INVESTIGATING THE EFFECTTEACHING MINDFULNESS-BASED STRESS REDUCTION IN REDUCING PSCHOLOGICAL SYMPTOMS IN ADOLESCENT BOYS IN DORMS

OMID SALIMZADE[1] *REZA POURHOSEIN*[2] *MASOUD LAVASANI*[3]
[1] Graduated in Psychology at Tehran University, Iran
[2] Asstt. Prof.,Dept. of Psychology,University of Tehran, Iran
[3] Asstt. Prof.,Dept. of Psychology,University of Tehran, Iran

ABSTRACT

The purpose of this study was to determine the effectiveness of teaching mindfulness-based stress reduction in reducing psychological symptoms in male adolescents living in the dorms.
This study is a quasi-experimental clinical research (pre-test, post-test with a control group). In March 1391, 30 individuals were randomly selected fromHedayatnight schools (in Saghez) and 30 others were selected from Marefat night school. Randomly one of these groups was selected as the experimental group (30 persons from MarefatSchool) and the other group was selected as the control group (30 persons from HedayatSchool). The experimental group took the MBSR (mindfulness-Based Stress Reduction) Guide for eight sessions. SCL-90 questionnaires were performedon all subjects before and after the intervention. To analyze thedata, we used the covariance analyses.The results indicated that MBSR is effective in reducing psychological symptoms of anxiety, depression, Intellectual and practical obsession, somatic symptoms and hostility.

Keywords: Consciousness, Teaching Mindfulness-Based Stress Reduction, Psychological Symptoms

INTRODUCTION:

Depression is a common disorder among teens. The reported prevalence of major depression varies about 1 to 6 percent in the general population and thedegree of depression among adolescent girls is two times more than adolescent boys (Shaffer, 2005).

Estimations of the incidence of cumulative depression among older adolescents vary between 14 to 25 percent. Despite that depression disorder occurs at all childhood ages but is most common in older ages. Depressed children are often irritable, deprived of friends and family and their academic performance is impaired where in a total state, having such features, lead to a devastating social isolation.Central features of major depression disorder in children, adolescents and adults are very similar, althoughgrowth factors affect clinical pretention. The lifetime prevalence of anxiety disorders in children and adolescents varies between 8.3 to 27 percent (Sadouk and Sadouk, 2007, p. 1279). According to the prevalence of these disorders in adolescents, especially adolescents deprived of friends and family,the necessity to deal with the large amount of disorder in this population becomes more importance.

Teens confront important and challenging issues in their puberty while passing this period that include physical maturity, identity formation, the transition from childhood to adulthood or career decisions, further education and even preparing for marriage, and each can cause additional stress on their body and mind. However, parents interpretadolescents' behavior to be selfish and deviated from their own interests and have extreme judgments and attitudes towardtheir deliberate purpose for these deviant behaviors (Dix et al, 1991; quoted fromCoatsworth, 2010).In the transition period, they undoubtedly encounter new and different experiences that may bear down on their resources against stress and may endanger their mental health. In fact, studies have shown that the transition period of adolescence is a period which is determined with large amounts of stressful situations and events (Rudolph and Haman, 1999;quoted by Rudolph, 2002). Being exposed to stress is associated with many physical and psychological problems(Kampas et al, 1987; quoted in ibid.).

A great number of experts are interested in learning and applyingconsciousness techniques in their work (Allen et al, 2006). Implementing mindfulness-based interventions that are experienced with meditation techniques, is essential for professionals, and most importantly, implementing mindfulness-based interventions in adolescents is extremely increasing in both clinical populations (Bowetzin and Stones, 2005; Zyloska et al., 2007; Singh et al, 2007 ; Biyij et al, 2009) and in non-clinical populations (Wall, 2005; Beauchemin et al, 2009) and has indicated its performance in a variety of disorders and non-clinical populations. Understanding the effects of these interventions and particularly teaching Mindfulness-based stress reduction, is important in interpersonal relations and psychological symptoms of Iranian adolescents for mental health professionals.

