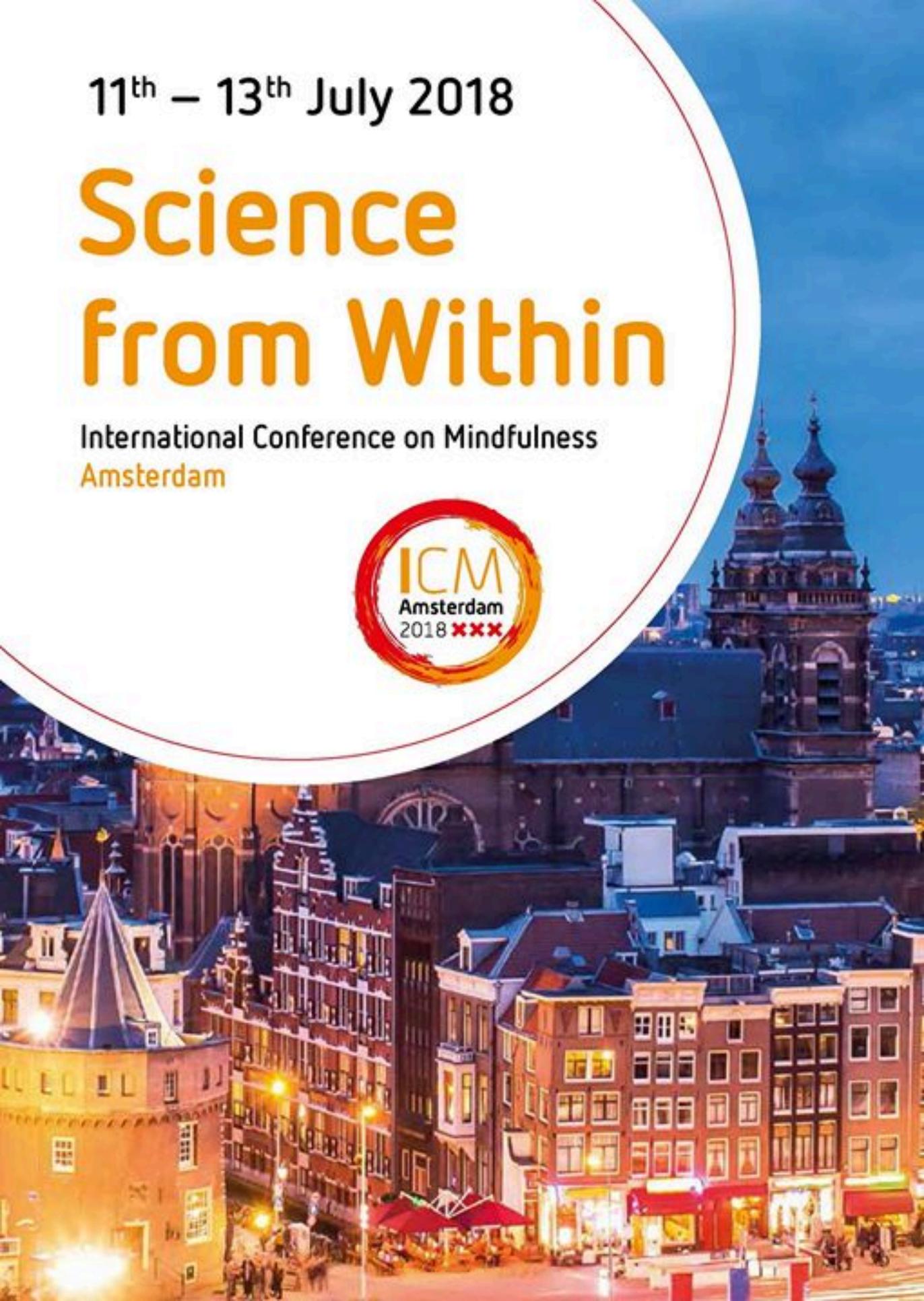


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Effectiveness of Mindfulness -based Therapy on Reducing Symptoms , Emotion Dysregulation and Mindfulness in Female Adolescents with Attention Deficit–Hyperactivity Disorder

