

The Effectiveness of Mindfulness Training on the Fear of Negative Evaluation and Automatic Thoughts in Female Students

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Abstract

Introduction: Mindfulness training is an effective method for lowering stress and negative thoughts. The purpose of this study was to evaluate the effectiveness of mindfulness training on fear of negative evaluation and automatic thoughts in female students.

Method: This research was conducted as a semi-experimental research using pre-test post-test design with a control group. The sample consisted of 30 students (15 participants for each of the experimental and control groups). At first, 120 individuals were selected by purposive sampling and then 30 subjects were selected among the students who scored higher than the average score in the pre-test (fear of negative evaluation and automatic thoughts scales). Participants in the experimental groups received mindfulness training for eight sessions, while the control group did not receive any training. At the end of the training a post-test was taken from both groups. Multivariate covariance analysis was used to investigate the research hypotheses.

Results: The results indicated that mindfulness training decreased significantly both fear of negative evaluation ($p < 0.05$) and automatic thoughts ($p < 0.05$).

Conclusion: According to the results of this study, mindfulness training is effective in reducing the fear of negative evaluation and automatic thoughts, so providing this training for students can prevent the negative effects of these variables in the educational environment.

Declaration of Interest: None

Keywords: Automatic thoughts, Fear, Mindfulness, Negative evaluation, Students.

Introduction

Adolescence is a period in life that begins with puberty changes. Adolescence is a psychological transitive period that brings about important biological, psychological and social changes and thus makes individuals vulnerable to challenges, negative life experiences, negative emotions, and restlessness (1).

One of the variables adolescents deal with, are automatic thoughts. Automatic thoughts are a transient phenomenon; they include sentences and phrases that emerge during consciousness. The duration of these thoughts are only as short as one becomes alert to them. Automatic thoughts are the trace of other cognitive processes. They are short and proprietary, and may consist of only a few words or an expression that will immediately take place after an action or an event. In fact, they are a quick assessments of events (2). In fact, everyone might have negative thoughts about themselves; however, predicted negative expectations for upcoming events may cause much more suffering. If these negative expectations of the future occur with outlooks of helplessness, suffering may further increase (3). In Beck's (1983) opinion, the adolescence's encounter with emotional, physical and social changes along with the rise in their anxiety and concern while interacting with life's stressful situations creates the base of negative automatic thoughts (2). These negative automatic thoughts result from life stressful situations and include biases in personal cognitive information. Negative automatic thoughts include sentences and phrases that take place in consciousness. The life of these thoughts is only until the consciousness of a person rests upon it and

it takes place immediately after an event. In fact, these thoughts are triggered by failing to react to one's life stressors (4).

Inefficient mental representation and negative cognitive structures occur when a negative event activates a dysfunctional schema and may persist and turn into negative automatic thoughts due to the wrong logic which people use. According to Beck's cognitive perspective, negative automatic thoughts are situational and involuntary thoughts that come to mind in situations where people suffer from anxiety and depression (5).

If the negative automatic thoughts continue, they will impact the person's emotions and feelings and lead to behavior and emotional troubles(6). In other words, the interaction between dysfunctional beliefs and negative life experiences make negative automatic thoughts about the self, the world and the future. These thoughts that usually appear after a stressful event in life include sentences and phrases that take place in consciousness. The life of these thoughts is only until the consciousness of a person rests upon it and it takes place immediately after an event (7).

Automatic thoughts can be influenced by negative evaluations and irrational beliefs and as such these factors should be included in psychological interventions (8). In addition, studies have also shown that negative automatic thoughts have a correlation with depression and anxiety (9) as well as low self-confidence (10).

Another important cognitive factor in adolescence is the fear of others' negative evaluation. When adolescents are placed in a situation that might lead to mistakes or their failure they start evaluating themselves negatively and show poor

abilities. On occasions where the individual is in others view and might be criticized or evaluated by them, she might become anxious far too much. The fear of negative evaluation results in her being seen as humiliated, hatred, worthless or stupid by others (11).

