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Effectiveness of painting therapy on anxiety in children with specific learning disabilities

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ABSTRACT

Background and Objective: Anxiety disorders are among the most common mental health disorders in children with disabilities. Children with abnormal anxiety may have difficulty with verbal tasks. This study aimed to investigate the effectiveness of painting therapy on anxiety in children with specific learning disabilities in Kermanshah city in 2019.

Methods: The study was quasi-experimental with a pre-test, post-test, and follow-up design with a control group. The study population included all female students with learning disabilities in Kermanshah, Iran in 2019. The sample consisted of 30 children with specific learning disabilities selected by convenience sampling and divided into experimental and control groups (n=15 per group). The research tools were the Spence Children's Anxiety Scale (SCAS). At first, both experimental and control groups completed the pre-test questionnaires. Then, the children of the experimental groups received painting therapy for eight sessions (two 45-minute sessions per week). The follow-up was performed after 45 days. Data analysis was done using SPSS version 21.

Findings: The mean±SD of the anxiety in the experimental group in pre-test and post-test phases was 142.26±10.95 and 97.26±10.95, respectively, while the anxiety score of the control group in the pre-test and test phases was 138.60±11.10 and 143.93±10.55, respectively ($p<0.01$). Besides, the post-test scores had no significant difference in the follow-up scores.

Conclusion: Based on the results, painting therapy reduced anxiety in children with disabilities. Therefore, it can be concluded that painting therapy can decrease anxiety in children with disabilities. The results continued until the follow-up phase.

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Introduction

Learning disabilities stem from neurological problems. They emerge in preschool and continue into adult life. Learning disabilities are some defects in general academic skills that cause significant problems in academic achievement, job performance, and/or daily activities [1, 2]. Although they participate in appropriate education environments and have no prominent biological anomalies or severe social and psychological problems, they cannot learn specific skills (learning, writing, and mathematics) [3, 4]. Anxiety disorders are among the most common mental health disorders in children [5]. Children with abnormal anxiety may have difficulty with verbal tasks, especially with those requiring careful concentration and organization. They may seem forgetful and inattentive and have difficulty organizing their work [6]. Anxiety and emotional disorders are undesirable consequences of irrational cognitions. Experiencing some anxiety levels is normal and even necessary for the development and adaptation of a child to the environment and others [7, 8]. Psychological signs and symptoms of anxiety include fear reactions and feelings of depression. It also manifests as guilt in more severe cases. Besides, anxiety is characterized by under-functioning/over-functioning [9, 10]. Many efforts have recently been made to decline children's anxiety; however, few attempts have been made to reduce anxiety levels through painting therapy [11].

Art therapy is used to empower children to improve their self-expression, communication and social skills. Art therapy helps people in areas of awareness, reality-testing, problem-solving, revelation of unconscious elements, catharsis, and confrontation with conflicts, integrity, and individuality. As the first type of art therapy, painting opens a window to the use of other arts. Painting has been mainly used in art therapy [12]. Painting is not only a means of child incompatibility diagnosis, but also a potential factor for creativity and effective treatment, either through the intellectual and emotional development of the child or by the improvement of adult-child relationships [13]. The aim of painting therapy is not to teach painting but to provide individuals with the opportunity to freely express their feelings, emotions, needs and even knowledge using colors and lines. In painting therapy, spontaneous non-judgmental expression allows individuals to freely articulate their repressed thoughts and feelings without the threat of any adverse reaction. Painting therapy is based on the indirect expression of thoughts and feelings within an artistic process. Painting helps individuals cope with their emotions and develop a dynamic personality through projecting their inner life [14]. Painting and the visual arts are used as tools for projecting, presenting and expressing thoughts and emotions. Painting is one of the most important means of expressing inner thoughts, ideas, and needs. Paintings give us valuable information about the personality traits, mental capacities, emotional characteristics, stresses, and inner interests of children and adults [15, 16]. Rezaee et al. [17] found that painting therapy significantly reduces symptoms of anxiety, depression, and aggression in children. According to Jangi et al. [18], painting therapy, as an intervention program, effectively reduces anxiety levels in female students. Moreover, group-painting therapy is more effective than individual therapy as it improves interaction and communication levels, reduces negative emotions and affects common goals, situations and areas of personal performance (e.g., interaction with others). Khodabakhshi Koolaee et al. [2] reported that painting therapy was effective in reducing aggression and anxiety in children with cancer.

