

Original Article

The effectiveness of mindfulness-based cognitive therapy on parental stress of mothers with aggressive children

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Abstract

Aggression is one of the major problems in schools. Family members, especially mothers play an important role in the development of aggressive behaviors in children. The purpose of this study was to examine the effectiveness of mindfulness-based cognitive therapy on parental stress of mothers with aggressive children. This study was an experimental research and its design was pretest-posttest with a control group. All the female students studying at the primary schools of Namin city in the year of 2018 (N = 540) with their mothers were selected as the sample. Totally, 217 students as the initial sample were selected by multi-stage clustering sampling and the aggression questionnaire was administered to them by the teachers. Finally, considering the inclusion criteria, mothers of 40 aggressive students were selected as the sample and randomly assigned to one of the two groups (n=20 per group). The data were collected by Shahim's Relational Aggression Scale, and Abidin's parental stress questionnaire and analyzed by ANCOVA through using SPSS-20. The results revealed that mindfulness-based cognitive therapy was effective in decreasing the parental stress of mothers with aggressive children. Considering the effectiveness of mindfulness-based cognitive therapy on parental stress, it can be concluded that through techniques such as paying attention to breathing and body and turning awareness here and now, mindfulness affects the cognitive system and information processing and reduces mental rumination and dysfunctional attitudes in people, and these changes can reduce parental stress.

Keywords

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Introduction

One of the most challenging issues in the present century is the issue of aggression and its adverse effects on social relations (Pirnia, Soleimani & Pirnia, 2017). Aggression is the behavior that poses a threat and possible harm, and may be verbal (such as threatening) or physical (such as hitting, biting, or throwing objects at another person) (Fitzpatrick, Srivorakiat, Wink, Pedapati & Erickson, 2016). Aggression is one of the problems in schools. The prevalence of behavioral disorders in Iranian children is 23% (Mohammadi, Vaisi Raiegani, Jalali, Ghobadi &

Abbasi, 2019). Worldwide, 4.1 million deaths from violence occur each year, 80% more than the number of suicides and homicides (The World Health Organization, 2017). In 2017, it was reported that all forms of violence caused the death of a large number of people, especially in the age group of 1-44 (Heron, 2019). Due to the spread of aggression in recent years, the study of the causes and control of aggression has been considered by psychologists. Aggression is a serious problem in children and adolescents that is significantly associated with a wide range of negative consequences (Stover et al., 2016). Aggression and lawlessness in children can lead to future

antisocial behaviors (Nilsson et al., 2016) and causes defects in academic achievement and IQ¹ (Bajnath, Harcourt, Spagna & Derbaly, 2020). It also has negative effects on personal and social relationships in adulthood (Rezaee, Khodabakhshi Koolaee, & Taghvaei, 2015).

The family environment plays an important role in the development of children's aggressive behaviors (Ehrenreich, Beron, Brinkley & Underwood, 2014). This means that child aggression may be due in part to family-related factors such as parental conflicts in parenting practices, psychological problems, and parental aggression (Hoyo-Bilbao, Gámez-Guadix & Calvete, 2018). The inability of parents to manage child behavior, negative parent-child interaction and especially parental stress (Shafiee, Hashemirazini & Shahgholian, 2018). Parental stress is defined as a perceived difference between situational demands and personal resources related to parental role (Xuan et al., 2018). Parental stress is an important risk factor in the family that contributes to children's behavioral problems (Shokri, Khanjani & Hashemi, 2016.; Kheiry, Salehi & Soltani Shal, 2018; Ershad Sarabi, Hashemi Razini & Abdollahi, 2018; Miragoli, Balzarotti, Camisasca & Di Blasio, 2018). Parents' perception of the level of chronic stress caused by raising children can lead to a negative emotional atmosphere in the family such as feelings of confusion and frustration, parental inefficiency and insensitivity in parenting (Zhou, Cao & Leerkes, 2017). Parental stress is experienced as negative feelings towards oneself and children, and by definition, these negative feelings are directly attributed to the demands of parents (Gabler et al., 2018). Kangar and Alder (1994, quoted in Wong et al., 2018), concluded that based on the pattern of family stress, parental stress affects children's mental health through impairment of parenting skills and family relationships. High levels of parental stress are thought to interfere with the caregiver's ability to deal effectively with parenting-related problems (Di Blasio, Camisasca, Miragoli, Ionio & Milani, 2017). Aggression is one of the behavioral factors that plays a very important role in parent-child interaction (Miragoli, Balzarotti, Camisasca & Di Blasio, 2018). In the family environment, it's a problem to talk about the one-way effect (whether child or parent) on each other and the problems should be investigated in an interactional system. The relationships between parents and children are so close and intertwined that any change in one will affect the other and this interaction will continue. Therefore, in this study, we tried to improve symptoms and modify children's behaviors as a suitable and effective treatment method for educating parents. Mindfulness-based cognitive therapy is a therapeutic intervention. Mindfulness-based cognitive therapy requires specific behavioral, cognitive and metacognitive strategies to central focus the attention