Fear of negative evaluation is the key issue of negative thoughts and the perceptions of social anxiety disorder. Negative evaluation has been defined as a form of anxiety about social evaluation that includes the perception of evaluating others, being anxious about their evaluation, avoiding evaluative situations, and expecting others to evaluate the person negatively (12,13).

The main characteristic of individuals with social anxiety disorder is their excessive concern or the fear of negative and bad judgment from others. The fears or particular concerns vary slightly from person to person but in all cases, there is a basic concern that others will evaluate them negatively. As a result, people with social anxiety disorder will be anxious by any situation where they can be evaluated by another person (14). Fear of negative evaluation is associated with self-focused attention. In fact, social anxiety and fear of negative evaluation causes one to focus attention on him/herself in the face of social threats (15). Poor social functioning has been found to be present in those at risk for psychosis (16). People with social anxiety disorder experience severe fears and avoid social situations and most treatments that are designed to handle and reduce these symptoms (17).

Nowadays therapists use different therapeutic methods, including cognitive therapy based on mind-awareness, to control and reduce inefficient attitudes, negative thoughts and aggressive behavior

(18). Also over the past ten years, there has been a wave of interest in the use of mindfulness-based techniques in the treatment of psychological conditions which have created a body of empirical evidence for the effectiveness of such an approach (19, 20). Cognitive theorists describe mindfulness as a kind of attention to consciousness in which thoughts can be seen in unconnected, discriminatory, and non-judgmental methods (21). Mindfulness is usually defined as: continuous monitoring of current experiences along with a willingness to accept them. Supervision of attention is defined as a kind of continuous awareness of perceptual and sensory experiences (Such as specific body sensations, environmental sounds, mental images and conversations) (22). Mindfulness includes reminders, but isn't related to memories. It includes reminders to refresh our awareness and knowledge of recent experiences in an intimate and comprehensible matter. This requires one to willfully give up the fiction and allow the full experience of the moment (23). Baer, Smith, Hopkins, Krietemeyer, & Toney (2006) describe five skills that include 1) mindfulness: not responding to inner experience; 2) paying attention to thoughts and feelings; 3) acting with an awareness; 4) describing and labeling inner experiences with words; and 5) not judging experience. Mindfulness is specifically taught through meditation techniques with sensory focus (24); (25). Mindfulness is a potential for obvious attention. Also, mindfulness is paying attention to what is happening at the moment, regardless of whether that personal experience is negative, positive or neutral (26). Mindfulness based on cognitive education showed that attention to the process of thinking is important. It

may even be more significant than paying attention to the content of thinking in the traditional approaches of cognitive therapy. Metacognitive awareness of emotions and thoughts can lead to more mental awareness and consequently result in less experiential avoidance (27). Mindfulness interventions also typically employ a range of different types of strategy, for example they may include exercises designed to promote greater awareness of bodily sensations, to develop an attitude of acceptance toward uncomfortable feelings, or to help individuals see themselves as separate from their thoughts and emotions (28). Extensive research on adult populations has proven the effectiveness of mindfulness therapy in a variety of areas such as stress management and anxiety and promoting emotion regulation skills (29). Mindfulness practice improves the understanding of physical symptoms. This understanding of symptoms can increase our awareness of thoughts and emotions that are caused by physical symptoms or are preceded by physical symptoms (30). Mindfulness practice encompasses “improved self-observation that promotes better coping skills” (31). Mindfulness-based interventions are increasingly used in the treatment and preventing of mental health conditions (32). Mindfulness meditation is an effective way of managing stress (33). Mindfulness training is increasingly being recommended as a strategy to increase therapeutic effectiveness (34). Recently, some studies have also shown that mindfulness learning is beneficial for emotional regulation and mental health (35). Mindfulness-based therapies have highly effective in treating some of the clinical

disorders and physical illnesses (36) and according to studies, mindfulness affects least in two ways in confronting obsessive rumination and in decreasing emotional autonomic responsiveness (37), adjustment state excitement and mood (38), recurrent depression, obsessive rumination and anxiety (39), fear of negative evaluation, assertiveness (40), fear of negative evaluation and emotional regulation (41), reducing avoidance, social phobia and fear of negative evaluation (42), changing inefficient attitudes (43), reducing Irrational Beliefs (44), reducing automatic thoughts(45); (46), decrease symptoms of social anxiety, negative self-esteem and positive increase in self-esteem (47), increase in emotional clarity (48), reducing social anxiety and ineffective attitudes (49).

