

## Research Paper:

# The Effects of Compassion-focused Therapy on Anxiety and Depression in the Mothers of Children With Cerebral Palsy



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## ABSTRACT

**Background & Aims of the Study:** Cerebral Palsy (CP) is the most common chronic motor disability in children. CP can cause depression and anxiety in the mothers of affected children. The present study aimed to investigate the effects of Compassion-Focused Therapy (CFT) on anxiety and depression in the mothers of children with CP.

**Materials and Methods:** This was an experimental study with a pre-test, post-test and follow-up and a control group design. The study sample consisted of 40 mothers of children with CP who were selected by convenience sampling method. We randomly divided the study participants into experimental and control groups (n=20/group). The research instruments included the Beck Anxiety Inventory (BAI) and Beck Depression Inventory (BDI). The experimental group underwent eight 60-minute sessions weekly sessions of CFT. The follow-up step was performed after 45 days. The obtained data were analyzed by descriptive and inferential statistics, such as mean, standard deviation, Analysis of Covariance (ANCOVA), and Multivariate Analysis of Covariance (MANCOVA). Data analysis was performed using SPSS v. 24.

**Results:** The Mean±SD pre-test and post-test scores of anxiety and depression were measured as 28.80±9.24 and 16.25±7.40 in the experimental group and 38.80±10.27 and 28.00±5.01, respectively in the control group. The obtained results suggested that CFT effectively reduced anxiety and depression in the explored mothers of children with CP (P<0.01).

**Conclusion:** According to the present study results, CFT can be used to reduce anxiety and depression in the mothers of children with CP and accordingly improve their quality of life.

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## 1. Introduction

**C**erebral Palsy (CP) is the most common chronic motor disability in children and a global disability. CP is a neurological disease that causes non-progressive disturbance of the locomotor system due to damage to the developing brain (fetus & infant) [1]. CP is associated with sensory, perceptual, cognitive, communicative, and behavioral disorders as well as epilepsy and musculoskeletal problems. It can restrict the daily and social activities of patients and may lead to increased functional limitations as the patients' age [2]. Children with CP cannot manage their daily routines, such as eating, dressing, bathing, and moving, because of the non-progressive motor syndrome. These disabilities require long-term care beyond the needs of typically developing children [3]. Studies indicated that numerous children with CP have not had a difficult delivery, and prenatal factors play a major role in the abnormal development of the brain [4, 5]. Some of these children only present mobility impairments, whereas others also manifest learning, hearing, and vision impairments, and seizures. The state of intelligence varies depending on the location of the cerebral injury, as some of the children with CP may be talented and clever [6]. The global prevalence of CP is estimated to be 2-6 infants per thousand live births [7].

Under these circumstances, raising a child diagnosed with CP is a major challenge for parents and may greatly alter the family's lifestyle. The mother is a child's greatest teacher and educator. Besides, motherhood is generally one of the most complex experiences for any woman. Thus, experiencing motherhood concerning a disabled child would be far more difficult and associated with multiple unpleasant feelings for the mother. In general, the mothers of disabled children are more prone to engaging in the child's behavioral problems than their fathers [8]. Being a mother to disabled children is physically and emotionally frustrating and stressful. The mothers who are unexpectedly informed of their child's affliction with CP may experience different and contradictory feelings, such as shock, hope, worthlessness, child acceptance, and difficulty in anxiety control [9].

Anxiety is a condition that affects every individual to varying degrees throughout their lives, as everyone has experienced it at least once in their lifetime [10, 11]. As one of the most common mental health disorders, anxiety is a distressing condition that results from the apprehension of an unknown threat and disrupts an individual's behavioral continuity [12]. Negative thoughts, emotions, and feelings cause numerous biopsychologi-

cal illnesses and anxiety. Anxiety is expressed by repeated experiences of one's thoughts about potentially negative events [13]. Anxiety is painful mental distress caused by the prediction of a possible future threat or illness. Anxiety is usually associated with fear, sadness, helplessness, and difficulty with finding a solution to an anticipated and seemingly unsolvable problem [14, 15]. Anxious individuals are often unaware of the cause of anxiety and whether this feeling is caused by a sense of internal insecurity or external sources of fear [16]. More reasonable forms of anxiety may be characterized by depression, extreme sensitivity and anger, restlessness, insomnia, and sleep disorders, whereas its severe forms are associated with guilt [17]. Various studies reported a high level of anxiety in the mothers of children with CP and other disabilities [18-21].

