

The Effectiveness of Self-Compassion Based Training Program on Resilience of Mothers of Children with Type 1 Diabetes in Isfahan, Iran

Abstract

Background: Concerns about the complications of diabetes and the responsibility of constantly managing a child's blood glucose are stressful for parents, especially for mothers, and can reduce their resilience. This study aimed to investigate the effectiveness of a self-compassion-based training program on the resilience of mothers of children with type 1 diabetes. **Materials and Methods:** This is a randomized clinical trial study. The statistical population of the study consisted of all mothers of children with type 1 diabetes who were being treated at the Isfahan Endocrine and Metabolism Research Centre, Iran. The study samples were recruited conveniently, 64 of whom were randomly divided into two groups (compassion training program = 32; control group = 32). The intervention group participated in eight training sessions. Data were analyzed using *t*-test, and Analysis of Covariance (ANCOVA) tests for between-group comparisons of dependent variables. **Results:** There was no significant difference between the mean scores of resilience before intervention ($p > 0.05$). Mean scores of resilience in the intervention group were significantly higher than the control group immediately ($F_{1,60} = 9.726$, $p = 0.003$) and 1 month after intervention ($F_{1,60} = 13.146$, $p = 0.001$). **Conclusions:** It may be worthwhile to suggest compassion-based training program for mothers of children with type 1 diabetes to improve their resilience.

Keywords: *Self-Compassion, resilience, diabetes mellitus, type 1*

Introduction

Diabetes is a complex metabolic disorder characterized by high blood glucose levels. Type 1 diabetes is one of the most common chronic childhood diseases.^[1] Diabetes is fundamentally unique to other chronic childhood illnesses because success in treating it requires more self-care and family responsibility, and a multidisciplinary team of health professionals working in tandem with the patient and the family.^[2-4]

Experiencing various complications of the disease and the responsibility of continuous management of the child's blood sugar for parents, especially for mothers who are more involved in child care, is stressful,^[5,6] and puts them at risk for mental disorders,^[7] family dysfunction, and poor quality of life.^[8,9]

Such challenging living conditions require tremendous adaptation. Coping strategies can reduce the negative effects of diabetes-related stress and reduce the symptoms of maternal depression by

increasing resilience.^[10,11] Stress resilience can be defined as the ability to "return" after exposure to major stressors caused by adversity.^[12,13] According to a study by Lord, Rumburg, and Jaser *et al.*,^[14] resilient families have individual strengths and positive attitudes toward children with chronic illness. They can find and develop social skills, problem-solving, creativity and perseverance, and good sense and communication skills. They can also maintain their normal feelings and behaviors, despite the stress and care for their child.^[14]

Given the positive effects of resilience on coping with stress, some studies have been conducted to examine the effect of psychological interventions such as mindfulness^[15] and planned behavior, problem-solving training^[16] to increase resilience, and coping behaviors of people to decrease care burden of families^[17] in stressful situations. Recently, compassion-based interventions have been noticed as a potentially useful strategy for

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coping with long-term health conditions. Compassion is defined as accepting unpleasant emotions, caring and being kind to oneself and others, understanding and having a non-judgmental attitude toward failures, and recognizing one's own experiences as part of the shared human condition rather than viewing them as isolating.^[18] Some studies have tried to uncover the clinical effectiveness of compassion-based interventions on clinical psychological outcomes. For example, the study results by Danely showed that compassion-based intervention could improve the resilience of care givers.^[19] Moreover, the results of Rafei and Karami's study on patients with type 2 diabetes showed that group compassion therapy could reduce anxiety, depression, and stress.^[20] The previous studies have supported the value of compassion-based interventions on some clinical outcomes regarding psychological symptom reduction; however, its effectiveness in improving the resilience of mothers of children with type 1 diabetes has not been examined. This study aimed to investigate the effectiveness of self-compassion-based training program on the resilience of mothers of children with type 1 diabetes.

