



The Effectiveness of Compassion-Focused Therapy Method on Social Support, Hope Levels, and Caregiver Burden in Mothers of Children with Down Syndrome

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Abstract

Background: The use of appropriate non-pharmacological therapies can help improve the mental health and increase emotional resilience of mothers of children with Down syndrome (DNS).

Objectives: The aim of the present study was to evaluate the effectiveness of compassion-focused therapy (CFT) on social support, hope level, and caregiving burden of mothers of children with DNS.

Methods: The present study was a quasi-experimental study with a pre-test, post-test, and follow-up design, conducted by two groups (experimental and control). The sample size was determined to be 30, and 15 people were selected for each study group by simple random sampling. The CFT program was held for the experimental group during eight one-and-a-half hour sessions, and the sessions were held weekly. After the sessions were completed, information related to the variables of social support, hope, and caregiving distress was collected using relevant questionnaires. Pre-test, post-test, and follow-up were conducted for both experimental and control groups. Finally, after collecting the raw findings, SPSS.ver.22 software was used for descriptive expression and statistical analysis.

Results: The findings showed that the mean scores of social support and hope in the post-test and follow-up stages for the CFT group were significantly higher than those of the control group. In addition, the mean score of caregiving distress in the post-test and follow-up stages for the CFT group was significantly lower than that of the control group.

Conclusions: The findings show that the CFT method has a positive effect on social support, hope, and caregiving distress of mothers with DNS children. Therefore, it can be concluded that the CFT method can help improve the psychological state of mothers with DNS children.

Keywords: Down Syndrome, Children, Caregiving Suffering, Mothers, Compassion-Focused Therapy

1. Background

Down syndrome (DNS) is a chromosomal disorder caused by the presence of an extra copy of chromosome 21. This condition is also known as trisomy 21. Normally, humans have 46 chromosomes arranged in 23 pairs. However, in people with DNS, instead of two copies of chromosome 21, there are three copies. This genetic change results in specific physical and mental characteristics in people with DNS (1). The overall incidence of DNS is one in 800 live births, but this rate increases to one in 40 live births in mothers over 40

years of age (2). The risk is also increased if the father is over 45 years of age (3). Characteristics of the disorder include a broad skull, skin folds over the eyes, a broad bridge of the nose, a large tongue, short and wide hands and fingers, and short stature. In addition, congenital heart disease is common among sufferers, and their average consciousness is 50. Many individuals with DNS survive into adulthood if they do not have major heart disease (1).

This disorder can lead to cognitive, motor, and social impairments that require special support from the

family (4). For mothers of children with DNS, caring for their child poses many psychological and social challenges. Mothers of children with Down syndrome face many challenges in caring for their child. These challenges include specific medical, psychological, and social needs that may cause severe psychological stress for mothers. These mothers often face problems such as anxiety, depression, and stress caused by long-term care, which can harm their quality of life (5, 6). In this regard, helping these mothers to reduce stress and improve their quality of life through non-pharmacological treatment methods is very important.

Compassion-focused therapy (CFT) is a third-wave behavioral psychotherapy that focuses on increasing a person's ability to have compassion for themselves and others. This therapy combines cognitive-behavioral approaches, evolutionary psychology, neuroscience, and mindfulness. The main goal of CFT is to help people manage feelings of shame, self-criticism, and negative emotions by cultivating a kind and accepting attitude toward themselves and others. Mindfulness exercises, compassionate imagery, positive self-talk, and emotion regulation techniques are key methods in this approach that help improve mental health and increase emotional resilience (7, 8).

One of the benefits of CFT in patients with cognitive disorders is the reduction of stress and anxiety, and it helps people to deal with their problems with more kindness and understanding, which leads to improved mental health (9). Also, focusing on self-compassion and accepting limitations can help increase concentration, memory, and other cognitive abilities, and lead to improved quality of life for patients (10, 11). By creating a sense of hope and purpose in patients, CFT increases their motivation to cooperate in treatment and perform daily activities (7, 12). Compassion-focused therapy is often used as a complement to other treatment approaches, such as medication and cognitive-behavioral therapies, and has shown promising results in improving symptoms of cognitive disorders (13, 14).

Various studies have previously been conducted on the effectiveness of CFT on reducing anxiety, social support, and increasing life expectancy in mothers of aggressive, anxious, intellectual and developmental disorders, and movement disorders (15-17). Based on our search, no specific study has been conducted to assess the effectiveness of CFT on the quality of life and perceived suffering tolerance of mothers of DNS children.

2. Objectives

Considering the above, the use of non-pharmacological treatment methods to control the complications and negative consequences of living with sick children is of great importance for parents. The aim of the present study was to evaluate the effectiveness of CFT on social support, level of hope, and caregiving burden of mothers of children with DNS.