In general, the above research revealed that automatic thoughts and fear of negative evaluation play an important role of determination in social adjustment and welfare of life, and on the other hand mindfulness training is one of the effective psychological interventions in reducing self-esteem and fear of negative evaluation. Due to the sensitivity and importance of adolescence and the important features of this period during life, which would have an undeniable effect on their education, job, cognitive and emotional situation in the future, it is necessary to conduct research on the psychological field of adolescents. One of the limitations of previous studies was to not considering the high average in both contents of fear of negative evaluation and automatic thoughts for entering the research, therefore by selecting students who scored high in the pre-test (above the

average score) as the target community, this study was aimed at answering the question of whether mindfulness training would affect the fear of negative evaluation and automatic thoughts or not?

Method

A Semi-experimental method and a pre-test-post-test design with a control group were used in this study. The statistical population of this study consisted of all female high school students of the second grade of public schools in the district of Tehran, who were studying in 2017-18. Since this research is part of a semi-experimental research, the sample size were 30 people (15 participants for each experimental and control group). In this research, purposive sampling was used, so that a list of all public secondary schools in the district was prepared first, then among them, a school was selected randomly. After determining the school, first the total of 120 students, were pre-

tested by completing questionnaires about fears of negative evaluation and automatic thoughts. After checking the completed questionnaires, 9 questions were excluded and the remaining 111 questions were analyzed. Participants who scored high (above average score) in the pre-test (n=30) were selected and randomly assigned to the experimental and control group. The experimental group was subjected to mindfulness training for 8 sessions of 90 minutes (weekly one session), While the participants in the control group did not receive any training. Mindfulness based stress reduction (MBSR) training is created by Kabat Zinn (1992) and guided meditation to decrease the stress; this method applied for problems with stress, anxiety, depression and the like. It is designed to create and maintain the internal changes. Table 1 summarizes the content of mindfulness training sessions (50).

Table 1: Mindfulness-Based Stress Reduction Program(MBSR)

Sessions	Content
1	Introduction of automatic guidance system-How to apply the current awareness of physical feelings, thoughts and emotions to reduce stress-Practice eating raisins and giving feedback and discussing this exercise-Three-minute breathing practice - next week assignment and distribution of meditation CD
2	Relaxation training for 14 muscle groups including forearm, arm, back leg, thighs, abdomen, hips, shoulders, neck, lips, eyes and forehead-Discuss about body scan
3	Meditation training and review of past sessions
4	Familiarity with the mindfulness of breathing, teaching the technique of inhaling and exhaling with relaxation and without thinking about anything else and learning the technique of watching breathing and homework mindfulness of breathing before going to sleep
5	Teaching the technique of paying attention to body movements while breathing, focusing on body parts and their movements and searching for physical senses, homework mindfulness eating
6	Teaching attention to the mind, positive and negative thoughts, pleasant or unpleasant thoughts, allowing negative and positive thoughts to enter the mind and easily take them out of the mind without judgment and deep attention to them
7	40 minutes of sitting meditation, reviewing homework, practicing observing the connection between activity and mood
8	Reviewing, conclusion and performing post-test

At the end of the training sessions, mindfulness was measured using a questionnaire of automatic thoughts and fear of negative evaluation from participants in the post-test. To analyze the data, the descriptive statistics indicates and also the multivariate covariance analysis method was used to investigate the research hypotheses. The questionnaires used in this study include:

Automatic thoughts questionnaire: In order to measure automatic thoughts, Kendall and Halon's automatic thoughts tools were used to assess the cognitive component of depression from the person's point of view. This 30-item questionnaire is ranked on a 5-point Likert scale. Higher scores indicate a negative outlook and lower scores indicate a positive outlook. The minimum score is 30 and the maximum is 150. The automatic thoughts questionnaire considering 4 types of these thoughts: Personal Maladjustment and Desire for Change, Negative Self-Concept and Negative Expectations, Low Self-esteem, Helplessness. The alpha coefficient of the total automatic questionnaire is 0.97. Validity of this scale was obtained by correlation with Beck's depression questionnaire equal to 0.79, which is significant at the level of 0.01 (Kendall and Halon, 1980).