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Objective: Attention deficit hyperactivity disorder (ADHD) is one of the most common childhood disorders that can often continue through adolescence and adulthood. Different treatment methods have been used so far for curing this disorder during adolescence or adulthood. In recent years mindfulness based treatment approaches have drawn the attention of researchers towards themselves. This research aims to investigate the effect of mindfulness based treatment on decrease of the symptoms of attention deficit hyperactivity disorder, increase of mindfulness, and improvement of emotion dysregulation and internalized problems of adolescent suffering from ADHD. **Method:** The present research is a quasi-experimental research with pretest-posttest design and control group. The target sample of the research included 30 female high school students of first and second grades in Gonabad who were suffering from attention deficit/ hyperactivity disorder. The tools which were used in the research included clinical interview, SNAP-IV Parent Rating Scale, mindfulness questionnaire, and the Difficulties in Emotion Regulation Scale (DERS). Experimental group received eight 90-minute sessions of mindfulness based treatments and control group was assigned to a waiting list. The data was analyzed by means of descriptive statistics (mean and standard deviation) and univariate analysis of covariance. **Results:** According to the results of univariate analysis of covariance it was found that experimental group in comparison to control group reported fewer symptoms of ADHD and lower scores in self-reported emotion dysregulation in posttest. Moreover, the mindfulness score of experimental group in comparison to control group increased in the posttest. **Conclusion:** The results of the research showed that mindfulness based treatment decreased the symptoms of ADHD and emotion dysregulation, and increased mindfulness.

Keywords: attention/deficit hyperactivity disorder (ADHD), emotion dysregulation, mindfulness, mindfulness-based therapy

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Effectiveness of Mindfulness-based Stress Reduction Therapy on Reducing Symptoms, Emotion Dysregulation and Mindfulness in Female Adolescents with Attention Deficit–Hyperactivity Disorder

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Abstract

This research aims to investigate the effect of mindfulness based treatment on decrease of the symptoms of attention deficit hyperactivity disorder, increase of mindfulness, and improvement of emotion dysregulation of adolescent suffering from ADHD. The present research is a quasi-experimental research with pretest-posttest design and control group. The target sample of the research included 30 female high school students of first and second grades in Gonabad who were suffering from attention deficit/ hyperactivity disorder. The tools which were used in the research included clinical interview, SNAP-IV Parent Rating Scale, mindfulness questionnaire, and the Difficulties in Emotion Regulation Scale (DERS). Experimental group received eight 90-minute sessions of mindfulness based treatments and control group was assigned to a waiting list. According to the results of univariate analysis of covariance it was found that experimental group in comparison to control group reported fewer symptoms of ADHD and lower scores in self-reported emotion dysregulation in posttest. Moreover, the mindfulness of experimental group in comparison to control group improved in the posttest. The results of the research showed that mindfulness based treatment decreased the symptoms of ADHD and emotion dysregulation, and increased mindfulness.

Keywords: attention/deficit hyperactivity disorder (ADHD), emotion dysregulation, mindfulness, mindfulness-based therapy

Introduction

Attention Deficit/Hyperactivity Disorder (ADHD) is one of the most common neuropsychiatric disorders in childhood continuing to adolescence and adulthood. Damages are manifested in behavioral, neuropsychiatric and brain levels. Behavioral damages includes hyperactivity, impulsiveness and attention deficit. At the neuropsychiatric level ADHD is followed by poor performance in tasks related to executive functions, such as response inhibition, attention and emotional regulation. In terms of brain, sectors such as neural networks in the prefrontal cortex are faced with reduced size and performance. ADHD signs pursue an evolution which is associated with a reduction of hyperactivity in adolescence. This disorder is often associated with internal restlessness, problems associated with attention deficit and executive functions, such as poor planning and impulsivity in adolescents. Although there is a strong rationale for beneficial treatment on adolescents, unfortunately, a large volume of psychological treatment has focused on



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children, and only a handful of study results have been published about adolescents. Of course, among the effective therapies, therapies focusing on the Etiology of this disorder will have more beneficial results. One of these interventions is mindfulness interventions. Mindfulness can have a particular or conditional quality. When mindfulness is a particular trait, it can remain over time and when it is a conditional quality it is developed by exercise or training .

In a study where the features of mindfulness as a trait was investigated in people with ADHD, the results showed that the overall score of mindfulness in people with ADHD was less than the score of normal people. The logic of using mindfulness in ADHD disorder is due to the overlap between mindfulness exercises and ADHD in the role of attention. Attention is one of the core symptoms in ADHD patients. It can be strengthened during meditative exercises, which constitute the majority of mindfulness treatment.

Research hypotheses

Mindfulness-based stress reduction therapy significantly reduces clinical symptoms of adolescent girls with ADHD in the experimental group compared with the control group.

Mindfulness-based stress reduction therapy improves the mindfulness ability of adolescent girls with ADHD in the experimental group compared to the control group.

Mindfulness-based stress reduction therapy improves the emotional dysregulation in adolescent girls with ADHD in the experimental group compared with the control group.