Materials and Methods

This was a clinical trial study (IRCT20201019049076N1) conducted from January to September 2020. The study population comprised mothers of children with type 1 diabetes referred to the Endocrine and Metabolism Research Centre of Isfahan University of Medical Sciences (IUMS),

Iran. The sample size was calculated using the results of a previous study,^[21] in which the post-test resilience scores in the control and the intervention groups were 18.93 (5.98) and 47.40 (9.24), respectively, giving an effect size of 0.38. Considering a type I error probability of .05 and a power of 90, the total sample size required was 57 people using G-power software. Considering the potential attrition, 64 people were enrolled through a convenience sampling method and randomly allocated to the intervention and control groups by performing a simple random allocation in the SPSS software (i.e., generating two groups of 32 random numbers totally ranging from 1 to 64). Numbers 1 to 64 (equivalent to the total sample size) were assigned to people who met the inclusion criteria, respectively. Then each person was placed in each of the groups according to their corresponding number. Follow diagram, Figure 1. Inclusion criteria included the consent of a child with type 1 diabetes to participate in training sessions, familiarity with the Persian language, absence of simultaneous or previous presence in a similar intervention, lack of experience of severe stress such as divorce in the past 6 months. The caregiver should only care for a chronic patient in the family and not use psychiatric medications. Exclusion criteria consisted of unwillingness to continue participation and non-participation in more than one meeting.

Data were collected using a two-part assessment tool including a personal and demographic information questionnaire (i.e., age, gender, occupation, level of

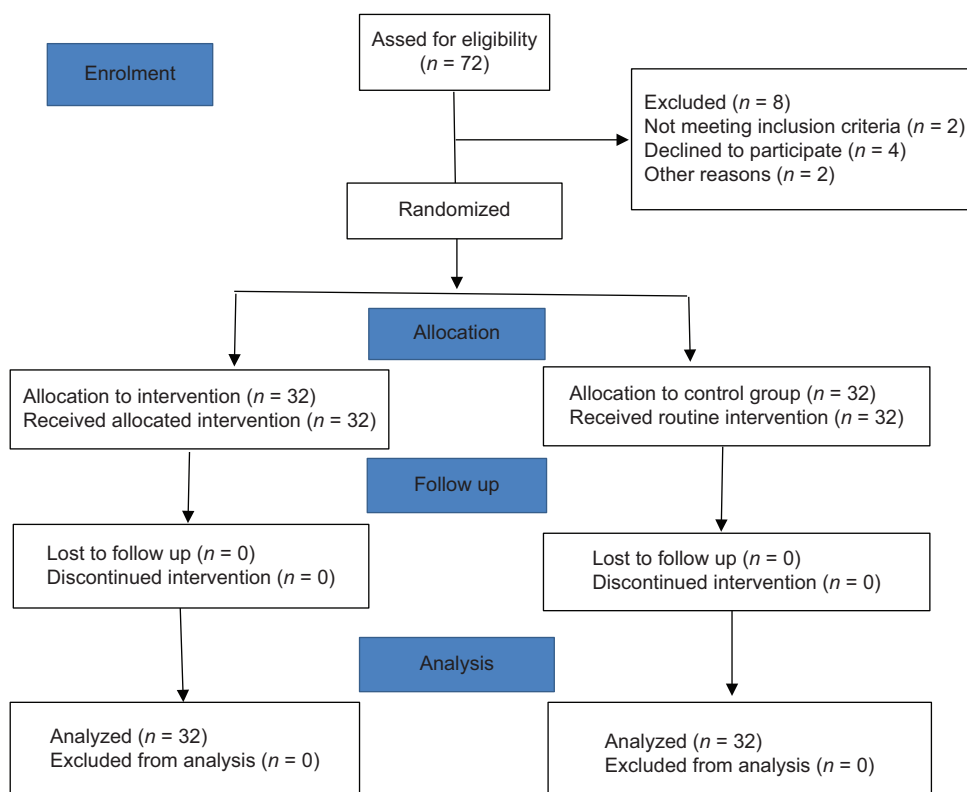


Figure 1: study follow diagram

education, marital status, and duration of childhood diabetes) and the Connor-Davidson Resilience scale (CD-RISC). The CD-RISC was developed by Connor and Davidson.^[22] It has 25 items each rated on a 5-point

scale (0–4), with higher scores reflecting greater resilience. The range of test scores is between 0 and 100. The higher the score, the more resilient the person is. A score above 50 is considered as good resilience. Connor and Davidson reported the Cronbach’s alpha coefficient of the Resilience Scale as 0.89. Also, the reliability coefficient obtained from the test–retest method in a 4-week interval was 0.87. The internal consistency (Cronbach’s alpha) of Persian version of this scale has also been reported as 0.89.^[23]

