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تأثير التدخل القائم على اليقظة الذهنية فى القلق وتنظيم الانفعال لدى الطالبات الموهوبات

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The effect of a mindfulness-based intervention on anxiety and emotional regulation in gifted students

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Abstract. In order to improve the psychological components of gifted students, various intervention methods have been used. One of these methods is mindfulness training. The aim was to investigate and test the effect of mindfulness intervention on the anxiety and emotional regulation of gifted students. The research method was experimental with a pre-test-post-test design with a control group. ٥٠ students were selected from these individuals and randomly assigned to the research groups (٢٥ students in the experimental group and ٢٥ students in the control group). At the descriptive level, the mean and standard deviation were used, and at the inferential level, the Shapiro-Wilk test was used to examine the normality of the distribution of variables, and the t-test was used to compare the pre-tests of the experimental and control groups in the dependent variables. The results of the present study indicated the effect of a mindfulness-based intervention on anxiety and emotional regulation in gifted students.

Keywords: mindfulness-based intervention, anxiety, emotional regulation, gifted students

Introduction

Educational psychologists and education specialists pay more attention today to the investigation of the psychological, cognitive, personality, and communication characteristics of students who are more talented and intelligent compared to normal students and even those with disabilities (Raoof et al., ٢٠٢٤). Giftedness is the superiority of intelligence, cognition, creativity, and high motivation in an individual in a way that distinguishes him from most peers and enables him to offer something valuable to society. Gifted students are superior to their peers in some way (Smedsrud et al., ٢٠٢٤). Gifted and talented individuals are those who show signs of high performance in some areas, including intelligence, creativity, artistry, leadership, and special academic fields (Nicholas et al., ٢٠٢٤). Various studies have shown that gifted children excel in all areas of intelligence, physical condition, social popularity, academic achievement, emotional stability, and moral affairs (Kuznetsova et al., ٢٠٢٤).

A review of recent conceptual studies in the field of gifted psychology shows that transforming early potential capacities into experiences of remarkable progress in various areas depends on focusing on the undeniable role of non-cognitive abilities or social and emotional capabilities of individuals. In other words, the inadequacy of mere cognitive abilities in realizing learners' progress

experiences and the growing trend of unsuccessful gifted phenomenon, raise the necessity of selecting non-cognitive or cognitive concepts different from the processes involved in learning in the gifted population (Wirthwein et al., ٢٠١٧). On the other hand, it should be noted that gifted students suffer from psychological harms such as anxiety due to their high academic load, extensive cognitive tasks, and presence in a highly competitive environment (Lavrijsen & Verschueren, ٢٠٢٣).

Anxiety is an emotional and physiological response to a pervasive sense of internal danger that is easily dismissed. Anxiety is mainly a disorder of young people, with its onset usually in the mid-thirties. Anxiety is accompanied by specific physical symptoms, anxiety is a warning sign that warns of imminent danger and prepares the person to cope (Barbayannis et al., ٢٠٢٢). Anxiety is a state that occurs in almost all humans to varying degrees throughout life, so that everyone has experienced this feeling at least once (Yusufov et al., ٢٠١٩).

One of the significant and important components of gifted students is their emotional processes, such as emotional regulation (Reis & Renzulli, ٢٠٠٤). As the results of recent research show, excessive cognitive and academic tasks without considering the interests of gifted students, in addition to creating stress and anxiety for them, seriously harms their other psychological and emotional processes, such as their emotional regulation. Because damage to cognitive and emotional processes disrupts psychological and emotional processing and causes these students to experience emotional dysregulation (Rocha et al., ٢٠٢٤). When emotion regulation goes through a three-step process of recognizing the need for emotion regulation, deciding how to regulate, and adopting a strategy for regulation, it leads to overcoming a wide range of common clinical problems.

Emotion regulation helps individuals regulate emotional arousal and negative emotions, understand the emotions of others, and deal with them effectively, which leads to success and efficiency in different areas of life (Rocha et al., ٢٠٢٤). Emotion regulation helps individuals identify what emotions to express, how, and when (Valadez et al., ٢٠٢٠). This process of emotion regulation may play a role in initiating, increasing, decreasing, or maintaining positive and negative emotions in response to environmental events because it affects physiological, behavioral, and experiential processes (Mahmood, and Ahmad, ٢٠٢٢).