Method

The study was carried out with a control group and an experimental group as pre-test, post-test from September 2014 to January 2015. The population consisted of 12-18 year-old girl students of regular and public high schools in the first and second periods in Gonabad. Purposive sampling was used among students. The sample size consisted of 30 students with ADHD disorder. After selecting the sample, the subjects were randomly assigned to control and experimental groups. The criteria for entering the study include having 12 to 18 years old, ADHD disorder, student education in public and ordinary schools, and exclusion criteria include other clinical disorders, concomitant psychological treatment and students with no caretaker.

Finally, 15 subjects received Mindfulness-Based Intervention (MIS) for eight sessions of 90 minutes, and 15 others in the control group received no treatment. The two groups of participants were evaluated in pre-test and post-test through questionnaire of mindfulness and difficulty in emotion regulation by the student and the SNAP-IV scoring scale completed by the parents. The results of these tests were analyzed using SPSS software version 20 and via univariate analysis of covariance.

Results

The mean of ADHD symptom scores in the post test of the experimental group was reduced compared to the pre-test, and this decrease was significant compared to the control group ($P < 0.001$). The effect size in this variable was 0.74.



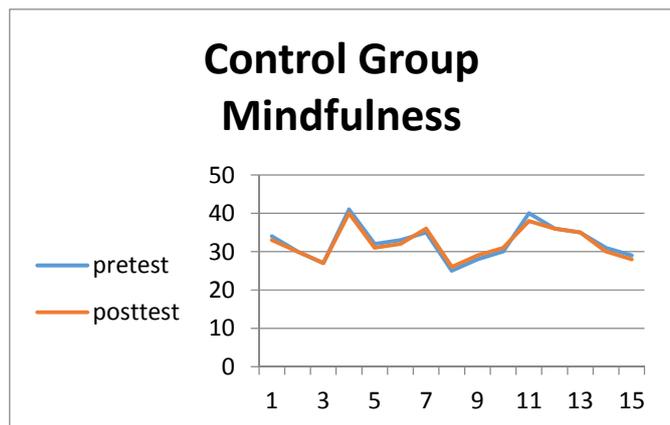
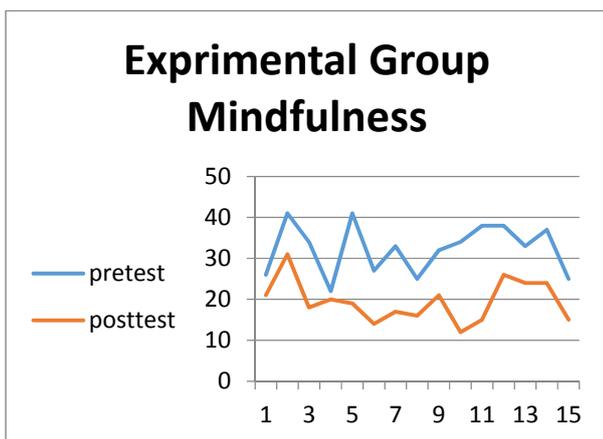
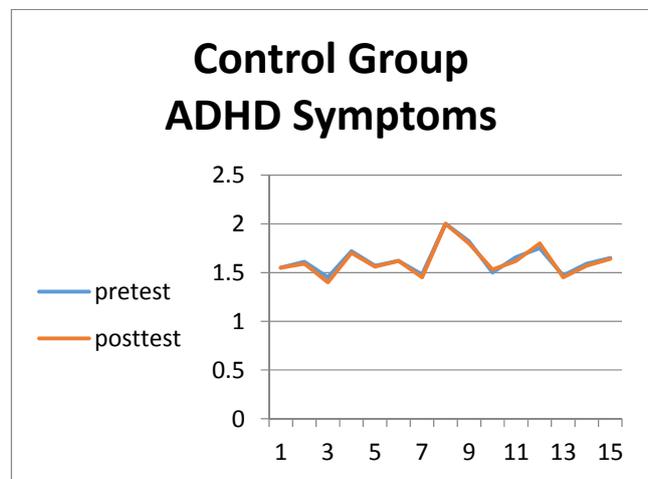
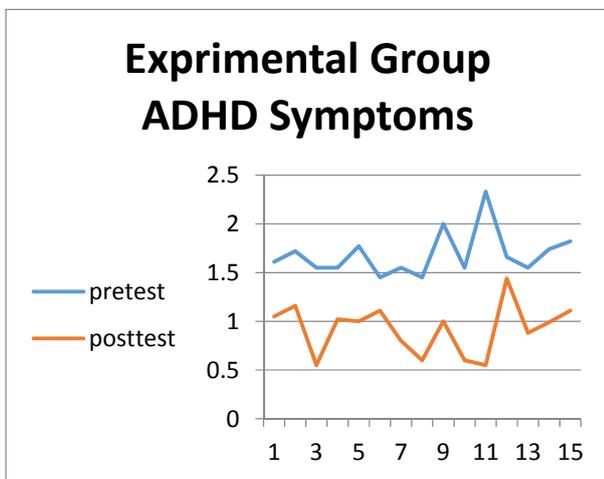
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The mean of mindfulness scores in the post test of the experimental group was reduced compared to the pre-test and this decrease was significant compared to the control group ($P < 0.001$). The effect size in this variable was 0.75.

