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Does Brief Compassion-Focused Therapy for Mothers of Children with ADHD Improve Psychological Distress? A Randomized Controlled Trial

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Abstract

Introduction: Raising a child with Attention-Deficit/Hyperactivity Disorder (ADHD) can cause significant psychological distress for caregivers, particularly mothers. This study aimed to evaluate the efficacy of brief Compassion-Focused Therapy (CFT) in improving psychological outcomes for mothers of children with ADHD.

Method: Mothers were randomly assigned to either the CFT intervention group (n=56) or a waitlist (WL) control group (n=42), with sessions held twice per week over a four-week period. Survey data were collected before the intervention, immediately after the intervention period, and again two months later. The primary outcomes were levels of depression, anxiety, and stress. Secondary outcomes included distress tolerance and affiliated stigma.

Results: A linear mixed model revealed a significant interaction favoring the CFT group, with greater reductions in depression ($d = 1.05$, $p < 0.01$), anxiety ($d = 1.20$, $p < 0.01$), and distress tolerance (both total and subscales) compared to the WL control group. These improvements were maintained at the 2-month follow-up. No significant interaction was found for stress or the total and subscales of affiliated stigma.

Conclusion: CFT led to significant reductions in depressive and anxiety symptoms, as well as improvements in distress tolerance. These findings suggest that CFT may be beneficial for enhancing maternal mental health in caregivers of children with ADHD.

1. Introduction

Attention-deficit/hyperactivity disorder (ADHD) is a prevalent childhood emotional-behavioral condition marked by persistent symptoms such as hyperactivity, difficulty maintaining attention, emotional instability, cognitive disorganization, and a strong inclination toward immediate gratification, commonly referred to as impulsivity (Kulkarni, 2015). This disorder is frequently diagnosed in childhood (Barkley et al., 2006) and affects approximately 7.6% of children and adolescents globally (Salari et al., 2023). ADHD affects not only individuals diagnosed with the condition but also those in their immediate environment (Chronis et al., 2003; Segenreich et al., 2009; Xia et al., 2015). Parents of children with developmental disorders are shown to experience significantly higher levels of stress compared to parents of neurotypical children (Craig et al., 2016; Stewart et al., 2015). Research has shown that parents of children with ADHD often experience significant parenting stress (Johnston & Mash, 2001). Furthermore, they are at a higher risk of family disruptions, such as divorce, and face greater challenges in maintaining employment compared to parents of children without ADHD (Kousgaard et al., 2018; Kvist et al., 2013). Notably, these difficulties (such as parenting stress and employment challenges) appear to have a greater impact on mothers than on fathers (Lee & Kim, 2022). Mothers may experience greater parenting stress because they bear a larger share of child-rearing responsibilities (Yurdakul et al., 2024) and are often blamed for their children's misbehavior (Harborne et al., 2004). Parenting stress also has the

undesired effect of predicting negative parenting practices which can then exacerbate child behavioral difficulties (Riany & Ihsana, 2021).

As noted, the primary responsibility of caring for children with ADHD often rests on mothers, who tend to experience greater psychological distress than fathers (Moen et al., 2016). Compared to mothers of children without ADHD, they frequently report lower family life quality (Romaniuk et al., 2024), a higher incidence of relationship instability, and increased mental health challenges such as depression, anxiety, and stress (Johnston & Mash, 2001) all of which can contribute to reduced distress tolerance. Mothers of children with ADHD often describe their experience as a 'roller coaster,' marked by frequent feelings of stress, frustration, exhaustion, and psychological distress (Laugesen et al., 2016). Further descriptions of mothers experience included the child's behavior feeling like a "wrecking ball"; it feeling like "war at home"; experiencing a divided family where "relationships don't survive"; and craving support (Leitch et al., 2019). In turn, parents' unregulated psychological distress may further aggravate children's symptoms, contributing to their emotional disorganization and persistent feelings of threat and distress (Moen et al., 2016; Özaslan & Yıldırım, 2021; Thompson & Meyer, 2007).

Additionally, mothers' psychological distress was found to be positively associated with affiliate stigma (Charbonnier et al., 2019). Stigma arises when individuals are perceived as possessing a characteristic which distinguishes them as different or socially unacceptable, and impacts not just the individual with the characteristic, but also those associated with them (Goffman, 2009). Affiliate stigma (Mak & Cheung, 2008) is the term used to define parent's internalisation of family, friends and the wider public's negative perceptions towards themselves and their child (Rusu et al., 2023). Not only does affiliate stigma negatively affect the mental wellbeing of the caregiver (Shi et al., 2019), it can also lead to more negative parenting behaviour and hence more aggression and fewer social skills in the child with ADHD (Mikami et al., 2015). In-depth qualitative analysis of parents' experiences of raising a child with ADHD revealed that parents attributed their high stress to social stigma, alongside their children's behaviour, unmet needs for support (Leitch et al., 2019). Consistent with the concept of affiliate stigma, the self-conscious emotions of shame and guilt have been shown to be greater in parents of children with ADHD (Mohamed & Mohammed, 2024).

Given the demands and challenges of raising a child with ADHD, implementing effective strategies and interventions is essential to improving the situation. Generally, interventions designed for parents of children with ADHD concentrate on medicating and improving the child's behavior via behavioural therapies (Iznardo et al., 2020) or fostering school-based modifications and positive parenting practices, with the primary aim of enhancing the child's overall development. Secondary goals often include boosting parental well-being, increasing satisfaction and efficacy in parenting, and improving relationships within the family (Au et al., 2014). In a similar vein, many interventions focus on helping parents develop skills to ensure treatment adherence and improve child outcomes (Dreyer et al., 2010), rather than addressing the emotional challenges mothers face, such as distress tolerance, stigma, depression, or stress, despite their role as primary caregivers. One alternative approach is fostering compassion (Farmer et al., 2023), with some authors arguing for compassion-based interventions to

tackle ADHD (Conway et al., 2019). A review found that parenting stress is consistently reduced by self-compassion (Ozturk & Guzel, 2025) and compassion from others in the form of social support (Riany & Ihsana, 2021).