In order to improve the psychological components of gifted students, various intervention methods have been used. One of these methods is mindfulness training, in which the techniques and metaphors used are designed according to the cognitive level of children and adolescents, and in foreign research it has been used for children and adolescents with clinical disorders such as aggression, anxiety, post-traumatic stress disorder, obsessive-compulsive disorder, pain disorder, depressive disorder, as well as normal children and adolescents (Phan et al., ٢٠٢٢).

Mindfulness enables individuals to transform previously unconscious or automatic thoughts and behaviors into observable phenomena that are occurring in their own bodies or minds (Phan et al.,

٢٠٢٢). This state has been described as reperception. That is; what was previously the subject becomes the object. This type of cognitive intervention includes various meditations, stretching yoga, body awareness exercises, and several other exercises that show the connection between mood, thoughts, feelings, and bodily sensations. All of these exercises allow for a kind of attention to physical situations and surroundings in the present moment and reduce automatic processing (Worthen & Luiselli, ٢٠١٧).

Significance and research gap

Mindfulness intervention is effective in reducing psychological harms in different individuals (Abdul Manan et al., ٢٠٢٤). It is of great importance to address the psychological and emotional components of gifted students in order to develop them as best as possible. However, there is lack of research on the effectiveness of mindfulness intervention on anxiety and emotional regulation of gifted students.

Aims

Investigating and test the effect of mindfulness intervention on the anxiety and emotional regulation of gifted students.

Research question

Therefore, the main question of the present study is : *Does mindfulness intervention have an effect on the anxiety and emotional regulation of gifted students?*

Method

Study Design

The research method was experimental with a pre-test-post-test design with a control group. The independent variable was mindfulness intervention and the dependent variables were anxiety and emotional regulation of gifted students in the first year of high school.

Sample

The statistical population of the present study consisted of all gifted female students in the first year of high school in two schools for gifted in Mecca. The number of gifted students in the gifted school for girls is ١٠٠. In this study, purposive sampling and random assignment were used. Thus, by referring to the gifted schools for girls, the emotional regulation and anxiety questionnaire was distributed among first year girls of these two schools. After collecting and scoring these questionnaires, ٤٧ students had scores below the average on the emotion regulation questionnaire and above the average on the anxiety questionnaire (scores below ٤٠ on the emotion regulation

questionnaire and scores above ٣٢ on the anxiety questionnaire). Then, by announcing the objectives of the research to the selected students, the students who volunteered to participate in the research were identified, and there were ٥٠ of them. In the next step, ٥٠ students were selected from these individuals and randomly assigned to the research groups (٢٥ students in the experimental group and ٢٥ students in the control group). The intelligence range of these students was between ١١٩ and ١٢٦. Accordingly, these students were divided into groups based on academic year, and (first year high school) and IQ were matched. After that, the selected students were randomly assigned to experimental and control groups.

Data collection

The following tools were used to collect data.

١. *Anxiety Questionnaire*: This questionnaire was developed by Beck et al. (١٩٨٨) and measures anxiety symptoms. The Beck Anxiety Scale is a ٢١-question self-report questionnaire designed to measure the severity of anxiety. The score for each question is between ٠ and ٣, and the range of scores is between ٠ and ٦٣. A higher score indicates greater anxiety. Beck et al. reported the internal consistency of the scale as ٠,٩٢, and its one-week test-retest reliability as ٠,٧٥. In this study the internal consistency of the scale as ٠,٩٣.

٢. *Emotional Regulation Questionnaire*: The Emotional Regulation Questionnaire was developed by Gross and John (٢٠٠٣) and has ١٠ questions and two subscales measuring emotional inhibition and cognitive reappraisal in adolescents. The subject answers each of these questionnaires based on a seven-point Likert scale from completely disagree to completely agree. The range of scores on this scale is from ١٠ to ٧٠. The internal consistency coefficient in the cognitive reappraisal subscale is ٠,٧٢ for boys and ٠,٧٩ for girls. Also, the internal consistency coefficient in the emotional inhibition subscale is ٠,٦٧ for boys and ٠,٦٩ for girls (Gross and John, ٢٠٠٣). The reliability of the questionnaire in the present study was ٠,٨٧ using the Cronbach's alpha coefficient.