The mean of emotional regulation scores in the post test of the experimental group was reduced compared to the pre-test and this decrease was statistically significant compared to the control group ($P < 0.001$). The effect size in this variable was 0.64.

The following charts represent the changes observed in variables and groups.

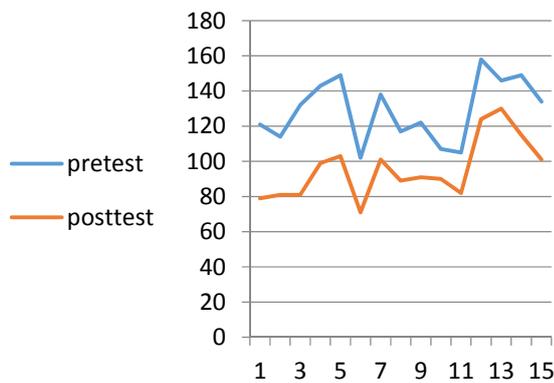




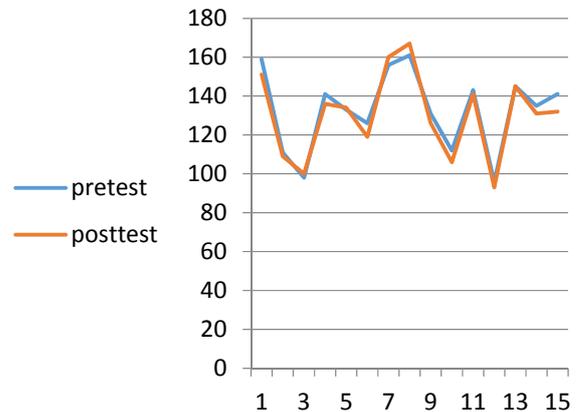
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Experimental Group Emotion Dysregulation



Control Group Emotion Dysregulation



Discussion

The aim of this study was to investigate the effectiveness of mindfulness-based therapy on ADHD symptoms, mindfulness and emotional dysregulation in adolescent girls with attention deficit hyperactivity disorder. The results showed that Mindfulness-based therapy was effective in reducing the severity of ADHD symptoms, improving mindfulness and emotion regulation in adolescent girls suffering from this disorder. In explaining the results, we can argue that mindfulness-based therapy focuses on major injuries in attention deficit / hyperactivity disorder. At the behavioral level, mindfulness focuses on increasing the ability to control attention and reducing automated responses. Through engaging attention, mindfulness exercises cause changes in the attention system of individuals with ADHD. In this way, consciousness of the moment and non-judgmental view increases, and automatic responses that can be a source of impulsivity are reduced. In this way, mindfulness therapy is effective in reducing symptoms of ADHD disorder.

The common point between mindfulness and ADHD is act with full awareness; that is, people with high

level of mindfulness are aware of it and concentrate on it while doing various activities, but those with ADHD have low momentary awareness of what they are doing and have low ability to concentrate. In mindfulness-based interventions exercises are designed in such a way that they cause mindfulness experience at the deepest level of their own. Any practice that informs a person from the moment and is associated with acceptance of that moment strengthens the mindfulness. Therefore, mindfulness exercises provide an area for improving mindfulness in people with ADHD.

Another feature of mindfulness training is self-regulation. These exercises lead to emotional regulation and attention in individuals. This regulation is done by reducing the arousal by not engaging with the experience and allowing it to pass, training attention to the current experience with open-mindedness



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coupled with acceptance and curiosity. Thus, Mindfulness-based therapy was effective in improving the emotional regulation of adolescent girls with ADHD.

Future Directions

Given that the mindfulness-based therapy on ADHD has emerged recently, more research are needed in clarifying the mechanisms of this intervention. It is very helpful to consider which types of ADHD disorders are most affected by mindfulness therapy is very important. Also, new research is required with more precise methodology. Considering which mindfulness component is most affected by the treatments among people with ADHD is also very important.

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