In studying the mental health of the residential students living in night schoolss, Dehestani (1376) found that girls living in these schools indicate more psychological harm in all measures other than aggression and psychosis.

Except anxiety, aggression and fear in all cases, the amount of disorder in children living in night schools is more than the students in daily schools. In this regard, the results of Gleason (1996) reflect the fact that the students of night schools suffer physical and psychological problems more than the students of daily schools.

Meltzer et al (2000) investigated the mental health status of students in night schools. Their findings indicated that about three-quarters of the students in this type of training centers have at least one symptom or a physical or psychological problem that often has a psychological source. Hussey and Goo (2002) in their study concluded that physical and psychological problems of the girls living in night schools are more than boys.

The study of Hussey and Goo (2005) indicated that mental disorders, behavioral and educational problems of the children and adolescents who live in night schools, has been more than their peers who live with their families and in contrast, their self-esteem, communication and social skills is less. In a research by MichaeliMania (1388) about the comparison of accountability, spirit of

cooperation, general health, life satisfaction and academic performance of students in night schools and day schoolsof the West Azerbaijan province,he concluded that in the variables ofphysical problems, general health, and satisfaction with friends, school and the living place of the students at daily schools were better than those in the night schools. In a research by Hadi and Salari (1383) about comparing the anxiety level among girls and boys,night schools students had significant difference with the students of daily schools.

So far, many researches have been done in the field of mindfulness, but so far, fewer studies have been done regarding thatmindfulness practicesreduce depression, stress and anxiety in night school students, therefore the need for this research is clear. Therefore, mindfulness-based stress reduction (MBSR) practicesare done with students living in the dorms to determine its effect on the incidence of psychological symptoms such as anxiety, depression, obsession and hostility among students.

METHODOLOGY:

The study sample included 333 secondary-school boys fromnight school students in the second semester of the academic year 92-91 in Saghez city, which were attending3 night schools. From among these schools, two night schools and 60 students were randomly selected. After matching based on test scores (SCL-90-R) and obtaining written consent from parents and students, they were assigned to experimental and control groups. The students of Marefatnight schoolwas assigned to be as the experimental group and the students of Hedayatwere assigned as control group directed. The reason to choose samples from two different schools was because of the potential interaction of independent variables in the control group. All subjects were male, speaking Kurdish, and were also native. No one of the subjects had no experience of attending meditation and yoga.

Research instruments included a demographic information questionnaire and a questionnaire of illness symptoms-90 (SCL-90) in the pre-test and post-test. This questionnaire included questions on subjects such as age, school year, and their average scores in the previous year their lifetime meditation experience.

MEASURES:

Symptoms Questionnaire - 90 - Revised (SCL-90-R): This questionnaire is appropriate for the rapid assessment of the type and severity of symptoms through self-assessment, and to assess the current level of symptoms that occur over a time span of a week. SCL-90 consists of 90 descriptive words about the patient's symptoms and the patients are graded in terms of their intensity (in the range nothing= zero to severe = 4). The implementation time of SCL-90usually takes 9 to 15 minutes. The symptoms are scoredin 9 different dimensions and three overall indexes. Like MMPI-II the mean is 50 and the standard deviation is 10. Four norm groups are assigned to compare the scores: psychiatric outpatients, non-patients, hospitalized psychiatric

patients and non-patient adolescents. The three overall indices weregeneral severity index, Positive Syndrome Distress Index, and Positive Syndrome Total, and its aspects include physical (SOM), Mental-Practical obsession (OC), interpersonal sensitivity (IS), depression (DEP), anxiety (ANX), hostility (HOS), phobic anxiety (PHOB), paranoid ideation (PAR), psychosis (PSY). However, in this study, three sets of psychosis, paranoid ideation and phobic anxiety were not reported due to the lack of use.