Whereas behavioral interventions for children with ADHD and their parents are increasingly available across various settings (Dekkers et al., 2022), compassion-oriented interventions are relatively new and focus on fostering compassion toward oneself and the world when faced with struggle and suffering (Gilbert, 2014). Among compassion-based interventions, Compassion-Focused Therapy (CFT) has emerged as a promising approach in recent years (Beaumont & Hollins Martin, 2015; Kirby et al., 2023). CFT involves psychoeducation and embodied practices (such as visualization, role-play and method acting) and has been shown to help clients to create or enhance a compassionate internal relationship with themselves instead of self-criticizing (Kirby & Gilbert, 2017). According to Navab et al. (2019), developing compassion through CFT, might empower parents to be more compassionate, empathic, and accepting of their children. Furthermore, the CFT program has demonstrated promising results in parents, providing them with the opportunity to apply the principles of compassion to themselves, and their children (Kirby et al., 2023). This approach encourages parents to nurture compassion within their family dynamic, helping the family unit to thrive despite the challenges they may face. By fostering compassion in these relationships, CFT not only supports the individual but also contributes to the overall well-being and growth of the family as a whole (Kirby, 2022).

In this study, we focused specifically on mothers of children with ADHD, a group that faces significant challenges in raising their children. As their children grow older, these mothers experience higher levels of psychological distress and stigma compared to mothers of neurotypical children (Harborne et al., 2004; Zhao et al., 2019). Most studies on CFT have primarily targeted clinical groups experiencing depression, anxiety and a range of other mental health difficulties (Kirby, 2019), other than mothers of children with ADHD. To date, only three research teams have investigated the application of CFT in this specific population. The results from these studies are promising, both Navab et al. (2019) and Mohammadi Sangachin Doost et al. (2022) found reduced parental depression, anxiety and stress, whilst Abdolali et al. (2020) found reduced aggression, behavioral problems and anxiety in children of parents given CFT. However, whilst offering promising pilot data, these three studies face limitations as they recruited small samples (i.e. 20–30 participants) and adopted pilot controlled trial designs without longitudinal assessment. To address these limitations, the current study adopted a fully randomized controlled trial design, a larger sample size (n = 98), more extensive outcome measures (i.e. DASS21, Distress tolerance and Affiliate stigma), and included a two-month follow-up.

This study aims to evaluate the effects of CFT on psychological distress among mothers of children with ADHD. We hypothesize that, compared to a waitlist control group, the CFT program will lead to reductions in psychological distress, including distress intolerance, affiliate stigma, depression anxiety and stress. Additionally, we expect these improvements to be sustained at a two-month follow-up.

2. Methods

2.1. Design

A two-month, two-arm randomized controlled trial (RCT) was conducted in 2024, following the CONSORT guidelines for trials (Eldridge et al., 2016). The study began in May 2024 and continued until November 2024. This study is part of a research project at the Department of Psychology, Azarbaijan Shahid Madani University, and was conducted in compliance with the Declaration of Helsinki. All procedures involving human participants were approved by the Research Ethics Committee at Azarbaijan Shahid Madani University (approval number: IR.AZARUNIV.REC.1402.005). Written informed consent was obtained from all participants.

2.2. Participants

A total of 118 mothers of children diagnosed with ADHD were invited to participate in the study through announcements at health centers in Tehran, Iran, as well as referrals from Child and Adolescent Mental Health Services, local schools, community-based family centers, and self-referral. The children had received a clinical diagnosis of ADHD based on the diagnostic criteria of the DSM-5 (American Psychiatric Association, 2013). To be eligible for the trial, participants had to meet the following criteria: (a) the mother was the primary caregiver of the child; (b) the child was between 6 and 12 years old and had been diagnosed with ADHD based on DSM-5 criteria and a clinical interview; (c) the mother scored 9 or higher on the Anxiety subscale of the Depression, Anxiety, and Stress Scale-21 (DASS-21-A), indicating at least moderate anxiety symptoms. Exclusion criteria included autism spectrum disorder, intellectual developmental disorder, other neurodevelopmental disorders, severe psychiatric comorbidities, concurrent participation in other psychological interventions, and low cooperation as determined during screening. Of the 118 mothers who expressed interest in the study, 10 (8.47%) did not meet the eligibility criteria. As a result, 108 mothers were deemed eligible and included in the study.

2.3. Procedure

Randomization was conducted using a computer-generated random number sequence. Participants were allocated in a 1:1 ratio to the CFT intervention or waitlist control group. To ensure allocation concealment, group assignment was performed after completion of the baseline assessment. Both groups underwent assessments at three key time points. Participants in the CFT group were evaluated before the intervention (baseline), immediately after completing the intervention, and again at a two-month follow-up. Likewise, participants in the WL group were assessed at equivalent stages. Upon completion of the final assessment, they were provided access to the CFT program (waitlist compensation). The Consolidated Standards of Reporting Trials (CONSORT) diagram (Fig. 1) summarizes the process of recruitment and flow of participants through the study including reasons for exclusion and drop-out.

2.4. Intervention

2.4.1. Compassion-Focused Therapy

Participants assigned to the CFT condition followed a structured intervention protocol developed by the first author. This protocol is based on the standard CFT framework (Gilbert, 2010, 2014, 2019) and integrates elements of mindfulness (Segal et al., 2012). Paul Gilbert, the founder of CFT, conceptualized compassion as operating through three distinct flows: (i) extending compassion to others, (ii) receiving compassion from others, and (iii) cultivating self-compassion. In CFT, individuals are encouraged to explore the underlying functions of their self-criticism, particularly its protective roles, such as shielding them from rejection, humiliation, or a perceived loss of control. The therapy assumes that self-criticism often arises from deeper fears. As part of the intervention, individuals learn to identify these fears, develop a compassionate response to them, and adopt a more understanding and supportive stance toward their inner critical voice (Beaumont et al., 2021; Craig et al., 2020; Gilbert, 2014). Table 1 outlines the topics covered in each CFT session. Sessions followed a structured format, including:(1) a review of the previous week's homework, with a focus on challenges and obstacles encountered by mothers, (2) the introduction of a specific CFT-related concept, along with guided practice of relevant exercises, and (3) the assignment of homework to reinforce learning throughout the following week. The program consisted of eight group sessions, as described by (Johannsen et al., 2022), each lasting 90 minutes and including a 15-minute break. One of the authors (M.GH), a psychologist with formal CFT training, facilitated the program under ongoing supervision throughout the data collection period.