Art often helps children express their feelings and emotions. Teaching painting to children and especially to those in elementary school makes them cheerful and entertained, and helps them better deal with their anxiety. Painting enhances creativity and self-exploration in children. It also sets children's minds free of thoughts and makes them focus on their artwork; therefore, painting training can be useful in reducing child anxiety [16]. Children can externalize their internal behavior, and experience negative emotions through art. Furthermore, by scribbling some symbolic parts of their paintings, children may show the reason behind their anger and sadness. Children unable to talk about their past, present and future wishes and desires can express such feelings through using the symbolic language of drawing and painting, and by creating a structured work of art [19, 20]. Beebe et al. [21] found that painting therapy effectively reduced anxiety and depression levels in children with asthma. Therefore, in

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addition to helping children to express their emotions, painting reduces children's anxiety and other psychological problems. Tahmasebi et al. [13] have observed that interactive painting techniques make children with cancer relax and help them discharge their emotions. Accordingly, this study aimed to investigate the effectiveness of painting therapy on anxiety in children with specific learning disabilities in Kermanshah city in 2019.

Methods

Design and participant

The study was quasi-experimental with a pre-test, post-test, and follow-up design and a control group. The study population of this study included all female elementary schoolchildren with learning disabilities from learning disorder-training centers affiliated with the Special Needs Education Organization (SNEO) in Kermanshah city in 2019. The sample consisted of 30 children with specific learning disabilities selected by convenience sampling and randomly divided into experimental and control groups. The sample size was selected for each group of 15 people based on G-Power statistical software. The experimental group received eight sessions (45-minute sessions twice a week) of painting therapy, and the control group did not receive the intervention program. After the intervention sessions, a post-test was done in the control and experimental groups. Also, the follow-up was done in the experimental and control groups after 45 days. The researchers received written consent from the parents of participants for participation in the research.

Research instruments

The Children's Anxiety Scale (CAS): The CAS (Parental Form) was developed by Spence et al. [19] in a 38-item form. On this scale, scoring is performed on a five-point Likert scale. In this scale the subscales are generalized social phobia, anxiety disorder, separation anxiety disorder, and obsessive-compulsive disorder, fear of physical injury. Spence et al. [22] calculated the correlation of subscales of this scale to be 0.44. Validation of the test was examined by Ghanbari et al. [23] in Iran, and the correlation of its subscales was 0.82 in total scale score by the test-retest, and greater than 0.70 in all its subscales. In this study, Cronbach's alpha coefficient was 0.89 for the scale.

Intervention program

In this study, painting therapy included topic-based painting activities in eight 45-minute sessions, held 2 sessions a week, with no other activities. The intervention program was performed as a group for children with learning disabilities. The intervention sessions were conducted at Education Center for Children with Learning Disabilities in Kermanshah by a researcher who had received specialized courses and workshops. No treatment intervention was offered to the control group and they were placed on the waiting list so that they would receive the painting therapy at the end of the study. This therapeutic packet was adopted from Painting Therapy [24]. Table 1 presents the activities of the painting therapy sessions.

Statistical analyses

Data were analyzed by descriptive and inferential statistics such as mean, standard deviation, and analysis of covariance (ANCOVA). The Levene's test was used to examine the equality of variances. The ANOVA was utilized to test the assumption of homogeneity of line slope. SPSS version 21.0 was further used to analyze the data.