Anxiety could gradually lead to depression in these women. Depression is the oldest known disorder, the most common mental health condition, and a natural human reaction to environmental pressures [22]. There is a strong association between depression and suicide; depressive disorders contribute to 0.80 out of 0.95 mental health disorders detectable in individuals who commit suicide or have attempted it [23]. Disappointment with the child's treatment is the main depression-related factor found in mothers, and plays a major role in ideation, attempting, and completing suicide [24]. Akil et al. [25] suggested that frustration may be a predictor of depression. In depression, the subject encounters symptoms, such as low mood with loss of energy and interest, feeling of guilt, poor concentration, anorexia, and ideation of death and suicide [26].

Various theoretical models and interventions have been developed based on the cognitive pattern for treating anxiety, as the most prevalent mental health disorder. Most cognitive therapy methods are relatively effective in controlling or reducing anxiety; however, the disadvantages of these methods have led to the development of alternative theoretical models [27]. Studies also indicated that Compassion-Focused Therapy (CFT) can be a strong predictor of mental health. Other studies investigated the beneficial effects of compassion cultivation, as internal compassion cultivation has turned into a major therapeutic focus and goal [28]. Additionally, self-compassion has recently received great attention from researchers as a strategy to reduce mental health disorders. CFT is a multidimensional therapeutic intervention, i.e., that has been developed based on remarkable advances in Acceptance and Commitment Therapy (ACT), Cognitive-Behavioral Therapy (CBT), Dialectical Behavior Therapy (DBT), Emotion-Focused Therapy (EFT), Ra-

tional Emotive Behavior Therapy (REBT), and multiple other approaches [16]. CFT aims to reduce components, such as shame, self-criticism, and self-compassion [29]. Any CFT intervention is based on approval, support, and kindness. Moreover, self-compassion is negatively associated with self-criticism, depression, anxiety, ruminating thoughts, and thought suppression; however, it is positively correlated with life satisfaction and social skills [30]. Compassion is an essential human force that includes kindness, fair judgment, and interconnected emotions, as well as helping others to find hope and giving meaning to life in the face of challenges. Compassion also means to simply attract kindness towards oneself and to be influenced by the suffering of others [31]. Numerous studies highlighted the effectiveness of CFT in reducing anxiety, depression, and suicidal ideation in women with vitiligo [32]; the symptoms of depression, anxiety, stress, and weight self-efficacy in female students [33]; stress, anxiety, depression, and the symptoms of patients with irritable bowel syndrome [34]; depression, anxiety, and emotion regulation in patients with coronary heart disease [35]; anxiety in breadwinning women, as well as anxiety and depression in patients [36, 37].

Considering the adverse effects of the presence of a child with CP in a family on anxiety among family members, especially mothers, and its consequences, it is necessary to develop appropriate interventions to reduce anxiety and depression levels in these mothers and improve their families' quality of life. No international or domestic study has investigated all research variables in the mothers of children with CP. Given the importance and prevalence of depression among families and the lack of research in this regard, it was sought to examine it in the present study. The results of this study are considered as a fundamental effort to improve the psychological condition of these mothers. Accordingly, this study aimed to investigate the effects of CFT on anxiety and depression in the mothers of children with CP.

## 2. Materials and Methods

This was an experimental study with a pre-test, post-test and follow-up and a control group design. The statistical population included all mothers of children with CP who were referred to Bahar Rehabilitation Center in Shiraz City, Iran, in 2020. Using the convenience sampling method, we selected 40 children with CP who were willing to participate in the study. The research participants were randomly assigned to the experimental and control groups (n=20/group). The inclusion criteria were voluntary attendance in the study, obtaining a score above the mean value on the anxiety questionnaire, >5

years of experience of having a child with CP, having at least a middle school educational level, no mental health illnesses, not receiving simultaneous psychological or pharmaceutical treatment, and no substance use disorder. The exclusion criteria were absence from >2 treatment sessions and reluctance to continue the treatment process. The experimental group received eight 60-minute weekly sessions of CFT; however, the control group received no intervention. After the training sessions, a post-test was performed in the experimental and control groups. Additionally, the follow-up was conducted in the study groups after 45 days. At the end of the study, to observe ethical considerations, the control group received a course of CFT. For ethical considerations, the researchers received written informed consent forms from the study participants for participation in the research. The following instruments were employed in the present study to collect the necessary data.