process, which in turn leads to preventing factors causing negative mood, negative thinking, tendency to worrying responses and growth of new perspective and formation of pleasant thoughts and emotions (Segal, Williams, & Teasdale, 2002). In this turn, instead of trying to change or contain the content of thoughts, emotions and physical senses, efforts are made to recognize these structures and reconnect with them (Segal, Teasdale, & Williams, 2004). Mindfulness means consciousness and awareness, along with purposeful attention to everything that is happening in the moment, being here and now, adopting an accepting, curious, unjudged, and unanimous view of internal and external experiences (Kabat-Zinn, 2005). The results of studies showed that mindfulness-based cognitive therapy reduces parenting stress (Chaplin et al., 2018; Rayan & Ahmad, 2018), reducing stress, depression and anxiety (Bazzano et al., 2015; Nejad & Saatchi, 2016). Mohammadi et al. (2018) also showed that mothers' mindfulness training is better than mindfulness-based cognitive therapy of children on reducing parental stress and parent-adolescent conflict. Given that children are among the most vulnerable members of the family, and considering the importance of the role of aggression as a predictor of a range of behavioral disorders in adolescence and adulthood, and considering the emergence of new therapeutic approaches and the existing research gap in the field of problems of mothers of aggressive children and the effect of these problems on the process of interventions in these children, programs to support the family, especially improving the mental health of mothers, have been very effective considering that it has a strong relationship with the child and it helps the family to accept the problem and adapt properly to the child's condition and has a favorable impact on the family system. Also, since in most studies about children's aggression, treatment has been done on children themselves and not on mothers, so it seems that mindfulness-based cognitive therapy has an effect on parental stress of aggressive children's mothers and reduces the symptoms of these children.

Method

Shahim's Relational Aggression Scale

This questionnaire was developed by Shahim (2007) and has 21 items and is scored on a 4-point Likert scale. The relational and explicit aggression scale has three subscales of physical aggression, verbal and hyperactive reactive aggression, and relational aggression. This questionnaire is completed by the teacher (Ahmadi, Asaran, Seyyedmoharrami & Seyyedmoharrami, 2017). The reliability of this questionnaire was estimated using Cronbach's alpha coefficient for physical, relational, and reactive and hyperactive aggressions as 0.85, 0.89, and 0.83, respectively, and it was estimated to be 0.91 for the whole scale. The validity of this questionnaire was

1. Intelligence Quotient

assessed by using factor analysis with principal axis and oblique rotation to extract three factors with a specific value above 1, which explained fifty-nine percent of variance. The KMO coefficient was 0.12 and Bartlett test result was significant for Sphericity of the data. The correlation coefficient between items and total score of physical aggression component ranged from 0.47 to 0.82, the correlation coefficient between relational aggression and total score varied from 0.84 to 0.67, and the correlation coefficient between items and the total score of the reactive and hyperactivity aggression component varied from 0.2 to 0.63 (Shahim, 2007).