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Table 1: Structure of the painting therapy sessions

Session	Topics
First	Becoming acquainted with art therapy processes, making introductions, drawing irregular lines, playing with colors, making introductions on paper, making personal paintings.
Second	A safe place: paint a safe place for living or hiding; what makes you relax in this place?
Third	Drawing a lifeline: draw your life on a line and record specific events and moments along that line; paint the story as to how you ended up in a hospital.
Fourth	How do you see yourself? What do others think about you? How do you like to be?
Fifth	Participants are asked to imagine themselves in different roles such as a mother, a child, a housewife, and a driver and draw all of them together in a community.
Sixth	Paint one of the hard and long-lasting problems that you are dealing with now, and then paint yourself conquering that problem.
Seventh	Paint one of your dreams or nightmares. If you remember none of your dreams, paint one of your daydreams. Make a good ending out of a sad dream that you have had.
Eighth	Group painting of anger symptoms: The outlines of a person's body are drawn on a large sheet of paper. Then, the participants are asked in turn to point out from the drawings the physical signs of anger that they noticed in themselves or others.

Results

The participants included 30 female elementary-school students with specific learning disabilities, aged 8-11 years. The mean±standard deviation (SD) of the anxiety for the experimental and control groups in the post-test stage was 97.26±10.95 and 143.93±10.55, respectively. Table 2 represents the mean and standard deviation (SD) of studied variables in the experimental and control groups in the pre-test, post-test, and follow-up.

Based on the results showed that the distribution of scores in the research variable was normal. Levene's test was also used to examine the equality of variances in the experimental and control groups (F=2.208 and P=0.123). The results showed that the assumption of the equality of variances was correct and the use of analysis of covariance was allowed. Moreover, the ANOVA was utilized to test the assumption of homogeneity of line slope (F=7.45 and P=0.119). This interaction was not significant, indicating compliance with the assumption of homogeneity of line slope. Hence, the assumption of homogeneity of regression line slope was true for the research variable; and the ANCOVA test could be used.

Based on the results, the F ratio refers to the univariate analysis of covariance for the dependent variable in the post-test phase. These findings showed that there was a significant difference between the painting therapy and control groups in the dependent variable of anxiety in the post-test phase (F=137.53, P=0.001). Moreover, the F ratio of ANCOVA for anxiety (F=40.56, P=0.001) in the follow-up phase. These findings indicated a significant difference between experimental and control groups in terms of anxiety in the follow-up phase.

Table 2: Mean and standard deviation of the anxiety in experimental and control groups in the pre-test, post-test, and follow-up

Variable	Phases	Experimental group	Control group
		M±SD*	M±SD
Anxiety	Pre-test	142.26±10.95	138.60±11.10
	Post-test	97.26±10.95	143.93±10.55
	Follow-up	100.86±10.56	133.93±12.57

* M±SD: Mean±Standard deviation

Discussion

The present study aimed to investigate the effectiveness of painting therapy on anxiety in children with specific learning disabilities. The results showed that painting therapy was effective in reducing anxiety in children with disabilities. This finding is consistent with the research results of Khodabakhshi Koolaee et al. [2], Bosgraaf et al. [12], Rezaee et al. [17], Jangi et al. [18], Golamzadeh et al. [25], and Khadar et al. [26].

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Research confirms the beneficial psychological effects of some arts, such as painting, on the mental states of certain patients. Art therapy is a non-pharmacological therapeutic method that generally aims to enable a client to transform and build his/her character using art materials in a healthy and safe environment. Bosgraaf et al. [12] showed that art therapy is effective in improving psychosocial problems in children. Golamzadeh et al. [25] reported that art therapy based on painting therapy is effective in reducing the symptoms of depressive disorder in elementary school boys. Therefore, art therapy provides clients with the opportunity to express their thoughts and feelings and communicate with others. Art opens some doors and windows to the human psyche. When a client is presented with an art subject, he/she initiates a process resulting in immediate behavioral information. This process can be metaphorically used by the therapist or client as a generalization of the client's habitual response to his/her life situations. Both the left and right hemispheres of the brain are engaged in the art-making process. This process integrates all feelings, cognition, and senses, and results in a new understanding. There is a close relationship between an artwork and its creator. Painting replaces anxiety with feelings of joy and vivacity [25]. Using different colors also makes children happy. One may realize a child's problems and prevent future complications only by paying attention to the subject of a painting, the place where it is drawn on the paper, and the amount of pressure that the child puts on the paper through the pencil.

