether treatment needs recalibration. However, a systematic review of youth services found implementation barriers at client, clinician, and organizational levels, while highlighting training, stakeholder involvement, technological support, and attention to equity as important facilitators (Whitmyre *et al.*, 2024)^[70].

5. Future Directions for Integrated Clinical Practice

Future development of integrated CBT–DBT practice should move from protocol juxtaposition toward a mechanism-based model in which intervention components are selected, sequenced, and intensified according to the adolescent's clinical profile. Treatment planning should distinguish trauma-related avoidance, maladaptive cognitions, emotion dysregulation, interpersonal instability, and behavioral reinforcement patterns, then match these mechanisms to strategies. Evidence from personalized psychological interventions suggests that tailoring treatment to adolescent characteristics can improve outcomes compared with standardized delivery, although personalization methods remain heterogeneous and require stronger independent replication (Li *et al.*, 2024)^[31].

A second priority is the development of modular treatment architectures capable of responding to comorbidity without fragmenting care. Adolescents with trauma and behavioral dysregulation often present with overlapping internalizing, externalizing, family, and school-based difficulties that may shift during treatment. Modular systems provide a useful precedent because they allow evidence-based procedures to be reorganized around current clinical needs while maintaining treatment logic. A Norwegian randomized trial of MATCH illustrates the feasibility of applying a transdiagnostic modular framework to anxiety, depression, trauma, and conduct problems within specialist services, supporting further investigation of flexible CBT–DBT pathways (Hukkelberg *et al.*, 2024)^[25].

Future practice should also institutionalize measurement-based treatment adaptation. Integrated care should repeatedly assess trauma symptoms, emotional regulation, behavioral functioning, treatment engagement, family stress, and functional outcomes. Feedback can then inform decisions about whether to strengthen DBT-oriented stabilization, introduce or intensify CBT trauma processing, revise environmental contingencies, or address barriers to participation. Research with racially and ethnically minoritized youth indicates that measurement-based care can be adapted to improve relevance, alliance, and engagement, reinforcing the importance of embedding measurement within collaborative rather than administrative processes (Connors *et al.*, 2023) [13].

Digital augmentation represents another promising direction for between-session practice, skills rehearsal, symptom monitoring, psychoeducation, and continuity of care. However, technology should augment rather than replace clinician-guided treatment for complex presentations. A 2024 systematic review and meta-analysis found that internet- and mobile-based interventions for post-traumatic stress symptoms in youth remain supported by a limited and methodologically uneven evidence base, indicating a need for powered trials of trauma-focused digital interventions with clearer attention to adherence and clinical severity (Schulte *et al.*, 2024) [58].

Digital expansion must also be designed around equity. Research among young people in rural South Africa identified enthusiasm for digital mental-health support alongside barriers in affordability, privacy, digital literacy, language, and interface complexity. Future CBT–DBT platforms should therefore be low-bandwidth, culturally and linguistically responsive, privacy-conscious, and compatible with unequal access to devices and data. Hybrid models combining face-to-face therapy with digital skills coaching may be more realistic than technology-only solutions in many settings (Mindu *et al.*, 2023) [36].

Adolescent participation in intervention design should become a routine feature of future model development. Co-design can reveal whether therapeutic language, digital interfaces, homework structures, caregiver involvement, and engagement strategies are acceptable to young people rather than service-driven. Work co-designing the Momentum digital platform with children and adolescents demonstrated how sustained youth involvement can shape content, usability, and service integration, providing a methodological template for developing integrated CBT–DBT resources that are developmentally credible and responsive to lived experience (Ludlow *et al.*, 2023) [32].

Workforce development is equally critical in settings with limited specialist capacity. Integrated practice demands clinicians who understand trauma-focused CBT, DBT principles, developmental psychopathology, family systems, and culturally responsive adaptation. Nigeria's postgraduate child and adolescent mental-health training programme demonstrates that regional capacity-building can expand specialist knowledge across multiple African countries. Future dissemination should extend such models through competency-based supervision, interdisciplinary consultation, train-the-trainer approaches, and outcome-linked continuing professional development rather than one-off workshops (Omigbodun & Ani, 2024) [44].

Finally, research should move toward precision-oriented decision support without allowing algorithms to displace

therapeutic judgment. Emerging precision mental-health frameworks emphasize combining patient characteristics, longitudinal outcomes, and systematic feedback to improve treatment selection. For integrated adolescent CBT–DBT care, this agenda should include pragmatic trials comparing sequencing strategies, clear reporting of treatment modifications, culturally diverse samples, longer follow-up, family and school outcomes, and implementation costs. The aim should be a learning treatment system in which evidence, clinician expertise, adolescent preference, and real-time response are integrated to determine what combination of CBT and DBT components is most appropriate, for whom, when, and under which service conditions (Moggia *et al.*, 2024) [38].

6. Conclusion

This review examined how treatment planning can be strengthened when adolescents present with both trauma-related difficulties and behavioral dysregulation. Its aims were met by integrating developmental, cognitive-behavioral, dialectical-behavioral, assessment, implementation, and service-delivery perspectives into a coherent clinical framework. The review established that trauma in adolescence can disrupt emotional regulation, cognitive processing, interpersonal functioning, behavioral control, and developmental adaptation, while dysregulated behavior often reflects functional responses to distress rather than isolated misconduct.

The analysis further demonstrated that CBT and DBT offer complementary therapeutic mechanisms. CBT provides structured approaches for addressing trauma-related appraisals, avoidance, conditioned responses, and maladaptive behavioral patterns, whereas DBT strengthens mindfulness, distress tolerance, emotion regulation, and interpersonal effectiveness. Their integration is therefore most clinically valuable when guided by multidimensional assessment and individualized formulation rather than by rigid protocol sequencing. The findings also showed that treatment readiness, developmental capacity, family context, environmental safety, and symptom acuity should determine whether stabilization, skills acquisition, trauma processing, or blended intervention receives initial emphasis.

Important implementation barriers were identified, including workforce limitations, fragmented services, inconsistent supervision, cultural adaptation challenges, limited measurement systems, and inequitable access to specialist care. Future practice should consequently emphasize modular treatment structures, measurement-based decision-making, youth and caregiver participation, culturally responsive adaptation, digital augmentation where appropriate, and stronger interdisciplinary coordination.

Overall, integrated CBT–DBT planning offers a clinically coherent approach for adolescents whose trauma and dysregulation are mutually reinforcing. It is recommended that services adopt formulation-driven sequencing, strengthen clinician training and supervision, incorporate repeated outcome monitoring, and expand culturally responsive research across diverse populations. Future studies should compare sequencing strategies, evaluate long-term functional outcomes, examine cost-effectiveness, and determine which combinations of CBT and DBT components work best for specific adolescent profiles and service contexts. Particular attention should also be given to school functioning, caregiver burden, treatment engagement,

relapse prevention, and adolescents' own preferences as meaningful indicators of recovery.

7. References

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