Table 1
Summary of the CFT Group Protocol

Week	Session	Content	At-home exercise
1	Introducing compassion and distress	Defining the group objectives, initiating communication, reviewing the session structure, introducing the concept of compassion and distress. group discussions. Exercise: Mindfulness (attention training).	Daily mindfulness practice
2	Introducing affect regulation	Revisiting group guidelines and summarizing homework. Psychoeducation: The three systems of affect regulation, exploration of external and internal source of Stigma. Self-compassion as a remedy for distressing emotions. Exercise: Soothing rhythm breathing technique.	Daily soothing rhythm breathing exercise
3	focus on compassion and developing self-compassion	Reviewing the homework. Psychoeducation: Teaching compassion skills and addressing self-criticism. Exploring the stigma and using the mind to visualize oneself as an ideal helper. Exercise: visualizing a safe space and imagining yourself as the ideal helper. Daily soothing rhythm breathing practice.	Mental imagery practices centered on a compassionate other
4	Challenges in cultivating self-compassion and embodying compassion	Reviewing the homework. Psychoeducation: reflection on past experiences that may contribute to distress or discomfort with compassion. Exercise: Visualizing a safe space and envisioning yourself as a 'Compassionate Self.	Daily soothing rhythm breathing exercise and visualizing a safe space
5	Expressions and actions that reflect self-compassion.	Reviewing the previous session homework, Psychoeducation: understanding tolerance distress role as a buffer for the threat system, Group discussion: Exploring self-protective strategies Exercise: Visualizing a safe space, imagining yourself as the ideal helper, and receiving compassion from the ideal helper	visualize a safe place, and receive compassion from the ideal help
6	Using compassion to engage with Self-criticism	Reviewing the previous session homework, Psychoeducation: exploring the forms and functions. Connecting with feelings of warmth and support through personal letter-writing. Exercise: practicing self-compassion and addressing self-criticism.	Compassionate Letter-Writing
7	Presenting the Multimind Framework	Reviewing the homework, Psychoeducation: Understanding emotions and the various aspects of ourselves. Group discussion: Identifying what we need when we feel irritable, afraid, or angry. Exercise: Visualizing a safe space and developing the ideal helper.	Daily visualizing a safe space and developing the ideal helper

Week	Session	Content	At-home exercise
8	Summary and practical implications	Reviewing previous session homework, Psychoeducation: discussion on learned experiences, Group discussion: Group reflections, and moving forward. Exercise: writing a compassionate letter to oneself.	Compassionate Letter-Writing

2.4.2. Wait-list Control group

Participants assigned to the WL control group did not receive the CFT intervention during the study period. They completed all study assessments at the same time points as the intervention group. For ethical reasons, access to self-initiated support and treatment as usual was not restricted. Following completion of the final assessment, participants in the WL control group were offered the opportunity to participate in the CFT program.

2.4.3. Adherence and dropout

Overall, among participants who completed the baseline assessment (T0; n = 104), 101 participants provided outcome data at post-intervention (T1), corresponding to a retention rate of 97.1% (101/104) and an attrition rate of 2.9% (3/104) between baseline and post-intervention. At the 2-month follow-up (T2), 98 participants completed the assessment, indicating a retention rate of 94.2% (98/104) and a cumulative attrition rate of 5.8% (6/104) from baseline to follow-up. Twice-weekly encouragement phone calls were provided to participants in the intervention group (every Friday and Monday) to promote adherence and support the integration of compassion practices into daily life. These calls were delivered by one of the authors (J.S.), a PhD student in counseling psychology, who was trained and supervised by an experienced psychologist. Weekly supervision meetings were held throughout the intervention period to ensure intervention fidelity and integrity.

2.4.4. Treatment acceptability

A brief five-item questionnaire was developed for this study to assess treatment acceptability. Items assessed participants' satisfaction with the intervention and included: (1) overall satisfaction with the therapy, (2) clarity and comprehensibility of the content, (3) perceived benefit, (4) age appropriateness, and (5) willingness to recommend the program to a peer facing similar challenges. Responses were rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Approximately 90% of participants in the intervention group reported that they would recommend CFT to others, and most indicated that the program was beneficial. No adverse events were reported or observed during the intervention, suggesting that the daily exercises were well tolerated.

2.5. Measures

Baseline data included sociodemographic and family characteristics such as mother's age, child's age, maternal education level, delivery type, number of children, and employment status. All outcome measures were administered at three assessment points: pre-intervention (T1; baseline), post-intervention (T2), and two-month follow-up (T3). Compassion-based outcomes were not assessed in the

present study; as previous research has consistently demonstrated the effects of CFT on compassion-related constructs (Millard & Wittkowski, 2023). Accordingly, the focus of the current trial was on psychological distress outcomes. The primary outcome was assessed using the Depression Anxiety and Stress Scale–21 (DASS-21). Secondary outcomes included distress tolerance, assessed with the Distress Tolerance Scale (DTS), and affiliate stigma.

2.5.1. Primary outcome measures

2.5.1.1. Depression Anxiety and Stress Scale–21 (DASS-21).

The Persian version of the Depression Anxiety and Stress Scale–21 (DASS-21) was used. The DASS-21 is a self-report measure comprising 21 items assessing three related negative emotional states—depression, anxiety, and stress— (Burton & Abbott, 2019; Henry & Crawford, 2005) with seven items per subscale (Lovibond & Lovibond, 1995). Items are rated on a 4-point Likert scale from 0 (“did not apply to me at all”) to 3 (“applied to me very much or most of the time”), reflecting symptom severity over the past week. Participants assess their experiences from the past week using a four-point Likert scale ranging from 0 (Never) to 3 (Almost Always). Sample items include statements such as 'I was unable to experience any positive feelings' for depression, 'I noticed dryness in my mouth' for anxiety, and 'I felt like I was using excessive nervous energy' for stress. Lower scores indicate minimal or no symptoms, while higher scores suggest greater levels of psychological distress. The DASS-21 total score provides a general measure of psychological distress. In the study by Brown et al. (2022), the DASS-21 exhibited excellent internal consistency (α = .93), with subscale reliability ranging from good to excellent (α = .80–.91).

