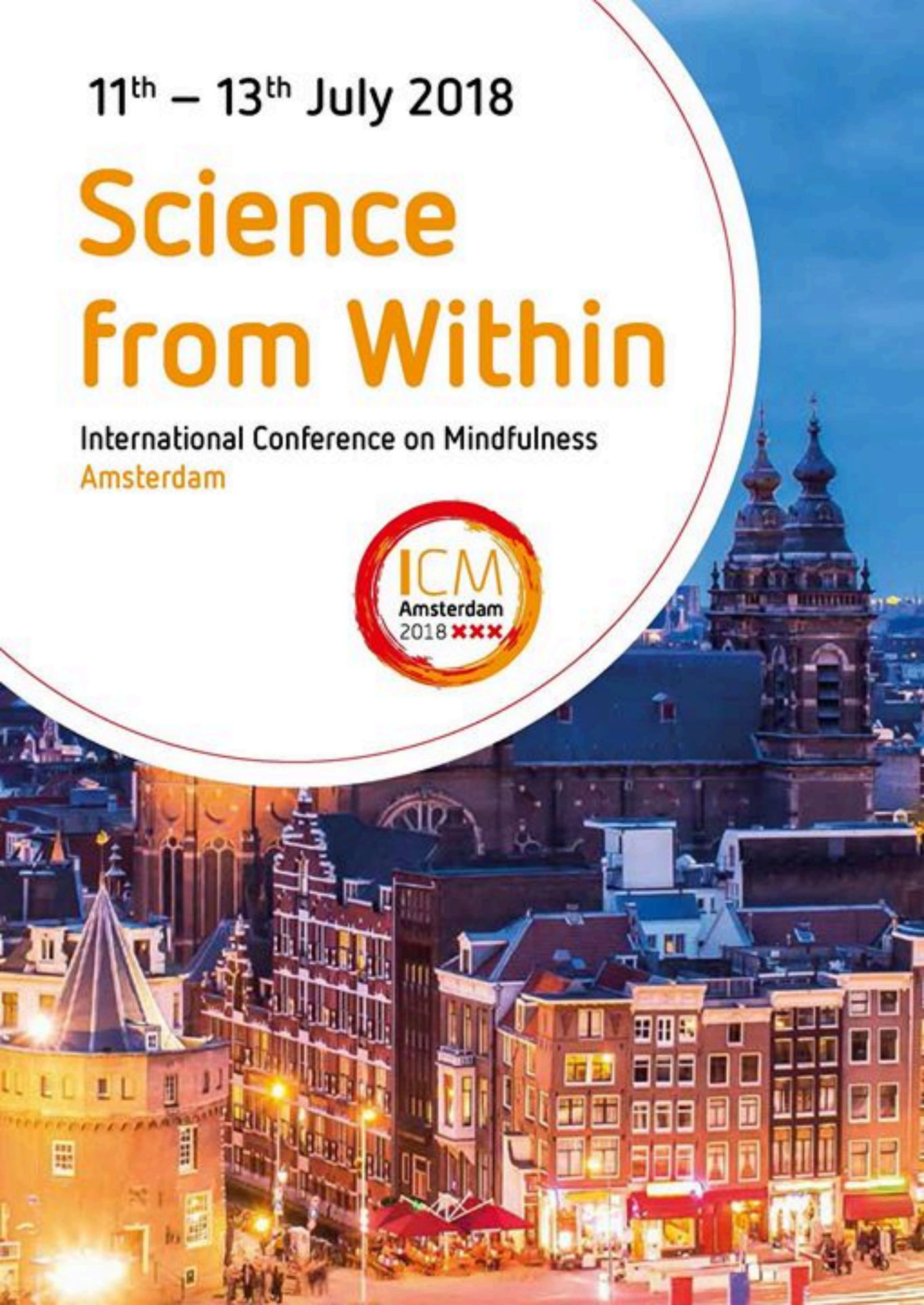


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The Effectiveness of Mindfulness-Based Cognitive Therapy (MBCT) on Externalizing Problems and Attention Functions in Girls Adolescents with ADHD

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A large number of people with Attention Deficit Hyperactivity Disorder during their adolescence suffer from externalizing problems, aggression and internal conflict, as well as difficulties in attentional functions and other main problem of this disorder. Therefore, the present study aimed to investigate the effectiveness of Mindfulness-Based Cognitive Therapy (MBCT) on externalizing problems and attention functioning in girls adolescents with ADHD. Method: The present study is a quasi-experimental research with pre-test and post-test design with control group. The participant of the study includes 29 female high school students in district 7 of Mashhad with attention deficit / hyperactivity disorder. Instruments which were used in this study included as follow; SNAP-IV, clinical interview, Achenbach youth self report (YSR) and Selective-divided attention software test. The experimental group participated in eight 90-minute sessions of MBCT and the control group was placed on the waiting list. Data were analyzed by multivariate covariance analysis. Results: The results indicated that MBCT not also reduced the main symptoms of ADHD, but also improved attention functioning and externalizing problems in experimental group than the control ones. Conclusion: MBCT led to improving the main symptoms of ADHD, reducing externalizing problems, increasing awareness and attention functioning in girls with attention deficit / hyperactivity disorder.