Procedures

Before implementing the educational intervention, students in both research groups completed the questionnaires used in the present study as a pre-test. Then, the experimental group received mindfulness intervention, while the control group did not receive this intervention during the research process. After completing the training sessions, members of both groups answered the questionnaires again (post-test). The criteria for including the study were as follows: obtaining a score below the average in the emotional regulation questionnaire and above the average in the anxiety questionnaire, attending gifted schools, having physical health, appropriate disciplinary performance, and willingness to participate in the study. The criteria for exclusion were as follows: absence from two training sessions and lack of cooperation, failure to complete the specified assignments in class, and the occurrence of unforeseen problems.

The sessions were conducted in the form of ۱۰ group training sessions for ۷۵ minutes over a period of one month by the author as follows. It should be noted that in order to comply with the ethics of the research, the students' consent to participate in the intervention program was obtained and they were informed of all the stages of the intervention. Also, the control group members were assured that they would also receive these interventions after the completion of the research process. Both groups were also assured that their information would remain confidential and there was no need to include their names.

Data analysis

At the descriptive level, the mean and standard deviation were used, and at the inferential level, the Shapiro-Wilk test was used to examine the normality of the distribution of variables, and the t-test was used to compare the pre-tests of the experimental and control groups in the dependent variables. The statistical results were analyzed using the SPSS۲۳ statistical software.

Findings

The assumption of homogeneity of variance was also tested by Levine's test, but the results were not significant, which indicated that the assumption of homogeneity of variances was met ($p > ۰,۰۵$). On the other hand, the results of the t-test showed that the difference in the mean pre-test scores of the experimental and control groups in the dependent variables (anxiety and emotional regulation) was not significant ($p > ۰,۰۵$).

To test hypotheses, mean and standard deviation of anxiety and emotion regulation scores in the pre- and post-tests for each group. As shown in Table ۱, differences existed between the mean scores of the experimental and control groups in the pre-test and post-test. Students in experimental group had higher scores in anxiety ($۴۵,۱۶ \pm ۰,۷۸۸$; $۲۰,۱۱ \pm ۰,۳۷۷$ respectively) and emotion regulation ($۲۵,۱۸ \pm ۰,۸۸۵$; $۵۷,۱۳ \pm ۰,۴۶۶$ respectively) than did those in the control group (Anxiety; $۴۵,۸۸ \pm ۰,۸۹۶$; $۴۵,۱۸ \pm ۰,۹۹۴$), and (Emotion regulation; $۲۵,۹۹ \pm ۰,۳۵۴$; $۲۶,۲۲ \pm ۲,۱۰۸$ respectively) ($P < ۰,۰۰۱$).

Table ۱. Mean and standard deviation of anxiety and emotion regulation scores in the pre- and post-tests for each group

Variables	Mean \pm SD
Anxiety	
Experimental	
pretest	$۴۵,۱۶ \pm ۰,۷۸۸$

Posttest	٢٠.١١ ± ٠.٣٧٧
Control	
pretest	٤٥.٨٨ ± ٠.٨٩٦
Posttest	٤٥.١٨ ± ٠.٩٩٤
<i>Emotion regulation</i>	
Experimental	
pretest	٢٥.١٨ ± ٠.٨٨٥
Posttest	٥٧.١٣ ± ٠.٤٦٦
Control	
pretest	٢٥.٩٩ ± ٠.٣٥٤
Posttest	٢٦.٢٢ ± ٢.١٠٨

Discussion

The present study aimed to investigate the effectiveness of mindfulness therapy on anxiety and emotional regulation of gifted students in the first year of high school. The results of data analysis showed that mindfulness intervention had a significant effect on anxiety and emotional regulation of gifted students. The results of the present study on the effectiveness of adolescent-centered mindfulness intervention on anxiety of gifted students were consistent with the findings of Abarkar et al.(٢٠٢٣), who investigated the impact of adolescent-oriented mindfulness training on academic burnout and social anxiety symptoms in students, and Bazzano et al.(٢٠٢٢) on symptoms of anxiety and depression in young adolescents, and Kamran et al.(٢٠٢٥) on gifted students.

It is believed that in the present era and in today's advanced world, children and adolescents are struggling with the stresses of modern, competitive and fast-paced life, which puts their inner peace and joy at risk and causes more and more children and adolescents to be observed with symptoms of psychological, clinical, emotional and affective damage (Nagabharana et al., ٢٠٢١).