Table 1: Content of the self-compassion-based training sessions

Sessions	Content
1	Establishing communication and acquaintance of group members with each other, stating the goals of the meetings and the subject of the research, familiarity with the concept of compassion and self-compassion, and examining the status of self-compassion in the samples.
2	Familiarity with the concept of mindfulness; practice mindfulness of voice and breathing, discuss the practice and its implementation by samples, and practising mindfulness in the real world
3	Familiarity with the concept of forgiveness and the ways and means of doing it, reviewing on the steps of accepting negative emotions, and recognizing them using mindfulness and labeling emotions
4	Familiarity with the concept of acceptance, describing the concept of admission and ways and means of doing it
5	Promoting a sense of worth, explaining the concept of value and its cases
6	Familiarity with the concept of responsibility, describing the concept of sense of responsibility and the ways and means of doing it.
7	Training the skills of applying the concepts mentioned in the previous sessions
8	Summarize pre-sessions and review assignments. samples’ explanations of the application of the concepts learned and their emotional outcomes

After required official arrangements, the samples from both groups were asked to participate in a briefing to inform them of the study objectives and process. After referring the samples to the center and signing the informed consent form, the intervention group samples were informed about the sessions’ time, place, and duration. The number of intervention sessions was eight sessions of 90 minutes, two sessions per week [Table 1]. Samples in the intervention group were divided into sub-groups of 10–13 to facilitate the interaction among samples. The pre-test was administered for both groups before initializing the intervention. In case of ambiguity or difficulty in completing the questionnaire, the necessary explanations were given. All samples completed the questionnaire immediately and 1 month after the intervention. At the end of the study, a summarized compassion-based training program was held for the control group. To keep the patient’s name confidential, each questionnaire was assigned a code based on the patient.

Data analyses were performed using IBM SPSS Statistics for Windows, version 22 (SPSS Inc., Chicago, IL, USA). Descriptive statistics (mean, standard deviation, relative, and absolute frequency) were used for descriptive data

Table 2: Descriptive statistics of demographic characteristics of samples in the intervention and control groups

Variable	Group	Total (n)%	Intervention group (n) %	Control group (n) %	Statistics (df)	p
Age	20-30	8 (12.50)	3 (9.375)	5 (15.60)	1.43 (3)	0.65*
	31-40	25 (39.10)	12 (37.50)	13 (40.60)		
	41-50	26 (40.60)	16 (50)	10 (31.30)		
	51-60	5 (7.80)	1 (3.125)	4 (12.50)		
	Total	64 (100)	32 (100)	32 (100)		
Education level	Primary	7 (10.90)	4 (12.50)	3 (9.40)	0.86 (3)	0.84*
	Tip	15 (23.40)	6 (18.75)	9 (28.10)		
	Diploma	36 (56.30)	19 (59.375)	17 (53.10)		
	Bachelor or higher	6 (9.40)	3 (9.375)	3 (9.40)		
	Total	64 (100)	32 (100)	32 (100)		
Occupation	Employed	10 (15.60)	5 (15.60)	5 (15.60)	0.00 (1)	1.00*
	Housewife	54 (84.40)	27 (84.40)	27 (84.40)		
	Total	64 (100)	32 (100)	32 (100)		
Marital status	Married	60 (93.75)	30 (93.75)	30 (93.75)	-	0.69**
	Widow	4 (6.25)	2 (6.25)	2 (6.25)		
	Total	64 (100)	32 (100)	32 (100)		
History of taking psychiatric drugs	Yes	16 (25)	6 (18.75)	10 (31.25)	0.71 (1)	0.23*
	No	48 (75)	26 (81.25)	22 (68.75)		
	Total	64 (100)	32 (100)	32 (100)		