Parental Stress Index (PSI) Short Form (SF)

This scale was designed by Abidin (1995) based on the long form of parental stress index (1967) to measure stress in the child-parent relationship and identify their sources of psychological stress. Describing the child's visible behaviors and parent-child interactions are evaluated based on a 5-point Likert scale from completely opposite (equivalent to 1) to fully agree (equivalent to 5) in three subscales of parental distress, parent-child dysfunctional interaction, and difficult child are evaluated. The range of grades varies from 36 to 180 and higher scores indicate higher stress. This scale has 36 items, with items 22, 32 and 33 scales with different labels. In Abidin studies, predicted validity and confirming construct and reliability coefficient after the first implementation of test validity coefficient during the first 18 days after the first implementation for total stress score of 0.75, for parental distress scale 0.82, for parent-child dysfunctional interaction subscales 0.73, and for difficult child characteristics subscales 0.71 (Abidin, 1995). To assess the validity and reliability of the Persian version of this tool, confirmation factor analysis and Cronbach's alpha were used. Cronbach's alpha coefficient for the whole test was 0.90 and the results of confirmatory factor analysis confirmed the existence of three main subscales, namely parental distress, parent-child dysfunctional interaction, and difficult child (Fadaei, Dehghani, Farhadei & Tahmasian, 2010). The test-retest reliability of this scale with interval of six months for general stress was reported to be 0.84 (Kaveh, Alizadeh, Delavar & Borjali, 2011). Cronbach's alpha coefficient for the whole scale was calculated to be 0.78.

Introducing Interventional Program

Mindfulness-based cognitive therapy is one of the innovations in psychological theories that has been achieved by combining eastern spiritual traditions, including techniques of physical meditation with traditional cognitive-behavioral techniques. This program was designed by Segal, Williams, and Teasdale (2002) based on behavioral techniques of relaxation and meditation. Mindfulness-based training is planned by integrating meditation and physical checking techniques

to increase understanding and awareness of automatic and inadoral thoughts, emotions and physical feelings, so that by using its techniques, the responses related to thoughts, emotions and physical feelings can be removed from the automatic state and change in their incidence. Techniques teach people to identify involuntary habitual patterns and rumination of the mind and turn them into conscious and voluntary patterns so that negative emotions and thoughts are viewed as simple and transient events in the mind (Hillgaar, 2011). The intervention stages were performed based on practical description of mindfulness-based cognitive therapy by Kabat Zein method and a practical guidebook for mindfulness-based cognitive therapy to prevent recurrence of depression by Mohammadhani and Khanipour (2006). Treatment program was performed in eight sessions for two hours per week in a group manner. It should be noted that mindfulness-based cognitive therapy intervention by a researcher who has passed the necessary training courses in this field was performed in two months in the form of eight sessions of 120 minutes a week one day (Mondays mindfulness-based cognitive therapy and Wednesday cognitive emotion regulation training) in winter 2018 using lecture teaching methods, brain precipitation and group discussion in schools of Namin. In each session, the therapist first identified the cases in question, taught the new skills to the therapists, and assignments were determined to be performed between the sessions. These assignments were considered according to the treatment protocol guidelines for at least one hour a day, six days a week and eight weeks, which included listening to the tape and doing exercises, noting that the treatmenters are obliged to perform the exercises determined at home practically and report on the process of doing that task in each session, and if they couldn't spend that time practicing, it's best not to start classes. The content of the therapy sessions is as follows:

Table 1. Mindfulness-Based cognitive therapeutic sessions (Segal, Williams, & Teasdale, 2002)