Reliability and validity of the SCL-90-R: Internal consistency coefficient for the 9 symptoms are in the range of at least 0.79 for the paranoid ideation and 0.90 for depression. Retest reliability coefficient at one-week interval with a range of at least 0.78 for hostility and 0.90 for phobic anxiety were obtained. In testing the validity it was found that the scales of both MMPI and the general health questionnaire GHQ have divergent relation with predicted dimensionsin SCL-90-R and have convergent relationship with other measures (Derogatis, 1994; quoted fromMarnat, 1386). This questionnaire has alsoenjoyed good validity and reliability (Dobson and Mohammad Khani, 1386).

This is a study including pre-test and post-test and control group. To sort and display data, the descriptive statistic for the mean, standard deviation and percentages, were used. Analysis of covariance was used to test the hypotheses. Kolmogroff-Smirnoff was also used to check the normal distribution of the dependent variables and to test equality of variances Leven's test was used to test. Independent T-test was used to compare pre-test scores of the two groups.

The present study is a quasi-experimental clinical research (pre-test, post-test with a control group). The intervention of the experimental group, mindfulness-based stress reduction program, is an 8 session practical guide which is prepared and implemented based on Kabat-Zain's format (1990). The sessions were held for an hour and a half each week by a therapist trained based on theMindfulness-based approach. To teachthe independent variable which is the same program ofmindfulness-based stress reduction (MBSR), the instructor used lecture notes and assignments and sounds in Farsi. Each of the subjects in the experimental group was receiving the recordedtechnique of that week to practice further at home during the week. The examinees were asked to practice the techniques provided for them on CDs provided by the trainer, for six days and for 45 minutes every day. Each week, one of the body scanning techniques, meditation training, breathing training, yoga postures, etc. based on the MBSR program. The final evaluation of the participants was done simultaneously in a separate session at the end of December.Below is a brief description of the sessions. Every session was structured based on mindfulness-based stress reduction techniques. The initial session included a review of guidelines for the program participants, introducing the concept of mindfulness, a 45-minute body scan exercises, short time sitting based on meditation, introduction of the group members, discussing about the rules and principles, homework, and practicing eating based on

mindfulness. Cognitive exercised consistof viewing the relationship between worrying thoughts, mood and behavior during the sessions. Second session dealt with confronting obstacles and training breathing and relaxation skills, discussing personal experiences and discussing them in a group, discussinglast week exercises, discussing mindfulness-based attitudes, reviewing assignments, reviewing the concepts related to understanding and responding creatively and being aware of thoughts, as well as creating pleasant events. The third session dealt with being more aware of how to engage the mind, as well as breathing techniques, yoga exercises, discussinglast week assignments, meditation-basedsitting and discussing about mindfulness importance at the time.The fourth session dealt with practice on staying at the present time, sittingalong with mindfulness, discussing assignments, group discussion about the anatomy of stress and the way of coping with it along with mindfulness to it in contrast to responding to the automatic responding. Fifth session included self-acceptance and sitting along with meditation, further discussion about the anatomy of stress, discussing emotion-focused coping strategies. The sixth session dealt with issue that thoughts are not absolute external realities. Effective communication approaches werealso discussed. The Seventh Session dealt with identifying the triggering clues of concerns and examining the relationship between the activity and mood and practicing to provide the best answers. Also the technique of remaining calm in different situations, sittingalong with meditation, talking about nutrition and the way it affects a person's health. The last session dealt with the learnt materials can be applied to balance and self-care during the daily life. The meditation exercises include: sitting and eatingalong with meditation were also discussed. It is worth mentioning that the subjects were given homework after each session. Multi-Variate Analysis of Covariance (MANCOVA) was used for data analysis.

RESULTS:

The summary of the statistical data for the two groups of subjects are shown in Table 1.