Fear of negative evaluation questionnaire: This scale was designed by Watson and Friend in 1969 to measure social anxiety. The fear of negative evaluation questionnaire also has a short version of 12 items that was used in this study. The short version of this test includes phrases from the main test that have a correlation with a total test score above 0.50. The method of scoring options in the short version of I'm not like this at all = 1, to be strongly like this = 5. Items 2, 4, 7 and 10 are scored in reverse. The total score is in the range of 12 to 60. The reliability of the short version of the scale

was calculated using Cronbach's alpha of 0.90. In order to measure the validity of the short version of the fear of negative evaluation questionnaire, the correlation of the scores of this test with the scores of the original version was 0.96 calculated.

Results

The sample of the present study included 30 female students with average and standard deviation of age 18.16 ± 0.52 . To examine the effect of mindfulness on automatic thoughts and the fear of negative evaluation, was used the analysis of univariate covariance (ANCOVA). To evaluate the normality of the variables, Shapiro-Wilk's test was used. Shapiro-Wilk's statistical value for the variables of automatic thoughts, fear of negative evaluation in the experimental group was 0.94 and 0.88, respectively, and in the control group was 0.85 and 0.97, respectively. Also, Shapiro-Wilk's statistic for automatic thoughts components such as personal maladjustment and desire for change, negative self-concept and negative expectations, low self-esteem and helplessness in the experimental group was 0.92, 0.85, 0.88 and 0.95 and in the control group was 0.91, .087, 0.94, and 0.97, which were not statistically significant ($P > 0.05$). Therefore, the assumption of normal distribution of variables has been observed. Leven test was used to test the hypothesis of variance homogeneity. Leven's statistical value for automatic thought variables and fear of negative evaluation are 2.22 and 2.03, respectively. Also, Levin's statistical value for the components of automatic thoughts such as personal maladjustment and desire for change, negative self-concept and negative expectations, low self-esteem and helplessness are 1.04, 1.17, 2.06, 2.08, respectively, which is Not statistically significant ($P > 0.05$). Therefore, the assumption of variance homogeneity of research variables among the compared groups has been observed.

Table 2: The descriptive statistics of automatic thoughts with components and fear of negative evaluation by group

variables		N	Experimental Group		Control Group	
			Mean	S.D	Mean	S.D
Automatic thoughts	Pretest	15	71.66	28.97	89.33	22.94
	Posttest	15	56.67	9.52	91.33	25/57
PMDC [□]	Pretest	15	13.60	6.01	17.80	3.91
	Posttest	15	11.53	4.71	15.85	5/59
NSNE [□]	Pretest	15	16.33	7.66	19.32	6.43
	Posttest	15	11.40	3.74	18.80	6.15
Low Self-Esteem	Pretest	15	3.93	2.12	4.53	2.20
	Posttest	15	2.89	1.43	5.06	2.63
Helplessness	Pretest	15	4.40	2.16	5.52	1.59
	Posttest	15	3.32	1.49	6.07	2.18
Fear of negative evaluation	Pretest	15	35.66	5.91	36.20	9.35
	Posttest	15	26.00	3.95	35.60	7.61

[□]Personal Maladjustment and Desire for Change, Negative Self-Concept and Negative Expectations

Table 3: The results of univariate analysis of covariance (ANCOVA)

Variable	Source of change	SS	df	MS	F	Eta Squared
automatic thoughts	Pretest	3015.721	1	3015.721	61.362	0.694
	Group	685.492	1	685.492	13.948	0.341
	Error	1326.946	27	49.146		
Fear of negative evaluation	Pretest	263.875	1	263.875	6.802	0.201
	Group	488.151	1	488.151	12.583	0.314
	Error	1047.459	27	38.795		

In explaining the first hypothesis, it can be said that the F-value to measure the difference between the experimental group and the control group was 13.94 and It is statistically significant at the level of 0.01 ($P \leq 0.01$). According to descriptive statistics, it can be concluded that the level of automatic thoughts of the experimental group is less than that of the control group. In addition, based on the correlation coefficient of ETA, 34.5% of the variance of the variable of automatic thoughts is explained by the independent variable of the research. It should also be note that the effect of the curt variable (pre-test automatic thoughts) is significant at the level of 0.01 (0.01) for controlling the initial differences between the experimental and control groups ($P < 0.01$).