3. Methods

3.1. Sampling

The present study was a quasi-experimental study with a pre-test, post-test, and follow-up design, conducted by two groups (experimental and control). The statistical population of this study included all mothers of children with DS who had a medical record in the rehabilitation section of the Welfare Department of Qaem-Shahr, Iran. The sample size was determined by the Power-G software, which was equal to 30 people, considering the size of the statistical population, the desired alpha, the effect measurement, and the inclusion and exclusion criteria. Finally, 15 people were selected for each of the study groups by simple random sampling.

3.2. Study Inclusion and Exclusion Criteria

To select mothers participating in the study, inclusion and exclusion criteria were considered, which are summarized in Table 1.

3.3. Data collection tools

3.3.1. Multidimensional Perceived Social Support Questionnaire (MSPSS)

The MSPSS was designed by Zimet et al. and consists of a 12-item questionnaire with three subscales: Friends, family, and others. The questions are scored on a seven-point Likert scale ranging from "strongly disagree" (= 1) to "strongly agree" (= 7) (18). The reliability of this questionnaire was reported by Babaieamiri using Cronbach's alpha as 0.88 (19). Its convergent validity was also reported as -0.34 when correlated with the Maslach Burnout Inventory (MBI) (20).

3.3.2. Adult Hope Scale (AHS)

Table 1. The Inclusion and Exclusion Criteria for Samples Selection

Inclusion Criteria	Exclusion Criteria
There must be personal consent to participate in the research.	Two missed sessions during the treatment program.
Mothers with DNS children.	The presence of events such as divorce, acute illness, death of loved ones, or any other stressful event that could significantly affect the results of the study.
The mother's age is less than 60 years.	Attending other psychological therapy sessions.
The mother should not be the head of the family.	
The mother has not participated in a CFT treatment course in the last two years.	
No history of personality disorder (by taking a history).	

The AHS was developed by Snyder et al. and consists of 12 questions, each of which is rated on a five-point Likert scale from strongly disagree (=1) to strongly agree (= 5) (21). This questionnaire assesses the life expectancy of individuals in two components: Agency thinking and pathways and is designed for individuals aged 15 years and older. Kermani et al. showed that the AHS has good validity and reliability for the Iranian population, and the overall score of this questionnaire ranges from 8 to 64. In the aforementioned study, the validity of the instrument was assessed at an appropriate level by confirmatory factor analysis, and its reliability coefficient was estimated to be 0.86 and 0.81, respectively, using Cronbach's alpha and test-retest methods (22).

3.3.3. Caregiver Burden Scale (CBS)

The CBS was designed by Elmstahl et al. and consists of 22 items and 5 domains. The domains include general distress, loneliness, hopelessness, emotional involvement, and environment. The scoring system is based on the Likert method (1 = not at all, 2 = rarely, 3 = occasionally, 4 = often), with the highest score indicating the greatest caregiving distress (23). In the study of Abadian and Ariana, the validity and reliability of the questionnaire were reported to be at an acceptable level, with its reliability coefficient expressed by Cronbach's alpha method as 0.81 (24).

3.4. Implementation of the Compassion-Focused Therapy

The CFT program for the experimental group was conducted over eight one-and-a-half hour sessions, each session being held for one week. After the sessions were completed, information on the variables of social support, hope, and caregiving distress was collected using the relevant questionnaires. For both experimental and control groups, pre-test, post-test, and

follow-up phases were conducted. The pre-test phase was conducted before the CFT, the post-test phase was conducted immediately after the CFT, and the follow-up phase was conducted one month after the CFT.

3.5. Data Analysis

Finally, the study findings were analyzed with SPSS.ver.22 software, which used descriptive statistics indicators including mean, standard deviation (S.D), frequency distribution tables, and graphs to describe the data. Also, to test the hypotheses, the normality of the data distribution shape and the homogeneity of variances and other assumptions were checked first. Then, using analysis of variance with repeated measures and Bonferroni and Tukey Post HOC Tests, the findings were analyzed at a significance level ($\alpha = 0.05$). In addition, the chi-square test at a significance level ($\alpha = 0.05$) was used to compare demographic characteristics among the study groups.