*Chi-square ** Fisher’s exact test

Table 3: Between-group comparisons of resilience at three times of before, after, and follow-up intervention

Variable	Time	Intervention group Mean (SD)	Control group Mean (SD)	Statistics (df)	p
Resilience	Before intervention	59.42 (15.25)	58.33 (18.14)	0.264 (64)*	0.792
	After intervention	71.96 (10.55)	63.53 (19.06)	9.73 (1,60)**	0.003
	Follow-up	78.09 (9.06)	63.21 (21.05)	13.15 (1,60)**	0.001

*t-test, **ANCOVA=Analysis of covariance

and inferential statistics (independent t-test, analysis of covariance, and Chi-square test) were used for between-group comparisons considering alpha level of 0.05.

Ethical considerations

This study was approved by Ethics Committee of IUMS (code: IR.MUI.RESEARCH.REC.1399.073). All participants completed and signed informed consent form, and they were ensured to be free to participate in this study.

Results

Descriptive statistics of demographic characteristics of participants in the intervention and control groups are presented in Table 2. There were no baseline between-group differences of demographic characteristics of participants ($p > 0.05$). The normality of the resilience and compassion scores was assessed and supported using the Kolmogorov–Smirnov inferential test. Moreover, the assumption of homogeneity of variance was supported via insignificant Levine's test.

Table 2 summarizes the between-group pre-test and post-test statistics of outcome variables. The pre-test results showed no significant differences between the two groups regarding resilience scores ($p > 0.05$). According to the findings, the mean scores of resilience were significantly higher immediately and 1 month after the intervention in the intervention group ($p < 0.05$) [Table 3].

Discussion

This study aimed to investigate the effect of compassion-based training program on the resilience of mothers of children with type 1 diabetes. The results have supported the value of the intervention to increase resilience among the study population. Some other studies have accordingly supported the value of interventions based on training self-compassion in different psychosocial contexts. For example, a study by Taher Karami, Hossieni and, Dasht-Bozorgi^[24] has supported the effectiveness of compassion-focused therapy on the resiliency of menopausal women. Some other studies have supported its effectiveness in the caregiving context, despite differences in populations under the study. For example, results of the study by Nuri and Shahabi^[25] revealed that participation in a self-compassion training program had significantly contributed to improving the resilience of mothers of children with autism. Another study has supported the effectiveness of mindful self-compassion training program on nurses' resilience.^[19]

The supporting evidences of the effectiveness of self-compassion training on resiliency as both a

psychological trait and a context-bound construct highlighted the mediating role of people's ability to activate their positive coping strategies when dealing with chronic conditions.^[26,27] To provide such a potential explanation, results of a study by Tara, Hobbs, Lorraine, and Arthur^[28] showed that compassion-based intervention might improve parental resilience when caring for children with chronic illness or disability by helping parents cultivate a mindful awareness as a positive coping behavior in the context of caregiving. A variety of potential factors affect resilience (e.g., attachment styles, personal factors such as gender and self-esteem, family factors such as family structure and support, and social factors).^[29] It suggests that any intervention to improve resilience, particularly in the context of caregiving mothers, should be tailored to address potential mediating contextual variables.

Besides highlighting the value of supporting family caregivers to strengthen them in their caregiving role,^[30] the present study may shed more insight on the association between compassion and relevant intervention on the resilience of mothers of children with type 1 diabetes. This may pave the way to adopt tailored and proper interventions focused on improving self-compassion to improve resilience in this population. However, the limited number of participants along with their socio-cultural context-specific characteristics may limit the generalizability of the findings in other populations.

Conclusion

Considering the effectiveness of the compassion-based intervention to improve the resilience of mothers of children with type 1, it may be worthwhile to suggest compassion-based training program for mothers of children with type 1 diabetes to improve their resilience. Moreover, the study results suggest the value of launching similar training interventions to improve the mothers' self-compassion skills as a valuable way of improving their resilience and readiness to address their caregiving role properly.

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Conflicts of interest

Nothing to declare.

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