2.5.2. Secondary outcome measures

2.5.2.1. Distress Tolerance Scale (DTS).

The Distress Tolerance Scale (DTS), developed by Simons and Gaher (2005), is a 15-item self-report questionnaire with four subscales designed to measure an individual’s capacity to endure emotional distress. It comprises four key domains: Tolerance (e.g., "Feeling distressed or upset is unbearable to me"), Absorption (e.g., "My feelings of distress are so intense that they completely take over"), Appraisal (e.g., "I am ashamed of myself when I feel distressed or upset"), Regulation (e.g., "I’ll do anything to stop feeling distressed or upset"). Mothers were instructed to reflect on past experiences of distress or emotional discomfort and rate each statement on a 5-point Likert scale, ranging from 1 (strongly agree) to 5 (strongly disagree), with 3 representing a neutral response (equally agree and disagree). Higher total scores on the DTS indicate greater distress tolerance, whereas lower scores reflect a reduced ability to withstand and manage distress. In the study conducted by Brown et al. (2022), the DTS demonstrated good internal consistency across the sample (α = .92).

2.5.2.2. Affiliate stigma.

Affiliate stigma was assessed using the 'Affiliate Stigma Scale for Caregivers of Individuals with Mental Illness' (Mak & Cheung, 2008). In this study, the term 'mental illness' was replaced with 'ADHD' to align with the research focus. This 22-item scale assesses three key aspects of affiliate stigma: cognitive (e.g., "Having a family member with ADHD makes me feel less competent than others"), affective (e.g., "I experience emotional distress because I have a family member with ADHD"), and behavioral (e.g., "Because I have a family member with ADHD, I have limited my interactions with friends and relatives"). Responses were recorded on a 4-point Likert scale, ranging from 1 ("strongly disagree") to 4 ("strongly agree"), with total scores spanning from 22 to 88. Higher scores indicate greater levels of affiliate stigma. In the study by Charbonnier et al. (2019), the scale demonstrated high internal reliability (Cronbach's α = 0.91).

2.6. Statistical analysis

All statistical analyses were carried out using SPSS version 25.0. We kindly requested participants to review each question thoughtfully and respond truthfully, reflecting their own experiences and perspectives. To ensure the accuracy of the data, we asked that they avoid repetitive answering patterns —such as consistently choosing the same option for every item (e.g., always selecting "sometimes")—as such responses may reflect inattention and could result in the exclusion of their data from the final analysis. Additionally, participants were encouraged to take adequate time to complete the questionnaire, as unusually rapid completion may indicate a lack of careful consideration and may render the responses invalid. Missing data were handled using multiple imputation. Overall, 2.5% of outcome data were missing at post-treatment and 8% were missing at the two-month follow-up. However, there were no questionnaires with substantial missing data that required exclusion. Linear mixed-effects models were used to evaluate changes in psychological distress outcomes over time between the CFT and waitlist control groups, with fixed effects for group, time, and their interaction. Repeated measurements within participants were modeled using a compound symmetry covariance structure. Analyses were conducted in IBM SPSS Statistics (version 25). Results are reported as estimated effects with 95% confidence intervals, and statistical significance was set at $p < .05$.

3. Results

3.1. Sample demographics

Table 2 presents the demographic and baseline characteristics of the participants by group (CFT: n = 56; waitlist control: n = 42). The mean age of mothers was 30.39 years (SD = 4.32) in the CFT group and 31.47 years (SD = 3.73) in the waitlist group, with no significant difference between groups ($t(96) = -1.30$, $p = .11$). Children's mean age was 7.46 years (SD = 1.40) in the CFT group and 7.78 years (SD = 1.47) in the waitlist group, also showing no significant between-group difference ($t(96) = -1.09$, $p = .87$). Regarding education, 64.3% of the CFT group and 61.9% of the waitlist group had university education ($\chi^2(1) = 0.059$, $p = .80$). Delivery type was comparable across groups, with cesarean delivery reported by 62.5% of the CFT group and 61.9% of the waitlist group ($\chi^2(1) = 0.004$, $p = .95$). The distribution of number of children did not differ significantly between groups ($\chi^2(3) = 0.86$, $p = .83$), with most

participants reporting one child (67.9% in CFT; 69.0% in waitlist). Employment status was similarly balanced between groups (χ^2 (2) = 4.27, p = .11). Overall, there were no statistically significant baseline differences between the CFT and waitlist control groups, indicating adequate comparability prior to the intervention.

Table 2 Demographic and Baseline Characteristics of Participants (N = 98)

	CFT (n = 56)	Waitlist-control (n = 42)	Test of differences
Mother's age (mean years ± s.d.)	30.39 (4.32)	31.47 (3.73)	t (96) = -1.30, p= 0.11
Child age (mean years ± s.d.)	7.46 (1.40)	7.78 (1.47)	t (96) = -1.09, p= 0.87
Education Background, % (n)			χ2 (1) = 0.059, p= 0.80
Without university education	35.7 (20)	38.1 (16)	
With university education	64.3 (36)	61.9 (26)	
Delivery type % (n)			χ2 (1) = 0.004, p= 0.95
Vaginal	37.5 (21)	38.1 (16)	
Cesarean	62.5 (35)	61.9 (26)	
Children % (n)			χ2 (3) = 0.86, p= 0.83
1 child	67.9 (38)	69.0 (29)	
2 children	21.4 (12)	19.0 (8)	
3 children	8.9 (5)	7.1 (3)	
4 or more children	1.8 (1)	4.8 (2)	
Employment Status % (n)			χ2 (2) = 4.27, p= 0.11
Employed (full-time)	16.1 (9)	11.9 (5)	
Employed (part-time)	50.0 (28)	33.9 (14)	
Unemployed	33.9 (19)	54.8 (23)	

Note. CFT, compassion-focused therapy; n, number; s.d, standard deviation; %, percent.

3.2. Primary outcome measures

3.2.1. Depression, Anxiety and Stress

The mixed-effects linear model indicated a significant group × time interaction for depression and anxiety (Table 3 and Fig. 2). Mothers in the CFT group showed significantly lower depression scores at post-treatment compared with the WL group (ΔMean = 2.79, t = 2.92, 95% CI [0.57, 2.95], p = 0.004;

Cohen's d = 1.05, Bonferroni-adjusted $p < 0.001$). Likewise, anxiety scores were significantly lower in the CFT group than in the WL group at post-treatment (ΔMean = 3.07, t = 5.72, 95% CI [1.83, 3.76], $p < 0.001$; Cohen's d = 1.20, Bonferroni-adjusted $p < 0.001$). In contrast, the stress outcome did not show a significant group × time effect (t = 1.31, 95% CI [−0.30, 1.54], p = 0.19), corresponding to a small effect size (Cohen's d = 0.30).

