

Maladaptive Schemas and Affective Control in Students with Learning Disability: Benefits of Mindfulness-Based Cognitive Therapy

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Objectives: This study intended to examine the effectiveness of mindfulness-based cognitive therapy on moderating maladaptive schemas and affective control in students suffering from learning disabilities.

Methods: This experimental research was conducted using pretest-posttest and a control group. The population included all the female students who were studying in the Koohdasht's middle schools (academic year: 2012-2013). The sample included 40 female students suffering from learning disabilities who had been randomly selected out of Koohdasht's middle school students after identification and a structured clinical interview and they were put into experimental and control groups (20 students each group). For data collection, Affective Control Scale and Young Schema Questionnaire were used.

Results: The results of multivariate covariance analysis showed that mindfulness-based cognitive therapy has significantly decreased maladaptive schemas, depression, anxiety, and anger in subjects ($p < 0.001$).

Discussion: This finding represents important implications regarding education and mental health improvement in exceptional students. Therefore, it is recommended to use this therapeutic package in schools and clinics as a supplement to other therapies in order to decrease negative emotions and to prevent formation of maladaptive schemas in these students.

Keywords: mindfulness-based cognitive therapy, maladaptive schemas, affective control, learning disability.

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Introduction

Learning disability refers to a group of disorders which are specified with difficulty in acquisition, function of listening, speaking, reading, writing, and calculating. These disorders have a neurological and developmental base beginning before school age and continuing to adulthood (1). According to fourth edition of Diagnostic and Statistical Manual of Mental Disorders (DSM), learning disability is diagnosed when the advancement in standardized tests for reading, mathematics, and writing is under the expected level based on age, education, and level of intelligence (2). In other words, despite the normal intelligence, learning disability can occur and it should be differentiated from normal disorders and educational problems that occur due to time

shortage, weakness in instruction, cultural factor, and ear and eye injuries (3).

The prevalence of learning disability has been reported 2 to 10 percent (4). In recent 10 years, the number of students suffering from learning disability has increased 38 percent (5). Thirteen percent of 5th-grade primary school students suffer from learning disability (6). Due to the disorders in reading, writing, and calculating, the students suffering from learning disability face with problems in their lessons (7). Despite the fact that these people are endowed with normal intelligence, they cannot have desirable educational achievements and they continue their study with difficulty or they quit education; this issue, in turn, results in social, economic, cultural, and affective-mental problems for them and the

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society. These individuals suffer from problems like dysfunction in auditory or visual memory, attention maintenance, impulses prevention, motor integration, auditory or visual perception, weakness in motivation, weakness in organization or generalization, weakness in working memory, distraction, weakness in role perception, information processing, visual-motor integration, learning style, and hyperactivity (8,9).

Maladaptive schema is one of the factors that the mentioned students struggle with; but the researchers have not pay attention to this issue yet. Cognitive structures organize the base of individual's thoughts and behaviors. Other factors related to these structures may play a mediating role (10). In other words, schemas are the deepest cognitive structures (11). "Early Maladaptive Schema" Defined as the schemas leading to formation of psychological problems. These schemas are the self-destructive emotional and cognitive patterns beginning from early growth and persisting in whole life (12,13). Research show that factors like impulse control disorder, cognitive, emotional, and social failure (14), lack of social skills (15), problems of intimate relationships and low self-esteem (16), cognitive distortions and affective shortcomings (14), result in formation of maladaptive schemas in students suffering from learning disability.

Affect is one of the other variables that the students suffering from learning disability struggle with. Affects form an important and basic part of human life in a way that it is too hard to imagine life without affect. Features and changes of affects, the quality of affective relationships, and interpretation of others' affects play a significant role in organization of personality, moral development, social relations, identity formation, and self-concept (17) All human beings experience emotions and affects in their lives; and it is a natural fact that they show various emotions and affects when facing different situations. But extreme negative emotions are not natural and have destructive and harmful outcomes (17).

Affective control skill is the ability of an individual to know how to identify his/her affects in different situations and how to express and control those affects. Affective control skill affects different aspects of individual's life, interpersonal interactions, and mental and physical health (18). Nowadays, new methods of cognitive psychology have been used to treat students that suffer from learning disability. Mindfulness-based cognitive therapy is one of these therapies. The aim of mindfulness-based cognitive therapy is to facilitate

affective change for a better self-care; it will weaken self-threatening factors, facilitate self-acceptance, and decrease affective turbulence; therefore, it enables individual to control himself/herself more successfully (19).