Table 1 .summary of the characteristics of the subjects in both control and experimental groups

Statistical variable	Control group		Experimental group	
age	Mean (14.6)	Standard deviation (1.1)	Mean (14.5)	Standard deviation (1.4)
The Mean score of the previous year	Mean (15.35)	Standard deviation (1.9)	Mean (15.65)	Standard deviation (1.8)
The third academic year	Frequency 30	Percentage 100%	Frequency 30	Percentage 100%

Table 2 indicates mean andthe deviation of the dependent variables for the research group.

Table 2.Mean and standard deviation of the experimental and control group in variables

group		Control group		Experimental group	
		M	SD	M	SD
Hostility	Pre-test	13.00	3.85	13.44	5.14
	post-test	13.40	3.97	10.26	4.08
Anxiety	Pre-test	20.30	6.40	19.00	7.70
	post-test	19.00	7.00	15.00	5.20
Mental-practical obsession	Pre-test	23.54	7.57	21.36	6.35
	post-test	21.17	6.33	15.84	5.12
Interpersonal sensitivity	Pre-test	19.63	5.23	18.74	6.86
	post-test	19.25	5.46	16.1	6.45
Physical symptoms	Pre-test	24.11	5.16	23.87	5.63
	post-test	22.93	7.15	19.18	6.98
depression	Pre-test	27.00	10.00	28.00	8.9
	post-test	25.9	7.5	22.00	6.20

To evaluate the effectiveness of training sessions on psychological symptoms of dormitory boys multivariate analysis (Mankva) was used and the results are given in Table 3 .

Table 3. Results of multiple covariance analysis on the scores (pre-test - post-test) subscales of the SCL-9

The source of the changes	variables	df	The mean squares	F	Sig.	Eta coefficient (effect size)	Statistical power
group	Hostility	1	192/7	22.4	0/001	0/20	0/93
	Anxiety	1	768.6	22.4	0/001	0/30	0/99
	Obsession	1	576/5	16/8	0/001	0/25	0/98
	Interpersonal sensitivity	1	131/9	3/7	0/001	0/07	0/48
	physical	1	147.2	2.8	0/001	0/19	0/91
	depression	1	584	12.2	0/001	0/24	0/97
fault	Hostility	49	15/2				
	Anxiety	49	36/8				
	Obsession	49	34/2				
	Interpersonal sensitivity	49	34/8				
	Psychosis	49	64/5				

	paranoia	49	37/2				
	depression	49	16/2				
	phobia	49	59/5				

Results of multivariate analysis of covariance (Manova) with controlling the pre-test scores showed that psychological signs of subjects of two groups did not differ significantly before the study. In fact the effects of pre-test scores on the post-test was not significant. With controlling this non-significant correlation and with calculated the F ratio, mean difference between the groups in measures of hostility ($\eta 2$=0.20, P<001.0, F=22.4), mental-practical obsession($\eta 2$=0.25, P<0.001, F=16.8), physical symptoms ($\eta 2$=0.19, P<0.001, F=11.4), anxiety ($\eta 2$=0.30, P<0.001, F=22.4), depression ($\eta 2$=0.24, P<0.001, F=12.2) are statistically significant (P<0.001). Eta square or the coefficient of effect indicates that the studied intervention at least causes a 20 percent reduction in psychological symptoms of experimental group than the control group and this reduction in anxiety symptoms has been more than other psychological symptoms were. The statistical power more than 90 percent on most psychological symptoms indicates high statistical accuracy of the pre-test.

DISCUSSION:

Results of covariance analysis showed that MBSR is effective in reducing anxiety and mental-practical obsession symptoms in adolescent boys in dormitories. These studies are in accordance with Beauchemin et al (2008) , Biegel et al (2009) , Zylowska et al(2007) , Kang et al (2009) and Vøllestad et al (2011) , Sedaghat et al (2011). Constant stress can cause harmful ruminations that takes a lot of energy from the person and exacerbate stress-related experiences(Trapnell & Campbell, 1999). Although there is a certain amount of stress, that improves the performance , there is evidence that too much stress can have detrimental effects on mental and physical health (Schneidermanet al , 2005).MBSR teaches participants to see the situations and thoughts without judgment and without impulsive answers , and this allows them to increase their awareness about inner and outer experiences, and thus is a useful tool for stress reduction (Kabat - Zain, 1994).