In the explanation of the second hypothesis, it can be said that the F-value to check the difference between the test and control groups in the fear of evaluation variable is 12.58 and statistically significant at 0/01 ($p \leq 0/01$). According to descriptive statistics, it can be said that the fear level of the evaluation of the experimental group is less than that of the control group. Besides, based on the correlation coefficient of ETA, 31.4% of the variance of the variable of fear of evaluation is explained by the independent variable of the research. It should also be noted that the effect of the curt variable (pre-test automatic thoughts) is significant at the level of 0.01 (0.01) for controlling the initial differences between the experimental and control groups ($P < 0.01$).

The sample of the present study included 30 female students with average and standard deviation of age 18.16 ± 0.52 . To examine the effect of mindfulness on automatic thoughts and the fear of negative evaluation, was used the analysis of univariate covariance (ANCOVA). For this purpose we first examined by the presuppositions of this method. To evaluate the normality of the variables, Shapiro-Wilk test was used. Shapiro-Wilk's statistical value for the variables of automatic thoughts, fear of negative evaluation in the experimental group was 0.94 and 0.88, respectively, and in the control group was 0.85 and 0.97, respectively. Also, Shapiro-Wilk's statistic for automatic thoughts components such as personal maladjustment and desire for change, negative self-concept and negative expectations, low self-esteem and helplessness in the experimental group was 0.92, 0.85, 0.88 and 0.95 and in the control group was 0.91, .087, 0.94, and 0.97, which were not statistically significant ($P > 0.05$). Therefore, the assumption of normal distribution of variables has been observed. Leven test was used to test the hypothesis of variance homogeneity. Leven's statistical value for automatic thought variables and fear of negative evaluation are 2.22 and 2.03, respectively.

Also, Levin's statistical value for the components of automatic thoughts such as personal maladjustment and desire for change, negative self-concept and negative expectations, low self-esteem and helplessness are 1.04, 1.17, 2.06, 2.08, respectively, which is Not statistically significant ($P > 0.05$). Therefore, the assumption of variance homogeneity of research variables among the compared groups has been observed.

Multivariate analysis of covariance (MANCOVA) was used to investigate the effect of mindfulness on the components of automatic thoughts. First, the similarity of the variance-covariance matrix between the dependent variables was used by the Mbox's test. The result of this test is equal to 15.12 ($P > 0.01$). Then the results of multivariate tests were examined that the value of Wilkes' lambda statistic is 0.40 and statistically significant at the level of 0.01 ($P < 0.01$), ie at least there are significant differences in one of the components in components of automatic thoughts between the experimental and control groups. The results of multivariate analysis of covariance are presented in Table 4.

Table 4: The results of multivariate analysis of covariance (MANCOVA)

Variable	Source of change	SS	df	MS	F	Eta Squared
Post PMDC	Group	7.277	1	7.277	1.274	0.050
	Error	137.065	24	5.711		
Post NSNE	Group	175.781	1	175.781	14.866	0.382
	Error	283.783	24	11.824		
Post LSE	Group	18.423	1	18.423	6.245	0.206
	Error	70.797	24	2.950		
Post Helplessness	Group	25.221	1	25.221	8.718	0.266
	Error	69.433	24	2.893		

The results of Table 4 show that the effect of mindfulness on the PMDC ($F = 1.27$, $P > 0.05$) is not significant. Based on the

results mindfulness has a significant effect on the NSNE ($F = 14.86$, $P < 0.01$) and according to the data, the effect rate is

38%. The results show that mindfulness training has a significant effect on the low self-esteem component ($F = 6.24, P < 0.01$) and according to the data, the effect rate is 20%. Also, based on the results of mindfulness training, it has a significant effect on the helplessness ($F = 8.71, P < 0.01$) and according to the data, the effect rate is 26%.