Keywords: *Attention Deficit / Hyperactivity Disorder, Mindfulness-based cognitive therapy (MBCT), externalizing problems, attention functions.*

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Abstract

Large number of people with Attention Deficit / Hyperactivity Disorder during their Adolescence suffer from externalizing problems, aggression and internal conflict, as well as difficulties in attentional functions and other main problem of this disorder. Therefore, the present study aimed to investigate the effectiveness of Mindfulness-Based Cognitive Therapy (MBCT) on externalizing problems and attention functioning in girls adolescents with ADHD. Method: The present study is a quasi-experimental research with pre-test and post-test design with control group. The participant of the study includes 29 female high school students in district 7 of Mashhad with attention deficit / hyperactivity disorder. Instruments which were used in this study included SNAP-IV, clinical interview, mindfulness questionnaire, Achenbach youth self report (YSR) and Selective divided attention software test. The experimental group participated in eight 90-minute sessions of MBCT and the control group was putted on the waiting list. Data were analyzed by multivariate covariance analysis. Results: The results indicated that MBCT not only reduced the main symptoms of ADHD, but also improved attention functioning and externalizing problems in experimental group than the control ones. Conclusion: MBCT led to improving the main symptoms of ADHD, reducing externalizing problems, increasing attention functioning in girls with attention deficit / hyperactivity disorder.

Keywords: Attention Deficit / Hyperactivity Disorder, Mindfulness-based cognitive therapy (MBCT), externalizing problems, attention functions.

Introduction

Attention Deficit / Hyperactivity Disorder (ADHD) is one of the most common neurodevelopmental disorders in childhood and often continuing to adolescence and adulthood and puts these people at high risk for many negative consequences. Impairments are manifested in three categories: behavioral, neuropsychological and brain levels. Behavioral impairments include hyperactivity, impulsivity and attention deficit. In neuropsychiatric level it accompanies with poor performance in tasks related to executive functions like response inhibition, attention, working memory and flexibility. In brain level they are faced to reduce size and performance in sections like neural networks related to prefrontal cortex. Behavioral problems contain internalizing and externalizing problems. Externalizing Behaviors are oriented to the outside of person and affect most people who interact with him or her. Aggression and delinquency behaviors are categorized in



externalizing problems. Cognitive impairments of this disorder cause delay in doing works and distractions. Attention is an intrinsic action in any cognitive action and refers to a series of complicated mental operations which has different types such as selected and divided attention and does not manage by a specific section of brain. Mindfulness is conceptualized as a two-parameters model that contains purposeful directing of attention to moment and encountering experience to moment with curiosity, openness and acceptance. Due to the fact that most of the researches about behavioral problems are focused on children, in this research we investigate reduction of symptoms in adolescents with ADHD and between them girl's symptoms may get worse because of their hormonal changes.

Research Hypotheses

MBCT significantly reduces clinical symptoms of adolescent girls with ADHD in experimental group compared with the control group.

MBCT significantly improves mindfulness ability of adolescent girls with ADHD in experimental group compared with the control group.

MBCT significantly reduces externalizing problems of adolescent girls with ADHD in experimental group compared with the control group.

MBCT significantly improves attentional functions of adolescent girls with ADHD in experimental group compared with the control group.

Method

Statistical society of this study contains all adolescent girls between 12 to 18 years old in first and second period of popular high schools in district 7 of Mashhad. To obtain sample, SNAP-IV rating scale delivered to volunteer students and after diagnostic interview 29 persons with ADHD have been chosen purposefully based on convenient sampling and were divided randomly in experimental group (15 subjects) and control group (14 subjects). Instruments which were used in this study included SNAP-IV, clinical interview, mindfulness questionnaire, Achenbach youth self report (YSR) and selective divided attention software test. The experimental group participated in eight 90-minute sessions of MBCT and the control group was putted on the waiting list. The results was analyzed by AVCOVA and MANCOVA with SPSS software version 22.

Results

The means of ADHD symptom scores in post-test of the experimental group was reduced compared to the pre-test and this decrease was significant compared to the control group ($P < 0/05$). The means of mindfulness scores in post-test of the experimental group was improved compared to the pre-test and this increase was significant compared to the control



group ($P < 0/05$). The means of externalizing problems scores in post-test of the experimental group was reduced compared to the pre-test and this decrease was significant compared to the control group ($P < 0/05$). The means of selective attention scores in post-test of the experimental group was improved compared to the pre-test and this increase was significant compared to the control group ($P < 0/05$). The means of divided attention scores in post-test of the experimental group was improved compared to the pre-test and this increase was significant compared to the control group ($P < 0/05$). The following graphs represent the changes observed in variables and groups.

Discussion

The aim of this study was to investigate effectiveness of mindfulness based cognitive therapy on ADHD symptoms, mindfulness, externalizing problems and attentional function in adolescents with ADHD. The results show that: MBCT was effective in reducing severity of ADHD symptoms, improving mindfulness, reducing externalizing problems and improving attentional function in adolescents with ADHD in experimental group compared with control group. The effectiveness of mindfulness based cognitive therapy on reducing severity of ADHD symptoms show that MBCT, on the one hand, can focus on improving deficiencies of people with ADHD, and on the other hand, reducing features like impulsivity as one of the main features of this disorder. MBCT also specifically seeks to enhance mindfulness feature of people and using it for persons with ADHD is because of their low ability of mindfulness and therefore it is used to enhance this feature in such people. The results show that effectiveness of MBCT on improving mindfulness in experimental group compared with control group. As can be seen from the research results that MBCT also can reduce externalizing problems in experimental group compared with control group by reducing aggression and breaking the law that are categorized as externalizing problems.

MBCT can significantly reduce attentional function deficit that is one of the major problems of people with ADHD by directing attention to moment.

Research Suggestions

Effectiveness of mindfulness interventions adolescent boys with ADHD, multi-month follow-up and comparing with effectiveness of other cognitive treatments with mindfulness are beneficial. Also other neuropsychological problems involved in this disorder such as working memory and inhibition and also family disturbance of experimental group can be investigated.

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