It seems that in this study mindfulness-based Meditation with decreasing the persistent and repetitive thoughts reduces the obsession of students with changing the focus from engaging in repetitive automatic thoughts through the attention and focus on physical and mental experiences.

Paul et al(2007) reported that mindfulness -based meditation with increasing the sense of control reduces stress and anxiety symptoms associated with it, which is in accordance with the findings of this study. Kabat - Xin et al (1992) used MBSR in patients with anxiety disorders to reduce

symptoms of anxiety and panic and reported its effect on the symptoms. Shapiro et al (1998) reported that the implementation of mindfulness-based meditation improves medical students ' psychological symptoms such as anxiety and depression. Breathing and meditation trainig and muscular relaxation practice in patients with anxiety disorders specifically affects the symptoms of anxeity and improves them (Lee et al , 2007).

Chiesa&Serretti (2010) in a review study on the neurobiological effects of mindfulness based meditation reports that meditation can with increasing alpha and theta waves in the EEG increase physical relaxation and reduce stress and anxiety .

The effect size of mindfulness in this study is 0.30, and it seems that the way that most people think of anxiety as a focus on the future concerns is without emphasizing the reality of present. An anxious person is worried that it may happen in the future, without focusing on what is happening in the present. Every time a person without anxiety, in the worry process, is involved in future -oriented he would talk to himself, and will focus on the foreseeable events. Therefore mindfulness provides a substitute focus like a focus of attention which is designed for the moment, and breaks the cycle of concern and through this reduce the anxiety of students.

Results of covariance analysis showed that MBSR can be effective in the symptoms of depression and reduces these effects in adolescent boys in dormitories. These findings are consistent with studies of Shapiro et al (1998) and Anderson et al (2007). Even Dave and colleagues (2009) have reported that MBSR can be effective in the reduction of mind rumination that is a common symptom of depression. Mind rumination can be one of the strongest predictors of the onset and recurrence of depression in the future (Spasojevic J, Alloy, 2001).

Hofmann et al (2010) in a review study that was about the effects of Mindfulness -based therapies found out that these treatments have medium effect on improving the anxiety and mood symptoms in the pre-test - post- test . Effect size of these interventions in patients with anxiety and mood disorders between was 0.97 for anxiety and 0.95 for mood symptoms. The results show that mindfulness -based intervention treatment is a certain way for the treatment of mood disorders and anxiety disorders in clinical populations.

Pilkington et al (2005) also in a review study have examined the effects of yoga on depression and reported that yoga interventions had beneficial effects on depression and it is better in the future to be used as an intervention in depressed patients .

In addition to MBSR and yoga that were described mindfulness -based cognitive therapy MBCTwhich is a 8 week group intervention program based on the MBSR model (Segal et al , 2002) is introduces as an approach to prevent the recurrence of depression. Mindfulness-based Cognitive Therapy MBCT, combines the mindfulness training with cognitive therapy materials with the aim of pointing and revising the process of vulnerability and continued process of depression and relapsing these courses. Even in our country, Omidi et al(1387) MBCT has

shown the impact of MBCT on reducing psychological symptoms in patients with major depression.

The effect size of mindfulness training on depression scores of students in dormitories was 0.24 , which seems that it could redirect the attention of depressed people due to disappointment and bad thoughts, to the other aspects of the moment, such as breathing , walking or environmental stimuli or reduce the rate of depression using this way.