Session	Objectives and Contents
First session: Automatic pilot	A practice session of eating a raisin mindfully with meditation
Second session: Dealing with Barriers	Practicing meditation; ten minutes of mindfulness on breathing Mindfulness on breathing (and on the body at the time of movement); movement exercise with mindful state; breathing and stretching exercises and mindful exercise followed by meditation in a sitting position focused on consciousness of body and breath - these exercises can begin with a brief exercise of the visual or auditory
Third session: Mindfulness of the Breath	

	mindfulness; three minutes of breathing space.
Fourth session: Staying Present	Practicing five-minute meditation sessions with visual or auditory mindfulness; sitting meditation (awareness of breathing, body, sounds, thoughts and consciousness without specific orientation); three-minute breathing space - introducing the method as a coping strategy for use in times when situations arouse difficult feelings; mindful walking
Fifth session: Allowing/Letting Be	Sitting meditation practices - awareness of breathing and body; emphasis on understanding how to react to thoughts, emotions and physical causes created; introducing a difficult situation in practice and exploring its effects on body and mind, and three minutes of breathing space.
Sixth session: Thoughts Are Not Facts	Sitting meditation practice - breathing and body awareness, plus introducing exercise-related problems and understanding its effects on the body and mind; three minutes of breathing space.
Seventh session: How Can I Best Take Care of Myself	Meditation exercises in sitting position; awareness of breathing, body, sounds, thoughts, and emotions; three minutes of breathing space, and a plan to perform the task and find out its effects on body and mind.
Eighth session: Using What Has Been Learned to Deal with Future Moods	Meditation session exercises, meditation completion.

Procedure

In order to implement this study, after obtaining the required permission, the researcher first referred to the Education Department of the city of Namin in the year of 2018 and received the total number of primary girls' schools as well as the number of female students in these schools. Multistage cluster sampling was used to select the sample. Thus, three schools were randomly selected and out of these three schools, nine classes from the fourth, fifth and sixth grades were randomly selected and 217 students were selected as prototypes and Shahim aggression questionnaire was completed by teachers of these classes. Seventy nine students with a higher than average standard deviation in aggression questionnaire were selected as aggressive students. Then, mothers of

these students were invited to attend school and obtain consent to attend treatment sessions and initial interviews were conducted to examine the inclusion criteria. Finally, 40 mothers of aggressive students were selected to participate in the study. In the next step, these mothers were randomly assigned to mindfulness-based cognitive therapy groups and the control group (20 each) and they were asked to complete the parenting stress questionnaire carefully. It should be noted that the peer-to-peer between the two groups was done based on age and education level and covariance analysis was used. The duration of treatment sessions was eight sessions of 120 minutes and was performed by the researcher in groups and one session per week. It should be noted that all ethical considerations such as observance of confidentiality principle and confidentiality of information and written consent of parents were observed in the implementation of this study.

Results

According to the obtained data, the mean age and standard deviation for mindfulness training group were (33.90, 6.43) and control group (35.50, 6.074).

Table 2. Descriptive statistics of parental stress and its components in experimental and control groups

Variables	Group	Step	Min	Max	Mean	standard deviation	(Kolmogorov–z)Smirnov	
							Z	Significance
parental distress	Mindfulness	Pretest	35	46	41.20	3.60	0.154	0.200
		Posttest	31	44	37.55	3.56	0.161	0.183
	Control	Pretest	34	47	40.70	3.75	0.114	0.200
		Posttest	35	45	39.75	3.16	0.158	0.200
parent-child dysfunctional interaction	Mindfulness	Pretest	31	46	38.45	4.04	0.153	0.200
		Posttest	27	41	34.35	3.70	0.120	0.200
	Control	Pretest	31	46	37.65	3.78	0.168	0.139
		Posttest	29	44	36.35	4.29	0.123	0.200
difficult child	Mindfulness	Pretest	39	53	44.20	4.25	0.161	0.185
		Posttest	34	46	38.45	3.69	0.203	0.061
	Control	Pretest	35	51	43.80	4.33	0.159	0.200
		Posttest	37	50	42.70	3.60	0.132	0.200
parental stress	Mindfulness	Pretest	117	136	123.85	6.16	0.128	0.058
		Posttest	103	121	110.35	5.87	0.139	0.200
	Control	Pretest	113	132	122.15	5.60	0.129	0.200
		Posttest	109	127	118.80	5.44	0.087	0.200