Despite the fact that mindfulness-based cognitive therapy has not directly been applied for maladaptive schemas in children diagnosed with learning ability, some studies have shown the effectiveness of this method. For example, studies showed that the students diagnosed with learning ability, who had received cognitive strategies training, had better performance in problem-solving as compared to control group members; they had also less negative emotions (20). And students diagnosed with learning ability who had received mindfulness-based cognitive training reported higher hope, self-confidence, health, and positive affects after a two-month follow-up (21). also studies showed that the students diagnosed with learning ability who had received mindfulness-based cognitive therapy possessed positive effects and they had higher efficacy in decision-making, cognitive flexibility, creativity, and problem-solving as compared to their classmates (22). To sum up: 1. students diagnosed with learning disability struggle with behavioral problems, depression, anxiety, negative effects, and other disorders (23); 2. The prevalence of this disorder is high in students; 3. Positive effects and cognition play a role in enhancing health and decreasing psychological problems in these students. 4. There is no local research about applying mindfulness-based cognitive therapy on maladaptive schemas in students diagnosed with learning disability; and most of studies have not been done on an Iranian sample. Therefore, this paper intends to examine the effectiveness of mindfulness-based cognitive therapy on moderating maladaptive schemas and affective control in students suffering from learning disabilities.

Methods

This experimental research was conducted using pretest-posttest and a control group. The population included all the female students who were studying in the Koohdasht's middle schools (academic year: 2012-2013). The sample included 40 female students suffering from learning disabilities who had been randomly selected out of middle school students after identification and interview. Then, they were randomly put into experimental and control groups after specification of codes. In experimental method, each group should have 15 people. To be a real

representative of the population and for sake of reliability, the sample size was determined 40 people (20 people for each group) (24).

After getting permission from Koohdasht Education Organization, parents, and participants, identification, interview, and diagnosis were done on the students. First, the objective of the study was stated for them and the pre-test was distributed among them so that they can fill in the questionnaire carefully and completely. The subjects were assured that they can quit the study whenever they want. The confidentiality of the names, identities, and findings was also told for them. Then, the students diagnosed with learning disability were randomly put into experimental and control groups. The experimental group received 12 2-hour group sessions one time a week. The intervention method was mindfulness-based cognitive therapy. This method has been designed by Gilbert (19) as a result of his studies.

1st session: developing relationship with students; reviewing structure of sessions; training body scan (consciousness of body organs in detail); assigning homework. 2nd session: In this session, the students learned to cope with annoying feelings and mental confusion by using body scan. 3rd session: reviewing the last session; learning about the relationship among mood, thoughts, feelings, and events; three- minutes breathing; assigning homework. 4th session: reviewing the last sessions; breathing (as a prerequisite for meditation); meditation; mindfulness training (being conscious of body and breath). 5th and 6th sessions: learning about present problems, accepting and non-judgmental focus, and identification of negative automatic thoughts. 7th session: learning about cognitive distortions, their outcomes, and the ways to cope with them. 8th and 9th sessions: learning about secure strategies, submissive behaviors and self-criticism (challenging patient through Socratic dialogue); assigning homework. 10th to 12th sessions: in these sessions, the patients were asked to talk about self-attacking with attention, thinking, sympathetic behavior, and respect. Then they were taught how to create sympathetic images by meditation. After one week, the post-test was filled in by the participants. It is worthy of notice that the researchers have passed courses on structured interview and mindfulness-based cognitive therapy. In the present study, the following instruments have been used for collecting data:

Structured Clinical Interview for DSM Disorders (SCID): Structured Clinical Interview based on

DSM-IV: SCID: is a semi-structured clinical interview used for diagnosing the first Axis disorders based on DSM. The potential usages of SCID in mental health clinics have been examined in a research. Findings of this study showed that SCID can guarantee a reliable diagnosis (25). Affective Control Scale: An instrument to measure individual's control on his affects. This instrument includes 42 items with four subscales (anger, depressed mood, anxiety, and positive affect). The choices were 7-level rating scale (from very strongly disagree [score=1] to very strongly agree [score=7]). Twelve items are scored inversely. In this scale, 8 items measure anger; 8 items measure depressed mood; 13 items measure anxiety; and 13 items measure positive affect. Internal validity and retesting results were respectively 0.94 and 0.78 (for total score); 0.72 and 0.73 (for anger subscale); 0.91 and 0.76 (for depressed mood subscale); 0.89 and 0.77 (for anxiety subscale); and 0.84 and 0.64 (for positive affect subscale) due to an implementation on BA students. Discriminant and convergent validity were also calculated (26). In Iran examined the reliability of this scale (Cronbach's Alpha: affective control=0.84; anger=0.53; positive affect=0.60; depressed mood=0.76; and anxiety=0.64). These show the suitability of this instrument for Iranian culture (27).