**Beck Anxiety Inventory (BAI):** The BAI, consists of 21 self-reported items, i.e., scored based on a four-point Likert-type scale (0-3). The obtained scores range from 0 to 63. Beck et al. reported that the internal consistency of this scale was equal to 0.93 and its test-retest reliability coefficient after a one-week pilot study was obtained to be 0.75. Kaviani and Mousavi [38] also reported that validity (0.72), reliability (0.82), and internal consistency (0.92) of this scale were acceptable. They also stated a score of 0-11, 12-18, 19-26, 27-36, and 37-63 respectively for the BAI indicates asymptomatic, mild, moderate, severe, and very severe levels of anxiety. They validated this questionnaire in Iran and reported its reliability to be 0.82 [38]. In the present study, Cronbach's alpha coefficient was calculated as 0.81 for the questionnaire.

**Beck Depression Inventory (BDI):** The BDI is the revised form of the Beck Depression Inventory developed in 1996 to measure the severity of depressive symptoms. The Beck Depression Inventory is among the most widely used psychiatric diagnostic tools for depressive disorders. The study used the short form of the Beck Depression Inventory with 13 items (BDI-13). The 4 answer choices of each item are scored from 0 to 3 with the total score ranging from 0 to 39. Hamidi et al. [39] reported an alpha Cronbach coefficient of 0.92 for the questionnaire. In the present study, Cronbach's alpha coefficient was computed as 0.82 for the questionnaire.

CFT sessions were planned based on Gilbert's CFT model [40]. This intervention was performed in the experimental group in eight 60-minute weekly sessions. Table 1 provides a summary of CFT sessions.

The obtained data were analyzed by descriptive and inferential statistics, such as mean, standard deviation, minimum and maximum scores, Analysis of Covariance (ANCOVA), and Multivariate Analysis of Covariance (MANCOVA) in SPSS v. 24.

### 3. Results

According to the descriptive statistics, the mean age of the experimental and control groups was 34.74 and 34.07 years, in sequence. In the experimental group, 5(25%) subjects had a middle school degree, 11(55%) individuals had a high school education, and 4(20%) samples had a college education. Additionally, in the control group, 7(35%) subjects had a middle school degree, 8(40%) individuals had a high school education, and 5(25%) units had a college education.

Table 2 presents the Mean±SD values of the studied variable in the experimental and control groups at the pre-test, post-test, and follow-up stages. The Mean±SD post-test score of the anxiety in experimental and control groups was equal to 28.80±9.24, and 38.80±10.27, respectively. Furthermore, the Mean±SD post-test value of depression in experimental and control groups was computed as 16.25±7.40 and 28.00±5.01, respectively.

Before analyzing the data to test the research hypotheses, the underlying assumptions of ANCOVA were examined. To test the normality of the collected data respecting the significance of the Z-value, the Kolmogorov-Smirnov test was employed. The relevant data revealed that anxiety ( $Z=0.141$ ;  $P=0.200$ ) and depression ( $Z=0.163$ ;  $P=0.171$ ) had a normal distribution. To test the homogeneity of variances (for the same variances of the experimental & control groups), Levene's test was used ( $F=0.289$ ;  $P=0.750$ ). The ANOVA was also used to examine the homogeneity of the regression line slope for the anxiety ( $F=2.612$ ;  $P=0.318$ ). According to the test results, ANCOVA could be used. MANCOVA was used to compare the experimental and control groups concerning post-test scores to determine the effect of CFT on anxiety and depression in the study subjects. According to Table 3, all 4 relevant multivariate statistics (Pillai's trace, Wilk's lambda effect, Hotelling's trace, and Roy's largest root) were significant for the study variables in the post-test and follow-up phases. There was a significant difference between the experimental and control groups regarding at least one of the examined variables ( $P<0.01$ ).

Table 4 presents the ANCOVA results of dependent variables for post-test and follow-up scores. The F-statistics of the analysis of covariance of the dependent

variables indicated a significant difference between the research groups group concerning anxiety and depression in the post-test and follow-up phases.

### 4. Discussion

The present study investigated the effects of CFT on anxiety and depression in the mothers of children with CP. The obtained findings suggested that CFT effectively reduced depression in the post-test and follow-up phases among the study subjects. This finding was consistent with those of Ahmadi et al. [32], Taherpour et al. [33], Seyyedjafari et al. [34], Adibizadeh, and Sajjadian [35], Takahashi et al. [36], as well as Steindl and associates [37]. In other words, increased compassion acts as a barrier against negative events. Individuals with high compassion under assess themselves less, are less hard on themselves, and cope with problems and negative life events more easily. Their reactions to problems are mainly based on reality because their judgments are neither self-defensive nor self-critical and self-blaming. Studies indicated that individuals with high self-compassion are kinder to themselves and more responsible for their problems, and cope with events more easily; consequently, they experience lower anxiety levels [35, 36].