Based on the obtained data, in Table 2, the mean and standard deviation of parental stress dimensions can be seen in two groups of mindfulness training and control group. Then, in order to investigate the default normality of the distribution of scores before covariance analysis, Kalmograv-Smirnov test was used, and the results of Kalmograv-Smirnov test (z) indicated that the distribution of data for parental stress dimensions for both groups was normal in the pre- and post-test stages ($p > .05$). In addition, the assumption of homogeneity of variances was examined by Levene's test, and the results indicated that this assumption held true ($p = 0.064$, $F = 3.648$). Then, in

order to examine the homogeneity of variance-covariance matrices, M-box test was used and the results of this test were not calculated due to the high multiple linearity between the total score of parental stress and its components and non-compliance with this assumption. Therefore, due to the lack of this assumption for multivariate analysis of covariance for the total score of parenting stress and its components and the existence of multiple linear hazards, univariate analysis of covariance was used to investigate the difference between the total score of parenting stress between the two groups and multivariate analysis of covariance was used to investigate the differences between parenting stress components (M-box=1.659, F=0.253, P=0.958). The assumption of homogeneity of the slope of the regression line and the existence of a linear relationship between the syming variable and the dependent variable were investigated, and the results indicated the establishment of these two assumptions for the total score of parental stress ($\eta^2=0.780$, F=131.53). After reviewing the assumptions of multivariate analysis of covariance, the results of covariance analysis in Table 3 have been reported to investigate the differences between groups in parenting stress components.

Table 3. Results of the covariance analysis of the intergroup effects of mean parenting stress components

Components	Source changes	of Mean Squares	Degrees of freedom	Mean Squares	F	P	Eta coefficient
parental distress	Group*pretest	8.72	2	4.36	2.35	0.105	0.090
	Group	85.87	2	42.93	21.35	0.0001	0.442
	Error	108.56	54	2.010			
parent-child dysfunctional interaction	Group*pretest	1.25	2	0.627	0.405	0.669	0.017
	Group	75.47	2	37.73	24.26	0.0001	0.473
	Error	83.99	54	1.55			
difficult child	Group*pretest	4.13	2	2.06	1.53	0.225	0.060
	Group	221.81	2	110.91	77.72	0.0001	0.742
	Error	77.061	54	1.427			

Table 3 shows that mindfulness-based cognitive therapy interventions lead to significant differences between groups in parental distress variables ($\eta^2=0.442$, F=21.35), dysfunctional interactions ($\eta^2=0.473$, F=24.261), and difficult child characteristics ($\eta^2=0.742$, F=77.72). The impact was 44.2%, for parental distress, for dysfunctional interactions 47.3%, and for difficult child characteristics 74.2%. Therefore, mindfulness-based cognitive therapy interventions are effective on parental stress of mothers.

Discussion

The purpose of this study was to investigate the effectiveness of mindfulness-based cognitive therapy on parental stress of mothers with aggressive children. The results showed that mindfulness-based cognitive therapy reduced parental stress in mothers with aggressive children. This finding is consistent with the results of

Aghdasi, Soleimanian, and Asadi Gandomani (2019), Bazzano et al. (2015), Chaplin et al. (2018), and Rayan and Ahmad (2018). They have shown that mindfulness-based cognitive therapy has effects on mothers in reducing parental stress in mothers and subsequently reducing aggression. In explaining the effectiveness of mindfulness-based cognitive therapy on reducing parental stress, it can be stated that mindfulness training is taught through breathing and thinking by mental representation of objects in life that are out of human immediate control and this treatment causes mental health and reduces false beliefs in mothers with aggressive children (Rayan & Ahmad, 2018). Concerns about the behavior of children and adolescents and how to cope with the stress or stress of parents and consequently the feeling of depression and lack of competence that indicates the feeling of incompetence and inability to perform parental duties have the greatest impact on parental stress (Gadampour, Moradzadeh & Shakarami, 2019). Mindfulness-based cognitive therapy helps people to identify situations that cause anxiety and stress, and then teach coping strategies to deal with these situations, and consequently reduce stress and anxiety continuously (Rayan & Ahmad, 2018). The results also showed that in the component of parental distress, the difference between the mean of mindfulness-based cognitive therapy and control groups was in favor of the mean of mindfulness-based cognitive therapy groups compared to the control group. In explaining it, it can be said that mindfulness-based cognitive therapy promotes mothers' self-awareness, helps them to recognize strengths and weaknesses, and changes their attitudes and beliefs (Bazzano et al., 2015). In this way, mothers find out during group training sessions by discussing their children's behavioral problems, many of which are common and similar among all parents present. As a result, the feeling of incompetence and inadequacy in the role of parenting in them is reduced and they perform their parenting role with greater confidence. Consequently, by changing parents' attitudes about children's behavioral characteristics, their knowledge of their child's abnormal behaviors changes and their acceptance increases. The results also showed that mindfulness-based cognitive therapy has effectiveness on dysfunctional interactions of mothers. Many mothers blame themselves for their children's behavioral problems or believe that children have chosen a way to harass them in a voluntary way. In mindfulness, mothers correct misconceptions about themselves and children and reduce guilt for culpability and anger because of blaming children. Thus, reducing negative emotions in parents will lead to better relationships with children and reduce behavioral problems of these children (Chaplin et al.,