4. Results

The findings of the present study showed that all demographic characteristics did not differ significantly between the two study groups (Table 2). Comparison of the mean scores related to the categories of social support, hope, and caregiving distress for the control groups showed that the pre-test & post-test, pre-test & follow-up, and post-test & follow-up stages did not have a significant difference ($P > 0.05$) (Tables 3 - 5). While, for the experimental group, comparison of the pre-test & post-test and pre-test & follow-up stages for the above-mentioned variables showed that there was a significant difference, but no significant difference was observed for the post-test & follow-up ($P < 0.05$) but no significant difference was observed for the post-test & follow-up ($P > 0.05$) (Tables 3 - 5). The findings showed that the mean scores of social support and hope in the post-test and

Table 2. Demographic Characteristics of Study Participants

Variables	Test Group (CFT); No. (%)	Control Group; No. (%)	P-Value
Age (y)			0.887
25 - 45	7 (46.7)	5 (33.3)	
46 - 60	8 (53.3)	10 (66.7)	
Job			0.912
Employed	6 (40)	5 (33.3)	
Unemployed	9 (60)	10 (66.7)	
Educational level			0.695
Sub-diploma and diploma	3 (20)	6 (40)	40
Bachelor's degree and above	12 (80)	9 (60)	60

Table 3. Pre-test, Post-test, and Follow-up Scores for the Social Support Category in the Experimental and Control Groups

Dependent Variables and Study Groups	Pre-test		Post-test		Follow-up	
	Mean	SD	Mean	SD	Mean	SD
Friends						
CFT	6.47	1.74	11.24	4.09	11.30	2.84
Control	6.41	1.98	6.55	1.75	6.62	1.74
Family						
CFT	7.58	1.98	11.52	2.83	11.76	3.02
Control	7.49	1.80	7.59	1.76	7.65	1.61
Others						
CFT	6.31	0.91	10.20	4.86	10.42	4.84
Control	6.20	0.85	6.52	1.41	6.59	1.65
Social support						
CFT	20.36	2.74	32.97	8.50	33.48	7.72
Control	20.10	2.17	20.66	3.26	20.86	2.56

Abbreviations: CFT, compassion-focused therapy; SD, standard deviation.

follow-up stages for the experimental group (CFT) were significantly higher than the control group. In addition, the mean caregiving distress score in the post-test and follow-up stages for the experimental group (CFT) was significantly lower than that of the control group (Tables 3 - 5).

5. Discussion

The findings of the present study showed that the mean score related to the categories of social support, hope, and caregiving distress for the control groups showed that the pre-test & post-test, pre-test & follow-up, and post-test & follow-up stages did not have a significant difference. While, for the experimental group, the comparison of the pre-test & post-test and pre-test & follow-up stages for the above-mentioned variables showed that there was a significant difference, but no significant difference was observed for the post-

test & follow-up. The findings showed that the mean scores of social support and hope in the post-test and follow-up stages for the experimental group (CFT) were significantly higher than the control group. In addition, the mean score of caregiving distress in the post-test and follow-up stages for the experimental group was significantly lower than the control group. The findings show that the CFT method has a significant effect on social support, hope, and caregiving distress of mothers with children with DNS.

The results of this study provide valuable information about the effectiveness of each of these treatment methods in improving the psychological state of mothers and can be used as a reference for similar clinical interventions in other settings. The findings of this study showed that the intervention had a statistically significant effect on pre-test and post-test scores, but no significant difference was observed

Table 4. Pre-test, Post-test, and Follow-up Scores for the Hope Category in the Experimental and Control Groups

Dependent Variables and Study Groups	Pre-test		Post-test		Follow-up	
	Mean	SD	Mean	SD	Mean	SD
Agency thinking						
CFT	7.54	0.83	10.10	1.70	10.16	1.52
Control	7.57	0.85	7.55	0.81	7.52	0.77
Pathways thinking						
CFT	7.82	0.45	10.18	2.22	10.27	2.21
Control	7.79	0.50	7.82	0.67	7.89	0.50
Hope						
CFT	15.36	1.07	20.28	2.58	20.43	2.37
Control	15.37	0.94	15.37	1.01	15.42	0.98

Abbreviations: CFT, compassion-focused therapy; SD, standard deviation.

between post-test and follow-up, indicating the stability of the intervention effect. This result was obtained for the total score of the social support, hope, and caregiving distress scales and, in addition, for each of the subscales of social support (friends, family, and others), hope (agency thinking and strategic thinking), and caregiving distress (general stress, loneliness, hopelessness, emotional involvement, and environment).

In explaining the results, it can be said that CFT is based on the concepts of evolutionary psychology, neuroscience, and attachment theory and aims to increase compassion for oneself and others. This therapy emphasizes that by cultivating a sense of compassion, individuals can reduce negative emotions such as self-criticism and shame and improve their psychological well-being (25). Several studies have shown that CFT is effective in reducing stress and anxiety, increasing mental health, and improving social relationships (7). In particular, studies have shown that this therapy is very beneficial for reducing caregiving stress in parents of children with developmental disorders (26). Compassion-focused therapy has three emotion regulation systems, including the threat system, the motivation system, and the relaxation system. In people with anxiety and depression, the threat system is often overactive and the relaxation system is less active. Compassion-focused therapy attempts to increase the activity of the relaxation system through compassion-based exercises and help individuals distance themselves from excessive self-criticism and experience a greater sense of security (27). Also, research has shown that CFT is highly effective in

reducing symptoms associated with social anxiety, depression, and stress related to the caregiving role (28).