3.3. Secondary outcome measures

3.3.1. Affiliate Stigma

The mixed-effects linear model showed no significant group × time effects for affiliate stigma outcomes (Table 3 and Fig. 3). Specifically, Affective (t = 1.00, 95% CI [−3.19, 1.04], p = 0.31), Behavioral (t = −0.39, 95% CI [−3.33, 2.22], p = 0.69), Cognitive (t = 0.20, 95% CI [−1.84, 2.27], p = 0.83), and Total affiliate stigma score (t = 0.49, 95% CI [−7.11, 4.28], p = 0.62) were all non-significant, with small effect sizes (Cohen's d range = 0.01–0.12).

3.3.2. Distress Tolerance

The mixed-effects linear model demonstrated significant group × time interactions for all distress tolerance outcomes (Table 3 and Fig. 4). Mothers in the CFT group showed significantly greater improvements compared with the WL control group at post-treatment across all subscales, including Tolerance (t = −5.15, 95% CI [−3.72, −1.65], $p < .001$; Cohen's d = 2.07), Absorption (t = −6.57, 95% CI [−4.20, −2.26], $p < .001$; d = 1.82), Appraisal (t = −4.32, 95% CI [−5.58, −2.09], $p < .001$; d = 1.32), and Regulation (t = −3.31, 95% CI [−3.14, −0.79], p = .001; d = 1.76).

In addition, the total distress tolerance score showed a robust and statistically significant improvement in the CFT group relative to the WL group (t = −7.45, 95% CI [−14.14, −8.62], $p < .001$), with a very large effect size (Cohen's d = 3.15), indicating substantial treatment efficacy.

3.4. Follow-up effects

Linear mixed model analyses indicated significant Group × Time interactions for several outcomes, demonstrating differential changes between the intervention and wait-list groups across the pre-treatment, post-treatment, and follow-up assessments. Specifically, significant interaction effects were observed for DASS-21 depression (F = 10.89, p < .001) and anxiety (F = 24.14, p < .001), suggesting that symptom reductions over time were greater in the intervention group and were maintained during follow-up. In contrast, the Group × Time interaction for stress was not significant (F = 0.98, p = .37), indicating comparable patterns of change between groups across the follow-up period. For affiliate stigma dimensions (affective, behavioral, cognitive, and total score), no significant interaction effects were detected (p > .05), suggesting that changes over time did not differ significantly between groups. Notably, significant Group × Time interactions were found for all domains of distress tolerance (tolerance, absorption, appraisal, regulation, and total score; all p < .001), indicating that the intervention group demonstrated greater improvements in distress tolerance that persisted at follow-up (Table 4).

Table 1 Treatment effects of intervention group compared with control group on primary and secondary outcomes between pre- and post-treatment.

		CFT group	WL group	Mixed model analysis			Group difference		
		Mean (SD) (n = 56)	Mean (SD) (n = 42)	*t*	95% CI	*p*	△Mean	*p*	Effect Size [a]
Primary Outcomes DASS-21									
Depression	Pre-treatment	12.44 (2.17)	13.11 (2.10)	2.92	[0.57, 2.95]	0 .004			
	Post-treatment	9.23 (2.18)	12.69 (2.10)				2.79	< .001	1.05
Anxiety	Pre-treatment	13.43 (1.45)	13.50 (1.58)	5.72	[1.83, 3.76]	< .001			
	Post-treatment	9.86 (2.14)	13.00 (1.38)				3.07	< .001	1.20
Stress	Pre-treatment	15.07 (1.55)	15.64 (2.08)	1.31	[-0.30, 1.54]	0 .19			
	Post-treatment	13.87 (1.06)	14.95 (2.15)				0.51	< .001	0.30
Secondary Outcomes Affiliate Stigma									
Affective	Pre-treatment	12.32 (4.55)	13.71 (3.67)	1	[-3.19, 1.04]	0 .31			
	Post-treatment	11.70 (4.19)	13.42 (4.01)				0.33	0.03	0.08
Behavioral	Pre-treatment	15.26 (5.91)	16.00 (2.91)	-0.39	[-3.33, 2.22]	0.69			
	Post-treatment	15.17 (5.86)	16.19 (4.16)				0.10	0.26	0.01
Cognitive	Pre-treatment	14.60 (4.34)	14.02 (2.20)	0.20	[-1.84, 2.27]	0.83			
	Post-treatment	13.80 (4.49)	14.40 (2.83)				0.42	0.79	0.11

Total Score	Pre-treatment	42.19 (12.99)	43.73 (5.89)	0.49	[-7.11, 4.28]	0.62			
	Post-treatment	40.61 (12.30)	44.02 (7.45)				1.29	0.19	0.12
Distress Tolerance									
Tolerance	Pre-treatment	7.09 (2.46)	6.52 (1.68)	-5.15	[-3.72, -1.65]	< .001			
	Post-treatment	10.80 (1.49)	7.02 (1.60)				3.21	< .001	2.07
Absorption	Pre-treatment	7.00 (2.24)	6.69 (1.31)	-6.57	[-4.20, -2.26]	< .001			
	Post-treatment	10.09 (2.12)	6.64 (1.03)				3.04	< .001	1.82
Appraisal	Pre-treatment	15.32 (4.17)	13.92 (2.35)	-4.32	[-5.58, -2.09]	< .001			
	Post-treatment	20.14 (4.01)	14.45 (2.28)				4.29	< .001	1.32
Regulation	Pre-treatment	7.71 (2.68)	7.09 (1.48)	-3.31	[-3.14, -0.79]	0 .001			
	Post-treatment	10.51 (1.60)	6.73 (1.12)				2.44	< .001	1.76
Total Score	Pre-treatment	37.12 (10.08)	34.23 (4.04)	-7.45	[-14.14, -8.62]	< .001			
	Post-treatment	51.55 (5.17)	34.85 (3.44)				13.81	< .001	3.15

Note. CFT, compassion-focused therapy; SD, standard deviation; n, number; DASS-21, 21-item Depression Anxiety and Stress Scale; [a] Effect size was used Cohen's d.