Painting therapy aims to provide children with the opportunity to freely express their feelings, emotions, needs, and even knowledge through colors and lines. The painting expresses the feelings and personality of individuals and fosters their creativity [12]. Rezaee et al. [17] reported that painting therapy is effective in decreasing aggression and anxiety among elementary school students. The benefits of painting therapy are doubled when performed in group therapy because a group with a child-centered culture provides children with the opportunity to experience emotional development. Furtheremore, children with unpleasant experiences of their family or classroom, and those who are reluctant to be with adults can receive more feedback from peers. Finally, the hostile feelings of children are better understood in group therapy sessions than in individual sessions. On the other hand, the art-making process can inherently heal, and studies emphasize the pivotal role of defense mechanisms in this experience. Art therapy seems to dramatically reduce children's anxiety by improving their self-concept and self-identity. Painting is an invaluable tool for expressing emotions and presenting thoughts, feelings, desires, and inner conflicts. Through painting, children can reflect their perceptions of the environment, as well as their anxiety and worries. Expressing anxiety and worries through non-verbal tools like paintings and drawings reduces such feelings.

Limitations

Due to lack of time and resources, the researchers only investigated the short-term effect of painting therapy on symptoms of anxiety. The participants were selected from one city; thus, the results cannot be generalized to students residing in other cities. Moreover, due to the effects of intervening variables (e.g., environmental, economic, and emotional conditions, and specific problems), the results must be carefully generalized to other populations.

Conclusion

According to the results of the present study, Painting therapy reduced anxiety in children with specific learning disabilities. Using the present results, planners, principals, educators, and teachers can provide students with proper training to prepare the ground for applying effective therapeutic interventions. Based on the results, it is recommended that therapists in counseling centers and other institutes that provide psychological services use this intervention program to reduce the anxiety of children with specific learning disabilities.

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Ethical Approval

The study was approved by the Ethics Committee of Islamic Azad University, Ahvaz branch (cod: IR.IAU.AHVAZ.REC.1399.030).

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Conflict of interest

The authors declare that they have no conflict of interest.

References

1. Fletcher JM, Grigorenko EL. Neuropsychology of learning disabilities: The past and the future. J Inter Neuropsycholog Soc 2017; 23(9-10): 930-40.
2. Khodabakhshi Koolaee A, Moghimi Nargh S. Effectiveness of group stress management training on affective control and distress tolerance of mothers of children with sensory-motor disabilities. Caspian J Pediatr 2016; 2(1): 100-6.
3. Ghaderi F, Yarahmadi Y, Ghavami B. The Effectiveness of Storytelling on Improving Auditory Memory of Students with Reading Disabilities in Marivan City, Iran. Inter J Pediatrs 2017; 5(8): 5515-24.
4. Hosseinzadeh Javary F, Jenaabadi H, Farnam A. The Effect of Modifying the Sleep Pattern on Reducing the Math Learning Disorder among Elementary School Students. Inter J Pediatrs 2020; 8(10): 12197-204.
5. Ramsawh HJ, Chavira DA, Stein MB. Burden of anxiety disorders in pediatric medical settings: prevalence, phenomenology, and a research agenda. Arch Pediatrs Adoles Med 2010; 164(10): 965-72.
6. Ogundele MO. Behavioural and emotional disorders in childhood: A brief overview for paediatricians. World J Clin Pediatr 2018; 7(1): 9-26.
7. Caouette JD, Guyer AE. Gaining insight into adolescent vulnerability for social anxiety from developmental cognitive neuroscience. Development Cognitiv Neurosci 2014; 8: 65-76.
8. Meacham F, Bergstrom CT. Adaptive behavior can produce maladaptive anxiety due to individual differences in experience. Evolut Med Public Health 2016; 2016(1): 270-85.
9. Ströhle A, Gensichen J, Domschke K. The Diagnosis and Treatment of Anxiety Disorders. Dtsch Arztebl Int 2018; 155(37): 611-20.
10. Ansari Ardali L, Makvandi B, Asgari P, Heidari A. The relationship between spiritual intelligence and marital satisfaction with psychological well-being in mothers with special-needs children. Caspian J Pediatr 2019; 5(2): 364-9.
11. Regev D, Cohen-Yatziv L. Effectiveness of Art Therapy with Adult Clients in 2018-What Progress Has Been Made? Front Psychol 2018; 9: 1531.
12. Bosgraaf L, Spreen M, Pattiselanno K, Hooren SV. Art Therapy for Psychosocial Problems in Children and Adolescents: A Systematic Narrative Review on Art Therapeutic Means and Forms of Expression, Therapist Behavior, and Supposed Mechanisms of Change. Frontiers Psychol 2020; 11: 2389.
13. Tahmasebi Z, Maghsoudi J, Talakoub S. The Effect of Painting on Depression in Children with Cancer Undergoing Chemotherapy. Iran J Nurs Midwifery Res 2017; 22(2): 102-5.
14. Gavron T, Mayseless O. Creating Art Together as a Transformative Process in Parent-Child Relations: The Therapeutic Aspects of the Joint Painting Procedure. Front Psychol 2018; 9: 2154.