Young Schema Questionnaire-Short Form (YSQ-SF): This questionnaire includes 75 items and it has been developed by Young and Brown to measure 15 early maladaptive schemas. The reliability of all schemas was calculated 0.76 to 0.93. Findings of factor analysis support the internal consistency of this questionnaire. In Iran have also calculated its reliability (Cronbach's Alpha= 0.94) and validity (result of correlation with Irrational Belief Test: 0.34)(28). Ultimately, the data was analyzed using SPSS (version 16). Mean scores, standard deviation, and MANCOVA were presented. Additionally, the findings were reported and their consistency with findings of literature was discussed.

Results

Mean score (and standard deviation) of subjects' age in the experimental group and control group were respectively 14.17 (and 2.34) and 13.53 (and 2.12). The percent of education level for subjects' father [mother] in experimental group was respectively primary education (57 [55]), secondary education (34[36]), associate's (7[6]), bachelor's and higher (2[3]). The percent of education level for subjects'

father [mother] in control group was respectively primary education (53 [68]), secondary education (39[23]), associate's (6[6]), bachelor's and higher (2[3]). The percent of Birth order in experimental (control) group was respectively first child (33[29]),

second child (29[27]), third child (26[30]), and fourth child etc. (18[14]). In experimental group, 35 percent of fathers were employees and 65 percent had free jobs. In control group, 37 percent of fathers were employees and 63 percent had free jobs (table 1).

Table1. Mean scores and standard deviations in pre-test and post-test
(For the subscales of both instruments)

variable	subscales	experimental				control			
		Pre-test		Post-test		Pre-test		Post-test	
		M	SD	M	SD	M	SD	M	SD
schemas	Emotional deprivation	15.23	3.45	10.33	2.33	16.12	4.12	14.63	3.36
	Abandonment	16	4.1	9.69	1.89	15.89	3.95	16.13	4.15
	Mistrust/abuse	16.36	4.23	10.23	2.18	14.23	3.21	15.69	4.23
	Social isolation	17.14	5	11.24	2.65	16.1	4.2	14.44	3.89
	Defectiveness/shame	14.23	3.2	8.59	1.63	14.55	3.63	15.1	4
	failure	16.23	4.2	11	2.1	17	4.52	16.23	4.23
	Dependence/incompetence	14.23	3.23	9.69	1.45	16	3.36	15.69	5.1
	enmeshment	15.24	3.63	9.41	1.23	15.23	4.68	15.2	4.63
	Vulnerability to harm	17.24	5.1	10.21	2.4	14.56	3.54	13.63	3.94
	entitlement	14.52	3.21	8.69	1.36	13.63	3.12	14.26	3.65
	Insufficient self-control	18	5.12	11.21	2.45	15.45	3.57	16.21	4.12
	subjugation	9.85	2.89	17.63	4.33	10.63	2.23	11.36	2.63
	Self-sacrifice	9.23	2.29	15.16	3.38	11.23	3.1	12.12	3.1
	Emotional inhibition	19.45	6.23	10.47	2.85	17.46	5.65	16.1	4.56
	Unrelenting standards	16.63	4.33	9.36	2.23	15.36	4.68	14.26	4.71
Affective control	Total score	98.85	16.85	72.43	11.55	95.97	15.36	93.36	13.47
	depression	34.36	5.63	24.32	4.23	35.42	5.87	33.63	5.89
	anxiety	31.54	4.45	25.74	3.89	29.47	4.78	27.45	5.88
	anger	31.42	4.45	22.74	4.87	32.33	5.64	31.45	4.76
	Positive affects	21.35	3.64	29.35	3.75	22.36	4.36	21.17	3.25
	Total score	105.75	8.63	125.33	12.33	107.55	9.15	104.37	8.56

Before using the parametric test MANCOVA, BOX test and Leven test were used to assure the assumptions of MANCOVA. BOX test was not significant for any of the variables. Therefore, Homogeneity of variance/covariance has been

observed (P=0.27, F=1.33, and BOX=16.34). Leven test was not significant for any of the variables. Therefore, Condition of equality of variances has been observed (table 2).

Table 2. Multivariate variance test indexes

	test	value	DF	F	P
group	Pillai's trace	0.768	1	13.89	000.0≤P
	lambda	0.186	1	13.89	000.0≤P
	Hotelling trace	3.848	1	13.89	000.0≤P
	greatest root	3.705	1	13.89	000.0≤P

The results of Lambda test showed that the effect of group is significant on the subscales of both instruments [Wilks, F (89, 13) = 0.186, P<0.001]. The result of this test permits to use MANOVA. Findings showed that there is a significant difference between the two groups at least for one of the variables.

Table (3) shows that there is a significant difference in mean scores of schemas total score (F = 72.81) and affective control total score (F = 48.130) between experimental group and control group (P<0.001).