Analysis of covariance showed that MBSR may reduce physical symptoms in adolescent boys in dormitories.Although Mindfulness-based interventions were at first group programs that were originally designed for patients with chronic pain (Kabat - Zain, 1982) but in the past two decades have been suggested to treat a variety of mental and physical diseases and show positive effects (Prayzmn, 2008).Plews-Ogan et al (2005) have shown that mindfulness -based stress reduction can improve the mood of patients with chronic pain but does not reduces their pain . This finding is not consistent with the findings of this study about reducing the chronic pain, that can be becauseof variations in the samples of two studies. This study was low in male adolescents with chronic physical symptoms and cthis difference an be caused by this issue. There is another point here, that MBSR may be able to reduce physical symptoms of normal boys and non-clinical population. Also Witek-Janusek et al(2008) have shown that MBSR can improve immune function and quality of life in women with breast cancer .These results were previously reported by Carlson et al (2007) that MBSR lowered the blood pressure, changes in immune system of body and cortisol level and improves psychological symptoms such as mood and stress of the patients .In this study, with the effect size of 0.19 of Mindfulness on physical, may be MBSR could reduce the physical symptoms in male adolescents with improving the function of immune system. Also MBSR can manage the physical symptoms of rheumatoid arthritis, (Pradhan et , 2007), diabetes (Vytbrd et al, 2009) , patients with tumors (Kieviet-Stijnen et al , 2008) and cardiovascular disease (Tacon et al , 2003) may be effective and results in reduction of psychological symptoms associated with this physical disease. Williams et al (2001) point out that MBSR can be effective not only in psychological symptoms but also in physical and medical s symptom of students . Bohimjer et al (2010) in a review study found that MBSR has a small effect size on depression, anxiety and other psychological symptoms in patients with chronic physical disease and suggests that combination of behavioral treatments with Mindfulness-based interventions could increase the impact of these interventions.

Results of covariance analysis showed that MBSR can reduce interpersonal sensitivity in adolescent boys in dormitories. It is assumed that mindfulnessindividuals are better able to establish and sustain satisfying relationships Follette et al, 2006; Gremer et al, 2005). In other words, certain forms of interpersonal interactions can support or prevent mindfulness -based learning Burgoon et al, 2000).Mindfulness-based description, conscious behavior and non-

judgmental acceptance is less in relation with better identifying and describing emotions, more physical satisfaction, less social anxiety and interpersonal distress (Bauer et al, 2004).In this study it seems that mindfulness training effect size of0/17 , with increasing the focus of students on the details of the components of verbal and nonverbal communication reduces interpersonal sensitivity.

ANCOVA results indicated that mindfulness -Based Stress Reduction MBSR results in reducing aggression and hostility among male adolescents in dormitories. This finding is in accordance with Boglez Studies (2008) about impulsivity and aggression ADHD and ODD and conduct disorders in teenagers; Linnaeus (1993) impulsivity in borderline personality disorder ; Derezotes (2000), impulsivity and aggression in adolescent sexual offenders and Anderson et al (2007). These studies have shown that mindfulness -based interventions such as yoga and meditation can reduce aggression and impulsivity clinical disorders, that their main core is attention deficit, and impulsivity. Also Linnaeus (1993) suggests that the observation without judging is effective in reduction of impulsivity and restructuring the effects of aggressive behavior. Boglez (2008) also noted that mindfulness, conscious behavior, accepting without judgment is along with better identification and description of feelings.

In this study, with the effect size of 0/20 mindfulness on hostility and aggression seems that mindfulness can help students in dormitories to release themselves of automatic thoughts, unhealthy habits and unhealthy behavior patterns and therefore plays a significant role in the regulation of behavior and with highlighting the resolution of present experiences could bring health and happiness.

In sum, based on our other research findings, training Mindfulness -Based Stress Reduction MBSR can reduce the psychological symptoms of clinical and nonclinical populations and provide them better lives.

In this regard, mindfulness training the children and adolescents as the right style of living in the present time, on one hand just increases the attention and focus of them that are necessary for academic achievement, and on the other hand the provide them with the necessary facilities to handle and withstand the stresses of everyday. So MBSR training, at the night school dormitories could reduce the emotional stress and make progress in academic achievement of students.

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