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[DOI: 10.22088/CJP.BUMS.7.1.488]

15. Harpazi S, Regev D, Snir S, Raubach-Kaspy R. Perceptions of Art Therapy in Adolescent Clients Treated Within the School System. Front Psychol. 2020; 11: 518304.
16. Martin L, Oepen R, Bauer K, et al. Creative Arts Interventions for Stress Management and Prevention-A Systematic Review. Behav Sci (Basel) 2018; 8(2): 28.
17. Rezaee S, Khodabakhshi Koolaee A, Taghvaee D. Influence of painting therapy in decreasing aggression and anxiety among elementary school boys. Iran J Pediatr Nurs 2015; 2(2): 10-9.
18. Jangi S, Shirabadi A, Jani S, Pouresmali A. Effectiveness of art Therapy Based on Painting Therapy to Reduce Anxiety of Children with Stuttering. J Ilam Universit 2015; 23(2): 53-60.
19. Shamri Zeevi L, Regev D, Guttmann J. The Efficiency of Art-Based Interventions in Parental Training. Front Psychol 2018; 9: 1495.
20. Van Westrhenen N, Fritz E, Vermeer A, et al. Creative arts in psychotherapy for traumatized children in South Africa: An evaluation study. PLoS One 2019; 14(2): e0210857.
21. Beebe A, Gelfand EW, Bender B. A randomized trial to test the effectiveness of art therapy for children with asthma. J Allergy Clin Immunol 2010; 126(2): 263-6.e1.
22. Spence SH, Rapee RM, McDonald C, Ingram M. The structure of Anxiety symptoms among preschoolers. Behav Res Ther 2001; 39(11): 1293-316.
23. Ghanbari S, Rabieenejad R, Ganje P, Khoramzadeh S. Psychometric properties of preschool children anxiety scale (Teacher Form). Dev Psychol (J Iranian Psycholog) 2013; 10(37): 29-37 [Text in Persian].
24. Narimani M, Abolghasemi A, Ilbeigy Ghalenei R. Effect of art therapy (painting) on executive functions and visual motor coordination in dyslexic children. Middle East J Disab Stud 2018; 8: 50.
25. Golamzadeh M, Babapour J, Sabouri Moghaddam H. The effect of art therapy based on painting therapy in reducing the symptoms of depression disorder in elementary School Boys. Res Clin Psychol Couns 2014; 4(2): 19-32 [Text in Persian].
26. Khadar MG, Babapour J, Sabourimoghaddam H. The effect of art therapy based on painting therapy in reducing symptoms of separation anxiety disorder (SAD) in Elementary School Boys. Procedia- Social Behav Sci 2013; 84: 1697-703.

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