Table 4 Main effects of group and time

	Group			Time			Group × Time		
	F	df	p	F	df	p	F	df	p
DASS-21									
- Depression	61.27	1	< .001	18.24	2	< .001	10.89	2	< .001
- Anxiety	75.66	1	< .001	37.66	2	< .001	24.14	2	< .001
- Stress	18.31	1	< .001	9.05	2	< .001	0.98	2	0.37
Affiliate Stigma									
- Affective	4.08	1	0.031	1.63	2	0.198	0.94	2	0.389
- Behavioral	1.24	1	0.267	0.29	2	0.745	0.18	2	0.834
- Cognitive	0.06	1	0.796	0.19	2	0.823	0.73	2	0.483
- Total Score	1.67	1	0.199	0.42	2	0.653	0.65	2	0.522
Distress Tolerance									
- Tolerance	129.31	1	< .001	33.50	2	< .001	21.79	2	< .001
- Absorption	153.53	1	< .001	21.60	2	< .001	27.98	2	< .001
- Appraisal	136.42	1	< .001	19.05	1.75	< .001	14.16	1.75	< .001
- Regulation	102.86	1	< .001	10.85	1.84		14.40	1.84	
- Total Score	233.0	1	< .001	49.41	1.46		44.73	1.46	

Note. CFT, compassion-focused therapy; DASS-21, 21-item Depression Anxiety and Stress Scale;

3.5. Treatment acceptability

Treatment acceptability was evaluated using a study-specific questionnaire, and participants' responses are summarized in Table 5. One participant did not complete the follow-up assessment due to immigration. Overall, acceptability was high: approximately 70% of participants (69.6%) reported that they agreed or strongly agreed that they would recommend the intervention to a friend and that they perceived the program as useful.

Table 4. treatment acceptability ratings reported by all participants (n = 56)

Acceptability Item	Strongly disagree/ disagree		Neither agree nor disagree		Strongly agree/ agree	
	N	%	N	%	N	%
1. The overall quality of the therapy was satisfactory.	1	1.79%	16	28.6%	39	69.6%
2. The treatment content was clear and easy to understand.	1	1.79%	16	28.6%	39	69.6%
3. This treatment is beneficial for medical students.	1	1.79%	16	28.6%	39	69.6%
4. The treatment was appropriate for someone in my age group.	1	1.79%	16	28.6%	39	69.6%
5. I would recommend this treatment to a friend with similar challenges.	1	1.79%	16	28.6%	39	69.6%

4. Discussion

In this randomized controlled trial, we evaluated the effectiveness of a CFT intervention designed to reduce psychological distress in mothers of children with ADHD, against a waitlist control. The study was unique in adopting a full RCT design with a larger sample size and follow-up, and in examining outcomes related to depression, anxiety, and stress, as well as affiliate stigma and distress tolerance. The results indicated that the CFT intervention led to a significant reduction in depression, anxiety, and distress tolerance, with these effects lasting up to a two-month follow-up. Thus, these findings suggest that CFT could be a valuable intervention for improving the well-being of mothers with children diagnosed with ADHD.

As primary outcomes, the findings revealed significant reductions in anxiety and depression following CFT, whereas no comparable improvements were observed in the WL group. The RCT findings supported the effectiveness and sustained benefits of the CFT intervention for mothers of children with ADHD, consistent with previous evidence demonstrating positive outcomes of CFT among parents and caregivers (Kirby, 2022; Kirby et al., 2023; Navab et al., 2019; Zhu et al., 2024) Considering the elevated levels of psychological distress commonly reported among caregivers of children with ADHD (Johnston & Mash, 2001; Laugesen et al., 2016) , the observed benefits of CFT on these symptoms highlight its potential as a valuable therapeutic approach for this population. The success of the CFT intervention may be attributed to adjustments made to suit the individual's specific emotional and psychological needs, particularly by targeting self-criticism, which is often a key contributor to depression and anxiety, and fostering a compassionate inner voice to improve emotional regulation (Leaviss & Uttley, 2015). Meta-analyses have underscored the effectiveness of CFT in reducing psychological distress, highlighting its potential as a valuable intervention for individuals struggling with heightened emotional reactivity and distress (Kirby et al., 2017). The significance of distress tolerance in our research further

supports these findings, confirming that enhancing emotional regulation through CFT plays a critical role in reducing distress and improving overall mental well-being. Our findings indicate that distress tolerance was significantly enhanced following the implementation of CFT, suggesting that CFT may play a valuable role in alleviating the psychological burden often experienced by mothers of children with ADHD. Supporting this, a meta-analysis conducted by Millard et al. (2023) highlights the promising clinical potential of CFT, showing that the intervention not only enhances compassion-related outcomes but also leads to reductions in clinical symptoms among individuals facing mental health challenges.

Clinically, enhancing distress tolerance in mothers may be related to multiple factors. Firstly, improving one's ability to endure distress can aid in proactively managing negative thoughts and emotions (Jeffries et al., 2016; Russell et al., 2019), reducing tendencies toward over-identification and enabling better awareness of personal psychological struggles (McDonald et al., 2022). Secondly, nurturing self- and other-directed compassion can act as a safeguard against harsh self-criticism and judgment (Wakelin et al., 2022), allowing individuals to embrace their flaws and recognize that missteps in parenting are a normal part of the experience. Thirdly, building distress tolerance entails the ability to face and stay with intense and layered emotions, rather than avoiding, suppressing, or dismissing them (Gilbert, 2009). Lastly, cultivating compassion not only supports the individual's mental health but may also strengthen essential maternal skills that contribute to sensitive and effective parenting (Kirby, 2019).

However, we observed a small effect size in stress levels ($d = 0.30$) following the implementation of CFT. This suggests that while there was some reduction in stress, the change was relatively modest. Stress, particularly in mothers of children with ADHD, is a complex and multifaceted experience, influenced by both internal and external factors (Martin et al., 2019). These could include the ongoing challenges of caregiving, societal pressures, family functioning, and personal emotional regulation difficulties, which are common among mothers of children with ADHD. Given the complexity of stress, it's possible that CFT alone may not have been sufficient to produce substantial improvements in stress reduction. Also, the small effect size in stress levels and the lack of sustained improvements at follow-up suggest that incorporating ongoing support or booster sessions may be necessary within the therapeutic framework.

Furthermore, in contrast to earlier research (Forbes et al., 2020; Riebel et al., 2024; Riebel et al., 2023), our study did not reveal significant changes in affiliate stigma. The lack of significant changes in affiliate stigma may be attributed to several underlying factors. First, affiliate stigma typically develops through ongoing exposure to stigmatizing beliefs and discriminatory experiences, making it more resistant to short-term change—particularly in a societal context where public stigma continues to be widespread (Shi et al., 2019). Additionally, as therapy progressed and the participant's level of self-compassion grew, they began to re-engage with social environments they had previously avoided. This renewed social exposure, while a positive step in recovery, may have temporarily heightened feelings of inadequacy due to an increased risk of encountering judgment or negative reactions from others (Canu et al., 2008), which could help explain the study's findings.