Discussion and Conclusion

The purpose of this study was to investigate the effect of mindfulness education on automatic thoughts and fear of negative evaluation of students. The results of the data analysis indicate that there is a significant difference between the control group and the group that received awareness training and educating mindfulness on the reduction of automatic thoughts among students which had a positive effect. Among the researches that are consistent with the results of this study, one can mention is the research by (46), (45), (43), (44), (51), (52), (48). (21) found those individuals who show higher levels of mindfulness show less negative automatic thoughts and believe that they are able to free themselves from such thinking (53). Findings of (38) showed the advancement of mindfulness as an effective strategy not only in the tragic mood-setting, but also in maintaining cognitive resources in the context of mental state adjustment. But In explaining the results, it can be said that negative automatic thoughts are transient and self-conscious ones that occur during consciousness and have a significant role as a detector agent in determining the human behavior in stressful situations (2). Therefore, it can be expected that mindfulness practices and concentration and conscious attention on thoughts will

have an effective role in reducing negative automatic thoughts. Also, in explaining the results based on (52), it can be said that mindfulness is a kind of non-judgmental knowledge of personal experience, and instantaneously becomes apparent without judgment. Although the main aim of the mindfulness is not relaxation, but observing internal negative events, without any judgment about them, or physiological excitation, causes calmness. And the mindfulness is the observation of internal and external stimuli as it happens, without any judgment and prejudgment. Therefore, since the mindfulness is a skill that allows individuals to receive events less dismal than they are really in the present so it will affective on adjustment of tragic mood, increasing cognitive flexibility and reducing the automatic cognitive process and then people would be aware of the present, they will no longer focus their attention on the past or the future. In fact, most psychological problems are usually related to events that have occurred in the past or in the future.

Also, the results of data analysis indicate that mindfulness education is effective in reducing the fear of negative evaluation of students. This finding is in line with the results of previous studies such (40), (41), (42), (47), (54), (49), (55).

Explaining the received results from the perspective of (13), it can be said: The fear of negative evaluation is a psychological fear that results from an imbalance between the person and situational or environmental demands. Also (56) believe that as the mindfulness increases, so does one's calmness, one's adaptive performance, emotional abilities, skills such as understanding, comprehending, managing, and controlling self and others feelings. Also, in explaining the results, it

can be said that the mindfulness education increases the awareness of individuals towards the present, through techniques such as attention to breathing and body and focusing attention here and now, and effect on the cognitive system and information processing and reduces the amount of rumination and fears of others being evaluated. Mindfulness education by reducing psychological worries, reducing social anxiety symptoms and increasing coping skills and emotional self-regulation, is effective in improving the components that cause fear of negative evaluation and reduces the fear of negative evaluation.

Mindfulness training requires metacognitive learning and new behavioral strategies to focus on attention and prevent rumination and tendency to anxious responses, and to spread new thoughts and reduce unpleasant emotions. Mindfulness also means paying attention to specific and purposeful ways in the present and free from judgment (29)(57). The mindfulness method through regular meditation exercises increases the person's moment-by-moment awareness of the feelings and emotions directed to his body. With these methods, people learn to be unconsciously receptive to this type of thought and to express it calmly, by becoming aware of their negative thoughts and emotions (26)(58). This helps to maintain and promote stress coping styles and reduce negative thoughts. Mindfulness also reduces negative emotions and individual incompatibilities, which play a significant role in preventing and modifying the components of negative automatic thoughts.

The present study was conducted to examine the effect of mindfulness on fear

of negative evaluation and automatic thoughts. The variables which adolescents are facing within cognitive and emotional regulation would have important clinical applications. Thus, in adolescence education programs, paying attention to the reconstruction of dysfunctional thought patterns with using a variety of mindfulness techniques can be effective in reducing adolescent problems. One of the limitations of this study was to focus on the sample group of female adolescents, so generalizing the results to other age groups and male adolescents is limited. It is recommended that other studies will perform on clinical and healthy groups in both sexes and to compare the results. Another limitation is the use of self-reporting tools, which may affect the results.

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