Similar to the present study, several other studies have been conducted that have found similar results. Carvalho et al. evaluated the effectiveness of CFT on chronic illnesses, and found that this intervention reduced psychological distress, improved quality of life, and increased emotional regulation. In addition, CFT significantly improved self-reported distress and reduced feelings of shame (29). Nikonejad et al. reported that CFT reduced factors such as anger, depression, and anxiety, as well as increased positive affect in women with multiple sclerosis (30). Mousavi et al. found that CFT increased social adjustment and reduced marital conflict in women with depression (31). Gilbert et al. showed that some people are afraid of receiving and expressing compassion for themselves and others, and this fear can be associated with psychological problems such as depression and anxiety. The results of the aforementioned study showed that these fears can be a barrier to accepting compassion-based treatments and that there is a need for targeted interventions to reduce them (27). Neff and McGehee showed in a study that CFT can effectively reduce self-criticism and improve quality of life (25). The findings of the present study are also consistent with this study, showing that CFT plays a significant role in reducing mothers' caregiving distress. In addition, the results of a systematic review conducted by Biber and Ellis have shown that self-compassion can play an important role in strengthening self-regulation in the field of health behaviors. The findings from the aforementioned study showed that people with higher levels of self-compassion follow healthier behaviors such as regular

Table 5. Pre-test, Post-test, and Follow-up Scores for the Category of Caregiving Distress in the Experimental and Control Groups

Dependent Variables and Study Groups	Pre-test		Post-test		Follow-up	
	Mean	SD	Mean	SD	Mean	SD
General distress						
CFT	16.06	1.40	10.36	2.17	10.23	2.28
Control	16.09	1.58	16.05	1.61	16.02	1.64
Loneliness						
CFT	10.16	1.26	4.80	1.69	4.72	1.70
Control	10.29	1.50	10.21	1.48	10.08	1.44
Hopelessness						
CFT	14.30	2.09	8.70	1.93	8.51	1.54
Control	14.60	2.15	14.38	2.40	14.25	2.48
Emotional involvement						
CFT	9.42	1.21	4.26	1.04	4.05	1.05
Control	9.59	1.31	9.49	1.36	9.45	1.50
Environment						
CFT	9.76	1.51	4.53	1.22	4.35	1.19
Control	9.98	1.57	9.86	1.77	9.76	1.81
Caregiving suffering						
CFT	59.69	6.81	32.65	4.63	31.86	4.11
Control	60.56	6.37	59.98	7.70	59.55	7.76

Abbreviations: CFT, compassion-focused therapy; SD, standard deviation.

physical activity, proper nutrition, and quitting harmful habits more consistently (31, 32). Also, the findings of the study by Kirby et al. showed that CFT can help reduce stress and distress of caregiving in parents of children with special needs (26).

5.1. Limitations

Despite the valuable results, this study also had limitations. One limitation was the use of a limited sample that only included mothers with DNS children, which may make the results not generalizable to other population groups. It is suggested that future research evaluate these interventions in different population groups, such as fathers or other caregivers. Also, in the present study, the study duration was limited to a short-term follow-up period. Future research can investigate the sustainability of treatment effects by designing long-term studies. In addition, the use of more diverse instruments to assess variables can help provide more accurate results. The results of the study were based on mothers' self-reports, which may be subject to cognitive bias or a tendency to respond in a socially desirable manner. For future studies, the use of more objective methods such as clinical assessments by experts can increase the accuracy of the results.

5.2. Conclusions

The findings show that the CFT method has a significant effect on social support, hope, and caregiving distress of mothers with Down syndrome children. Therefore, it can be concluded that the CFT method can help improve the psychological state of mothers with DNS children. These treatment methods have their own strengths and weaknesses and can be used as a complement to meet the different needs of clients. Therefore, it is suggested that in clinical interventions, the specific needs and characteristics of each client should be carefully examined and, based on that, the appropriate treatment method should be selected. This approach can help increase the effectiveness of interventions and improve the quality of life of patients or their companions and families.

Footnotes

Authors' Contribution: H. D. K: Participation in study design Data collection and data analysis; S. H: Participation in study design, writing and revision of original and revised manuscript; K. A. N. B: Participation

in study design, supervision, investigation, methodology, project administration, data curation.

Conflict of Interests Statement: Authors confirm that there are no relevant financial or non-financial competing interests to this study.

Data Availability: The dataset presented in the study is available on request from the corresponding author during submission or after publication.

Ethical Approval: The study protocol was approved by the Ethics Committee of Sari Branch, Islamic Azad university, Sari, Iran (ethical code: [IR.IAU.SARI.REC.1403.075](https://doi.org/10.1002/ca.22672)).

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