Another possible explanation lies in the measurement tool used. The affiliate stigma scale, originally validated for assessing affiliate stigma in the context of caregivers of individuals with mental illness (Mak & Cheung, 2008), may not have been entirely suitable for capturing the specific nuances of affiliate stigma experienced by mothers of children with ADHD. Consequently, the instrument might not have accurately reflected the changes that did occur within this group. It is also possible that once friends and family have formed negative views of the child with ADHD, these are persistent and any improvement in the parent, child or their dynamic is not recognised by those outside of the immediate home environment.

Overall, our study presents several notable strengths, particularly in using an evidence-based CFT intervention (Gilbert, 2014) delivered by a practitioner trained and qualified in CFT and in addressing key limitations commonly found in this area of research (Davidson & Kaszniak, 2015). Specifically, this investigation was designed as a RCT with a waitlist control group, adhering to the CONSORT guidelines for trials. A further strength lies in the inclusion of a follow-up assessment—a component that remains uncommon in empirical research on compassion interventions (Navab et al., 2019). Importantly, to our knowledge, this is the first study to demonstrate that brief CFT can positively affect perceived psychological distress in mothers of children with ADHD. While prior experimental studies have shown that enhancing compassion can support mental health in caregivers (Navab et al., 2019; Shenaar-Golan et al., 2021; Stenz et al., 2023), most of the existing literature has been correlational, limiting conclusions about causality. Additionally, few studies have directly assessed constructs such as distress tolerance and affiliate stigma. Considering the urgent need for interventions that target psychological distress in mothers of children with ADHD, our findings are promising, as they reveal meaningful improvements in depression, anxiety and distress tolerance.

Despite its strengths, our study has several limitations. First, as an RCT the sample size was moderate, though it aligns with the sample sizes used in previous research on CFT with caregivers (Kirby et al., 2023) and exceeds those with caregivers of children with ADHD. We utilized a waitlist control group rather than an active control group, which limits comparisons with other active interventions. The nature of CFT prevents the possibility of blinding participants to the intervention. Additionally, fewer participants in the WL group completed the post-intervention measures compared to those in the intervention group. Lastly, we relied solely on self-reported measures, which, while widely used and validated for assessing psychological variables, may still have limitations. Future research should aim to replicate our findings with a larger sample, incorporate an active control group (such as mindfulness training or a relaxation program), and include biological measurements (e.g., cortisol levels, heart rate variability, and brain activity).

In conclusion, the findings of this randomized controlled trial reveal that CFT was more effective than the waitlist control in enhancing distress tolerance and reducing psychological distress in mothers of children with ADHD. However, no change was found in affiliate stigma which may be more ingrained.

Future studies involving both parents and larger sample sizes would strengthen the confidence of practitioners and researchers looking to implement compassion-based parenting strategies. Overall, based on the research outcomes, practitioners can utilize CFT to improve psychological distress outcomes in mothers of children with ADHD.

Declarations

Declaration of Generative AI and AI-assisted technologies in the writing process

During the preparation of this work, the author(s) used ChatGPT to assist in checking the grammatical structure and improving language clarity. After using this tool, the author(s) carefully reviewed and edited the content as necessary and take full responsibility for the accuracy, originality, and integrity of the final published article.

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Data availability

The data used in this research is available online and can be accessed upon request or through the designated repository.