2018). In mindfulness with intimate and warm parent-child interactions, when children feel they are listened to without judgment, they are more likely to talk about their concerns, beliefs, feelings and needs, so parents become more aware of the child's needs. In correcting the wrong behavior patterns of the child, they participate with him and the way they provide a solid basis for the development of important emotional and behavioral skills for the child and in such an environment, the amount of aggressive behavior of the children is reduced (Khodabakhshi Koolae, Shahi, Navidian, & Mosalanejad, 2015). The results also revealed that mindfulness-based cognitive therapy has lower mean scores on difficult child characteristics than the control group and this indicates a greater impact of mindfulness-based cognitive therapy on difficult child characteristics. Parents of aggressive children reward positive and negative behaviors uncoordinatedly, in particular, parents often reinforce the child's bullying behavior, such as radiation, disobeying, yelling and arguing, by considering it. In this way, the child learns the use of bullying behavior in order to strengthen the parents (Ershad Sarabi, Hashemi Razini, & Abdollahi, 2018). Therefore, educating mothers as the people who spend most time with the child will have the greatest impact on them and increase the likelihood of decreasing inappropriate behaviors in them. Mothers learn in mindfulness-based cognitive therapy program to ignore children's aggressive behaviors by shifting their attention from severe situations to a neutral situation (Bailie, Kuyken, & Sonnenberg, 2012) and thus possibly develop more compromised coping strategies to deal with these situations.

Conclusion

In general, it can be said that MBCT can be considered as an appropriate intervention to reduce parental stress of mothers with aggressive children. Several limitations of the present study should be noted. First, this study is limited to girls and it is difficult to generalize the results to boys. Second, there was no chance to perform a follow-up stage. Third, reinforcing the aura effect of being a curative researcher, that may have affected the results of the study. Fourth, this study did not distinguish attachment styles and paternal influences on children. It is recommended that this study be conducted on boys. For future studies, it is suggested that a follow-up period to be considered, treatment to be done by persons other than the researchers. Since treatment, education and interventions in relation to aggressive children will be more effective when done multidimensionally, it is suggested that future research be conducted with simultaneous education and treatment of parents and children and even teachers of these students in order to make continuous and long-term

changes. Considering that this research has been conducted for elementary school, it is suggested that future studies be conducted at other levels with considering gender variable. Also, according to the results of this study, based on the effectiveness of mindfulness-based cognitive therapy in reducing parenting stress in mothers of aggressive children, it is suggested that this treatment be used to reduce parenting stress in mothers of pre-primary students in order to have better preventive results. Also, family education instructors in schools can use mindfulness-based cognitive therapy in family training sessions to reduce parenting stress of mothers. Therefore, considering these limitations and according to the findings of this study on the effectiveness of mindfulness-based cognitive therapy on reducing parenting stress, this treatment method can be a guide for counselors and therapists.

Disclosure statement

The author of this article declares that there was no conflict of interest.

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