One of the hallmarks of human commonalities is to accept that everyone has flaws and mistakes and sometimes may engage in unhealthy behaviors. In contrast to the increasing assimilation, consciousness leads to a balanced and clear awareness of present experiences that prevents the painful aspects of life from being overlooked without constantly preoccupying the mind. When encountering painful life events, individuals unconsciously and negatively judge and evaluate themselves, instead of coping with issues based on a more vigilant and realistic approach. In general, CFT protects individuals against negative states and strengthens positive emotional states by motivating compassion through compassion techniques, identifying self-compassionate thoughts, and eliminating barriers to self-compassion. As compassion improves, individuals are further motivated to cope with and manipulate negative thoughts. Mediation exercises decrease cortisol levels and increase heart rate variability [33]. Subsequently, such exercises can be helpful to maintain and increase calm when managing stressful situations. The extensive negative effects of diseases on social and family relationships as well as mental preoccupations can make individuals anxious.

The present study data also suggested that CFT was effective in reducing depression in the explored mothers of children with CP in the post-test and follow-up

**Table 1.** A summary of CFT sessions

Sessions	Content
First	The introduction of participants; the introduction of group rules and regulations; The explanation of research variables; the introduction of CFT.
Second	The explanation of compassion: what compassion is and how CFT can help us to overcome problems.
Third	Teaching compassion and empathy: training in how to create more diverse emotions concerning others' issues to increase care for and attention to health, reflecting on being compassionate to others, attention to and focus on compassion, compassionate thinking, compassionate behaviors, and compassionate imagery.
Fourth	Forgiveness training, training in how to accept mistakes and forgive ourselves for mistakes to facilitate changes, increasing warmth and energy, mindfulness, training in how to accept issues and problems to accept upcoming changes and then gain the ability to withstand challenging conditions due to the changing nature of life and face different challenges, wisdom and power, intimacy, and no judgment.
Fifth	Training in the development of valuable and sublime emotions: training individuals in how to create valuable emotions in themselves to appropriately and effectively cope with the environment, practicing consciousness and mindfulness, as well as the assessment of advantages and disadvantages of the beliefs associated with useless emotions.
Sixth	Training in responsibility as the main component of self-compassion: training the participants in how to think self-critically to develop newer and more effective views and feelings, practicing the color of compassion task, the sound and image of compassion, and compassion-based correspondence.
Seventh	Compassionate correspondence, practicing anger and compassion, and fear of compassion, as well as preparation for terminating the group.
Eighth	Reviewing, summarization, group termination, and post-test conduction.

phases. This finding was consistent with those of Adibi-zadeh and Sajjadian [35], Takahashi et al. [36], Steindl et al. [37], as well as Farokhzadian and Mirderekvand [41]. In other words, depression exacerbates mothers' inability to regulate their emotions. Following depression and the lack of emotion regulation, mothers gradually become frustrated and feel depressed. A combination of these changes intensifies each other in a vicious circle and creates problems for the mothers. Compassionate subjects experience less depression and anxiety than others; a supportive attitude reduces depression and increases their satisfaction with life [41]. Therefore, the central therapeutic technique of CFT is compassionate mind training to develop compassion for self and others. In

this technique, compassion skills and characteristics are taught to the clients. Compassionate mind training helps clients to modify their problematic cognitive-emotional patterns. With changes made in destructive mental patterns, mothers become kinder to themselves and others and feel less sensitive to shortcomings and adversities. These alternations bring peace of mind and reduce anxiety and worry in mothers. Furthermore, teaching therapeutic compassion-focused skills to mothers leads to kindness and compassion for past hardships, sufferings, and unpleasant experiences. Accordingly, they become kinder to themselves, less likely to blame themselves, and have fewer negative thoughts, which in turn, reduces depression in them.

**Table 2.** Mean±SD of the research variables in the pre-test, post-test, and follow-up

Variables	Phase	Mean±SD	
		CFT	Control
Anxiety	Pre-test	46.95±5.53	44.70±6.12
	Post-test	28.80±9.24	38.80±10.27
	Follow-up	29.85±2.15	41.70±4.87
Depression	Pre-test	29.05±2.96	26.60±4.30
	Post-test	16.25±7.40	28.00±5.01
	Follow-up	13.30±2.07	30.35±3.73



**Table 3.** MANCOVA data in the post-test and follow-up phases

Test	Phases	Value	df	Error df	F	P	$\eta^2$
Pillais trace	Post-test	0.497	2	35	17.290	0.0001	0.497
	Follow-up	0.916	2	35	191.011	0.0001	0.916
Wilks lambda	Post-test	0.503	2	35	17.290	0.0001	0.497
	Follow-up	0.084	2	35	191.011	0.0001	0.916
Hotelling's trace	Post-test	0.988	2	35	17.290	0.0001	0.497
	Follow-up	10.915	2	35	191.011	0.0001	0.916
Roy's largest root	Post-test	0.988	2	35	17.290	0.0001	0.497
	Follow-up	10.915	2	35	191.011	0.0001	0.916

df: Degrees of freedom; F: F-distribution;  $\eta^2$ : Eta-squared.