In addition, the results of previous research indicate that some gifted students also suffer from psychological damage such as anxiety (Sunthararajah, ٢٠١٩). Accordingly, it is very important to use appropriate intervention methods that can save children and adolescents from the trap of the past and the future. Mindfulness intervention with this technique can further explain its effectiveness. This treatment allows adolescents to free themselves from thoughts of the past and future and, by focusing on the present, they can learn adaptive responses, positive psychological states, acceptance without judgment and prejudice, and normal coping methods, and by using them, they can prevent mental and psychological damage such as anxiety.

Mindfulness intervention significantly improved the emotional regulation of gifted students. Previous findings also indicated that some gifted students have vulnerable psychological processes and emotional regulation due to stress and anxiety caused by excessive homework and lack of interest in it (Campbell, ٢٠٢٤). The present finding was consistent with the results of the research of Rowland et al., (٢٠٢٣). As these researchers stated in their research results that mindfulness intervention can be considered an appropriate approach in improving the psychological components of children and adolescents.

The results of Tabatabaei (٢٠٢٢) indicated that optimistic mindfulness was influential in improving social skills and affective and cognitive empathy of girl students with depression.

Conclusion and educational implications

It can be stated that mindfulness-based exercises increase gifted students' awareness of themselves, others, and situations in the present, rather than the past and future. In this way, gifted students learn to differentiate between themselves and the context through adaptive responses rather than quick reactions to situations, taking a fresh look at themselves, their emotional processes, and their environment, and thereby create a distinction between their thoughts and actions. This process enables these students to break free from some of the personal and social barriers that are based on the confusion of thoughts and actions, and as a result, their psychological and emotional harms are reduced, and their emotional regulation is improved. In addition, mindfulness therapy can protect individuals from stress-induced mood dysfunction and rumination at the onset of stress attacks by strengthening cognitive coping processes such as positive reappraisal and strengthening emotion regulation skills such as distress and frustration tolerance, problem-solving training, and ignoring techniques. Regular mindfulness therapy practice creates positive changes in some psychological and emotional functions such as emotion control, which leads to the acquisition of self-management skills and psychological and emotional flexibility in dealing with stressful events and the acquisition of emotional skills such as emotion regulation.

Limitations

The present study, like any other study, has limitations such as the results being limited to a specific group and geographical area (gifted students in Mecca), the lack of use of other research tools except the questionnaire, and the small number of research samples. Therefore, it is suggested that this study be conducted in another statistical population, other geographical areas, and with a larger sample size to increase the generalizability of the findings.

Recommendations

Considering the findings of the present study, it is recommended that mindfulness intervention be used in psychology clinics and counseling centers and psychological services of education

departments, and it is also suggested that counselors of different levels become familiar with this intervention method and its use in reducing anxiety and improving emotional regulation in in-service and workshop courses.

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تأثير التدخل القائم على اليقظة الذهنية في القلق وتنظيم الانفعال لدى الطالبات الموهوبات

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مستخلص. من أجل تحسين الأبعاد النفسية للطلاب الموهوبين، تم استخدام طرق تدخل مختلفة. أحد هذه الطرق هو تدريب اليقظة الذهنية. هدف البحث الحالي الى دراسة واختبار تأثير تدخل اليقظة الذهنية في القلق وتنظيم الانفعال لدى لدى الطالبات الموهوبات. استخدم البحث التصميم شبه التجريبي لمجموعتين احدهما تجريبية والآخرى ضابطة، والقياسين القبلي والبعدي. تم اختيار ٥٠ طالبة من ، وتم تعيينهن عشوائياً في مجموعتي البحث (٢٥ طالبة في المجموعة التجريبية و٢٥ طالبة في المجموعة الضابطة). على المستوى الوصفي تم استخدام المتوسط والانحراف المعياري، وعلى المستوى الاستدلالي تم استخدام اختبار شايبرو ويلك لفحص اعتدالية توزيع المتغيرات، وتم استخدام اختبار t لمقارنة الاختبارات القبلية للمجموعتين التجريبية والضابطة في المتغيرات التابعة. وأشارت نتائج الدراسة الحالية إلى تأثير التدخل القائم على اليقظة الذهنية في القلق وتنظيم الانفعال لدى الطالبات الموهوبات.

الكلمات المفتاحية: التدخل القائم على اليقظة الذهنية، القلق، تنظيم الانفعال ، الطالبات الموهوبات