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Figures

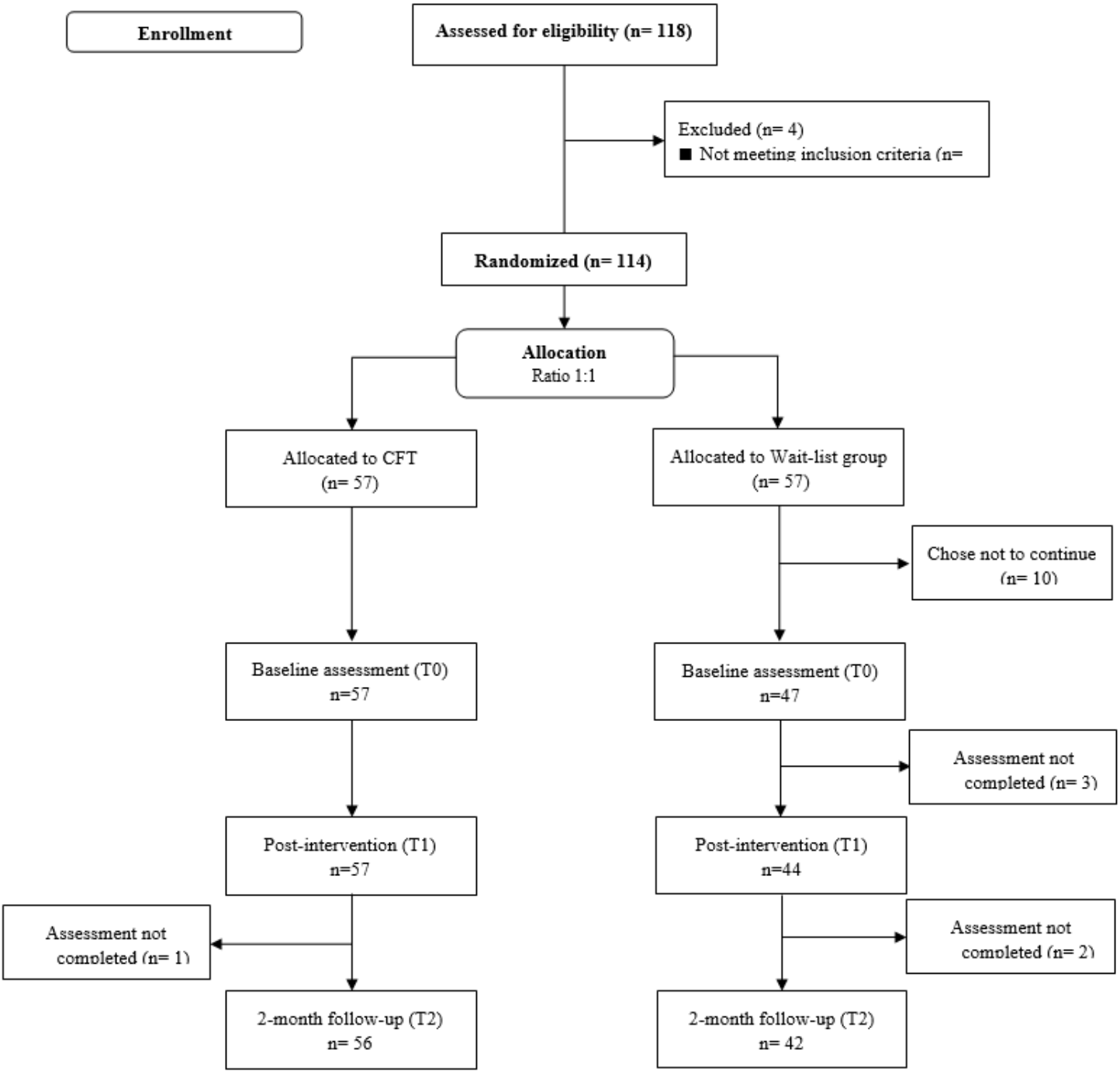


Figure 1

Flow Diagram of the Study.

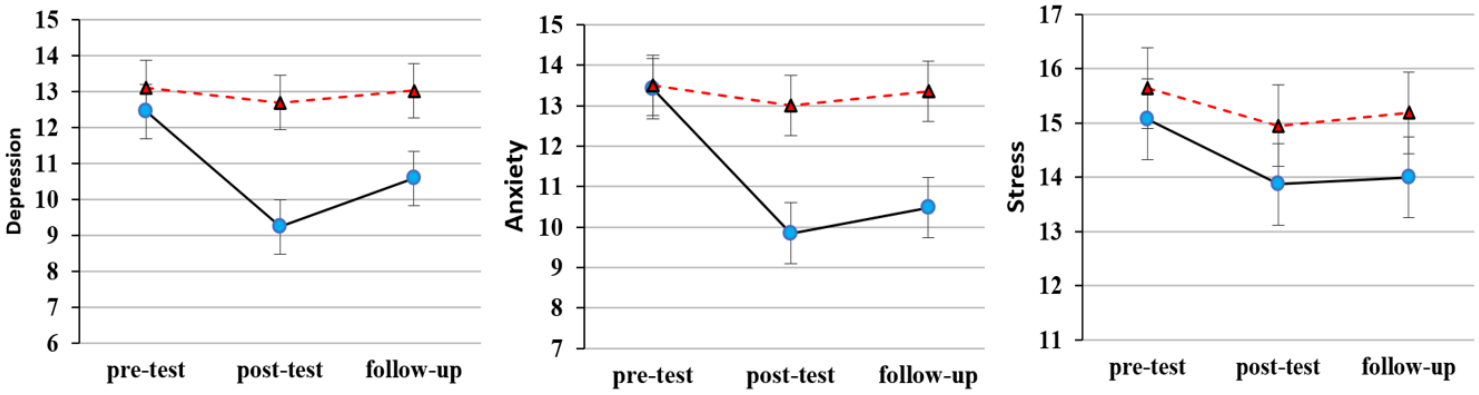


Figure 2

Line chart illustrating the changes in depression, anxiety, and stress symptoms at pre-treatment, mid-treatment, post-treatment, and at the two-month follow-up.

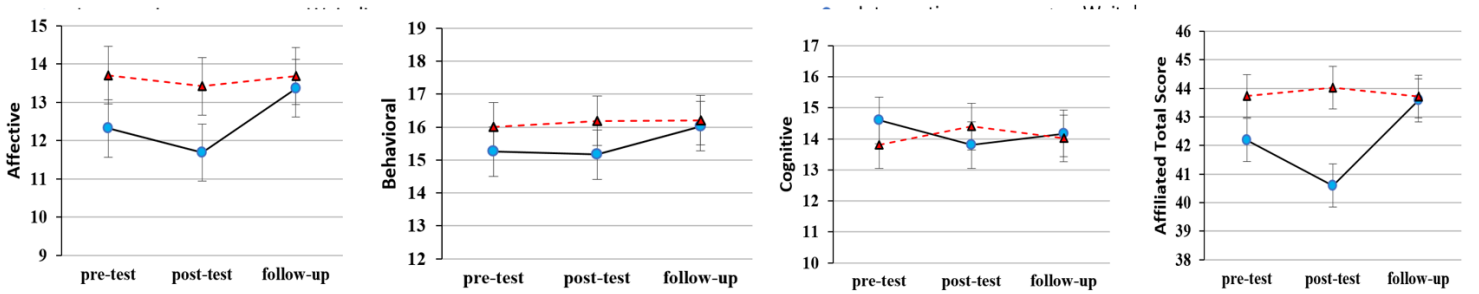


Figure 3

Line chart illustrating the changes in Affiliate Stigma (both total and subscales) at pre-treatment, mid-treatment, post-treatment, and at the two-month follow-up.

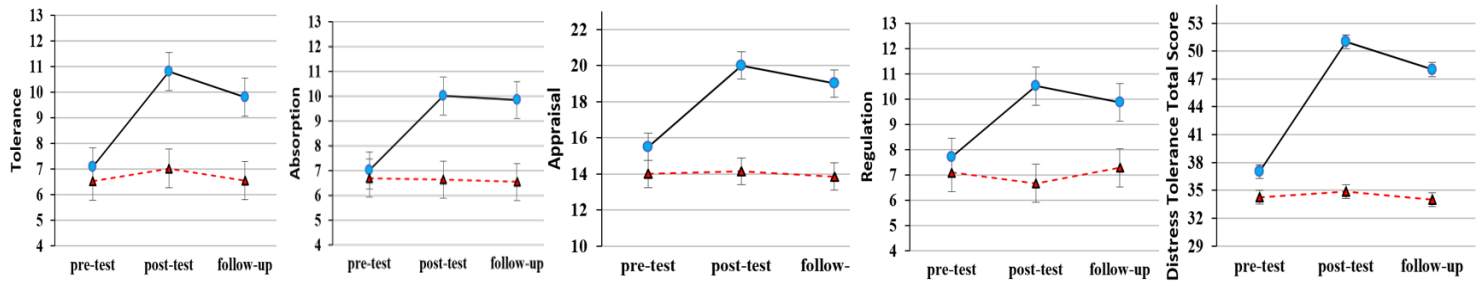


Figure 4

Line chart illustrating the changes in distress tolerance (both total and subscales) at pre-treatment, mid-treatment, post-treatment, and at the two-month follow-up.