Table 3. The results of MANCOVA test for comparing pre-test and post-test of both instruments (in experimental group and control group)

Dependent variable	subscales	SS	DF	MS	F	P
schemas	Emotional deprivation	451.36	1	127.36	12.33	0.001≤P
	Abandonment	378.89	1	212.89	13.45	0.001≤P
	Mistrust/abuse	542.36	1	289.36	15.141	0.001≤P
	Social isolation	358.141	1	98.141	11.264	0.001≤P
	Defectiveness/shame	418.789	1	126.789	14.32	0.001≤P
	failure	521.261	1	121.261	16.214	0.001≤P
	Dependence/incompetence	374.241	1	119.241	13.45	0.001≤P
	enmeshment	347.362	1	121.362	14.54	0.001≤P
	Vulnerability to harm	311.418	1	143.418	15.78	0.001≤P
	entitlement	374.88	1	116.88	17.147	0.001≤P
	Insufficient self-control	410.236	1	102.236	13.254	0.001≤P
	subjugation	247.621	1	120.621	11.123	0.001≤P
	Self-sacrifice	315.412	1	164.412	14.148	0.001≤P
	Emotional inhibition	254.386	1	142.386	17.136	0.001≤P
total	69834.45	1	23297.48	72.81	0.001≤P	
Affective control	Unrelenting standards	217.127	1	126.12	16.23	0.001≤P
	depression	574.80	1	275.36	19.231	0.001≤P
	anger	698.43	1	239.47	18.81	0.001≤P
	anxiety	613.137	1	306.568	20.713	0.001≤P
	Positive affect	240.753	1	120.376	9.217	0.001≤P
	total	18164.861	1	9082.430	48.130	0.001≤P

Discussion

This study intended to examine the effectiveness of mindfulness-based cognitive therapy on moderating maladaptive schemas and affective control in students suffering from learning disabilities. The results of the study showed that mindfulness-based cognitive therapy moderates maladaptive schemas in subjects. These findings are consistent with some other studies' results (19-21) that mindfulness-based cognitive therapy moderates maladaptive schemas like shame, failure, emotional inhibition, social isolation, and abandonment. Schemas shape the base of individual's self-concept and influence the individual's interaction with environment and are able to make individuals vulnerable to their daily problems. In fact, schemas are employed as patterns to process the individual's experiences. Schemas determine the individuals' thoughts, their relationship with others, and the way they perceive themselves and others (13). Because of limited relationship with others and lasting ruminations, maladaptive schemas take form in students diagnosed with learning disability. These structures cannot protect the individuals from negative emotions; and these students feel isolation and abandonment. These schemas are related to a range of psychological problems including cognitive, emotional, and social dysfunctions such as cognitive distortions (14), intimacy problems, feeling loneliness, and low self-esteem (16) (Ward et al.). But, mindfulness-based cognitive therapy includes a sympathetic relationship with oneself; and instead of

helping the individual change, it recommends a new self-care and sympathetic internal processes that can be regarded as a neuro-psychophysiological therapy (19). On the other hand, mindfulness-based cognitive therapy is accompanied with meditation and relaxation; hence, it could be a mediating factor in increasing psychological function and quality of life for these students (29). The findings of the present study also showed that mindfulness-based cognitive therapy decreases negative effects (depression, anger, and anxiety) in experimental group as compared with the control group. This finding is consistent with the findings of other studies (12,13,30).

To interpret these findings, it can be said that students diagnosed with learning disability are reluctant to cope with social environment; they feel themselves alone when they come across problems; and they do not have enough energy to cope with stressing events and they turn to isolation. On one hand these recurring failures and affective derivations in establishing relationship leads to formation of negative effects such as anxiety, depression, anger, and hopelessness in child. On the other hand, mindfulness-based cognitive therapy facilitates affective changes for higher self-care and acceptance, decreases affective problems, and makes individuals able to control themselves (19). In fact, this approach in treating the children diagnosed with learning disability can decrease their harmful behavior; and by educating emotional self-regulation, affective self-leadership, and self-control,

it may help children regulate their unsuitable behaviors, develop desirable behaviors in themselves, and enhance their mental health (20).

Small size of the sample and lack of follow-up stage may be the limitations of this study. It is recommended that the future research be conducted using a larger sample and employing follow-up stage. However, this therapeutic method can be applied for mentally retarded students and their parents as a supplement to other methods.

Conclusion

The results of the study showed that mindfulness-based cognitive therapy moderates maladaptive

schemas in subjects. This finding represents important implications regarding education and mental health improvement in exceptional students. Therefore, it is recommended to use this therapeutic package in schools and clinics as a supplement to other therapies in order to decrease negative emotions and to prevent formation of maladaptive schemas in these students

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