Depressive symptoms are associated with higher levels of shame and self-criticism and lower levels of self-compassion [42]. CFT is developed to help those who experience high levels of shame and self-criticism. Self-Criticism involves self-condemning thoughts. Depressed individuals experience high levels of self-criticism and rumination; thus, this therapy is expected to work for depressed and divorced women with self-critical and depressive symptoms [43]. Besides, mindfulness is the major factor and element in CFT. Compassionate thinking, behavior, and imagery are produced and implemented through mindfulness. Mindfulness teaches individuals how to pay attention to their inner and outer worlds with curiosity and kindness without judgment [44]. Besides, mindfulness helps individuals become aware of their ruminative thoughts and the damage they cause to better understand and break down these cycles of rumination and self-critical thoughts. Much of the negative emotions experienced by individuals come from rumination following negative experiences. The components of mindfulness reduce negative emotions (anxiety & depression) in individ-

uals by reducing their rumination. Compassion acts as a barrier against the negative consequences of divorce [45].

### 5. Conclusion

CFT teaches individuals to use mediation techniques; establish a decentralized relationship with their thoughts by coping with and accepting them as unreal ideas; defuse negative thoughts and feelings; increase their awareness of their thoughts and body senses by raising their cognition and experience through focusing on breathing; modify their relationship with negative thoughts, and moderate their arousal symptoms. In these interventions, individuals accept their emotions but fail to seek immediate relief from or avoidance of negative emotions. In other words, individuals cannot change the conditions of their lives; however, they can modify the intensity of their emotional reactions to stressful situations and events of life. When facing their emotions, individuals find out that emotions are tolerable and they can cope with negative emotions and reduce anxiety and depression. Based on the study findings, counseling

**Table 4.** The results of univariate ANCOVA on the post-test and follow-up scores of the explored variables

Dependent Variables	Phases	SS	df	MS	F	P	$\eta_p^2$	Statistical Power
Anxiety	Post-test	1009.162	1	1009.162	17.424	0.0001	0.329	0.98
	Follow-up	1005.508	1	1005.508	81.362	0.0001	0.693	1.00
Depression	Post-test	1367.004	1	1367.004	34.034	0.0001	0.486	1.00
	Follow-up	2591.558	1	2591.558	292.390	0.0001	0.890	1.00

SS: Sum of squares; df: Degrees of freedom; MS: Mean square; F: F-distribution;  $\eta^2$ : Eta-Squared.



centers are recommended to apply CFT for treating such mothers. A main advantage of the present study was exploring psychological characteristics in the mothers of children with CP. The present study data indicated the attention to psychotherapy and support of the mothers of children with CP.

All studied samples were of the same gender and from only one city, i.e., Shiraz; thus, the study findings should be cautiously generalized to other populations. Similar studies are recommended to be conducted on larger sample sizes and in other cities or on the fathers of children with CP. In future research, to evaluate the continuity of the treatment effect, it is suggested that follow-up evaluation be performed longer. Considering the significant effects of CFT on anxiety and depression reduction, counselors, clinical psychologists, and specialists are recommended to pay closer attention to this intervention. By helping clients to take advantage of these therapies, there is hope that they can better control their stressful stimuli, i.e., mostly mental; accordingly, they can reduce their anxiety and depression level themselves.

## Ethical Considerations

### Compliance with ethical guidelines

The participants willingly completed the questionnaires and signed written informed consent. The Ethics Review Board of Islamic Azad University, Ahvaz Branch, approved the present study (Code: 1064819893917).

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### Authors' contributions

Conceptualization, supervision: Negin Khoshvaght, Farah Naderi; Methodology: Negin Khoshvaght, Farah Naderi, Sahar Safarzadeh; Investigation, writing – review & editing: All authors. Writing – original draft: Negin Khoshvaght, Farah Naderi; Investigation, Marjan Alizadeh; Funding acquisition, resources: Negin Khoshvaght.

### Conflict of interest

The authors declared no conflicts of interest.

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