

# Investigating the Effectiveness of Story Therapy and Art-Play Therapy on Children with Cancer

## Abstract

The purpose of this study was to investigate the effectiveness of art-play therapy and story therapy on the problems of children with cancer admitted to the hospital. This was a semi-experimental, post-test-pre-test study with a control group. The statistical population of this research contains all children with cancer who were in the children's hospital. In this study, by using the purposeful sampling method, the desired samples were selected and replaced in three groups in a simple random manner. The experimental groups participated in story therapy, art-play therapy, and integrated therapy programs for 12 sessions. Based on the obtained results, art-play therapy and story therapy had a positive effect on the problems of hospitalized children with cancer. According to the findings of the current research, it can be stated that interventions based on art-play therapy and story therapy can be utilized to decrease the problems of children with cancer, which can be caused by the release of suppressed unpleasant emotions or inhibition of rumination. Based on this, it is suggested to use the techniques of story therapy, art-play therapy, and integrated therapy to reduce the problems of children with cancer in medical service centers, counseling, and hospitals.

**Keywords:** Children, Cancer, Story therapy, Drawing therapy

## Introduction

One of the diseases that can be considered a serious threat to the survival and mental and physical health of children is cancer.<sup>[1, 2]</sup> According to registered international reports, every year more than 300,000 children struggle with some types of cancer such as lymphoma, leukemia, bone cancer, brain and central nervous system tumors, and neuroblastoma.<sup>[3-5]</sup> With scientific advances, the children's survival rate against cancer has slowly increased day by day, but cancer is still one of the causes of death in children. The nature of the disease along with the aggressive nature of treatments such as chemotherapy, radiation therapy, surgery, and other treatments can cause short-term to long-term harmful effects such as nausea, distress, fatigue, pain, and changes in sleep and mood for children.<sup>[3, 6, 7]</sup> Children's bodies respond to cancer treatments and recover much faster than adults due to their high flexibility. However, distress and discomfort are often an inseparable part of cancer and its treatment for adults and children.<sup>[8-10]</sup>

The process of treatment, diagnosis, and complications caused by the disease

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necessitates hospitalization of the child for long periods, which is an irritating, unpleasant, and frightening experience and puts children under stress. In addition, frequent hospitalizations isolate children from their social environment, their school, and their family. They cause anxiety, depression, helplessness, and stress in them.<sup>[11]</sup> Research has shown that a significant percentage of children with cancer are at high risk of suffering from anxiety and depression.<sup>[12, 13]</sup> With the anxiety symptoms appearing, both the adaptive skills and recovery process are affected in children.<sup>[14]</sup> Indeed, depression related to cancer is a traumatic emotional response that happens following the diagnosis of the disease or during the treatment process.<sup>[14, 15]</sup> Studies also show that the risk of death in cancer patients who have depression symptoms is 25% and in patients who have received a diagnosis of major or mild depression, it is 39% higher than other cancer patients.<sup>[15]</sup> Therefore, child depression is considered an important variable in the field of childhood cancer, which must be considered in the psychosocial care of these children in the treatment process.

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Performing psychosocial care in cancer patients' routine care is considered an international standard.<sup>[16]</sup> Weis emphasized that due to the supportive nature of this type of care, psychosocial care should be included in the cancer care program. One of the programs that can be seriously used in psycho-social care for children with cancer is art therapy. Art therapy is a powerful tool that includes artistic expression methods to promote physical and mental health as well as improve cognitive and cognitive functions. Art therapy reduces negative emotions and helps children with cancer to express their deep hidden feelings such as fear and hope and to be happier than before.<sup>[17-19]</sup>

Along with art therapy, research has shown that the use of play therapy has valuable consequences for a significant percentage of children. From a scientific point of view, play can be explained as an intentional action within a certain time frame based on voluntary and accepted rules, which pursues a goal, with a feeling of excitement and happiness and different from everyday life. If we want to look at this issue from the point of view of growth, the game offers several benefits, among which we can mention the general growth in physical and physical, emotional, cognitive, and social fields.<sup>[20, 21]</sup> Along with art therapy and play therapy, another type of non-pharmacological treatment for children is story therapy. In many cases, non-verbal and verbal therapeutic communication methods including writing, drawing, and reciprocal (bilateral) storytelling are utilized to assess the psycho-social status of children.<sup>[22]</sup> Story therapy in children helps a lot in modeling. Story therapy prepares the child to deal with fears and anxieties and conveys concepts to the child without directly hitting his crystals or creating negative resistance and stubbornness in the child.<sup>[22]</sup>

According to the evidence and research support provided and considering that therapists in the field of play art and cognitive-behavioral story therapy always try to facilitate the acquisition of new behavioral skills and provide experiences that facilitate cognitive change. The purpose of this research was to investigate the effectiveness of art-play therapy and story therapy on the problems of children with cancer admitted to the hospital.

## Materials and Methods

The current study was a quasi-experimental applied research and a three-group research design with three phases: follow-up, post-test, and pre-test. To conduct the study, 36 children from 8 to 12 years old with cancer in the hospital were purposefully chosen and divided into three groups (one control group and two experimental groups of 12 people in each group). The Spence Anxiety Scale (SCAS Spence, 1998) and the Children's Depression Scale (CDS Tischer and Long, 1978) were utilized to measure the follow-up, post-test, and pre-test stages. The cognitive behavioral story therapy group and cognitive behavioral play therapy group were treated for 12 sessions each.

The inclusion criteria include informed consent for participation in the research by the parent and the child, being between 8 and 12 years old, not taking drugs to reduce anxiety and depression, not suffering from any other physical or mental illness, parents being alive and both of them alive. A parent with a child, at the beginning of chemotherapy, and both boys and girls; the exit criteria included not wanting to participate or withdrawing from continuing the work, children's inability and unwellness to participate in the current study, staying in the hospital for less than one week, and missing two or more sessions in treatment sessions. After assigning all sample groups to three study groups, a pre-test was conducted in all three groups by the children's depression and anxiety scale. Then, cognitive-behavioral story therapy and play-art therapy were performed in groups of 4 to 5 people in the hospital playroom in 12 sessions weekly (each session was 20 minutes; two sessions per week). During this time, the control group was placed on the waiting list and received only conventional medical treatments. After the treatment sessions ended, all three groups responded to the children's depression and anxiety scale in the post-test phase and two months after the end of the treatment (follow-up phase). The length of the treatment and measurement period in this research was three and a half months.

Data were analyzed through repeated measures analysis of variance. At the level of descriptive, from the Mean  $\pm$  SD, and at the level of inferential, from the variance analysis of repeated measures after checking the assumptions of normality through the Shapiro-Wilk test, the assumption of equality of error variances through the Levine test, and the assumption of sphericity through the test Macley was used.

## Results and Discussion

Based on the descriptive findings of the study, the mean age and standard deviation of the control group is  $9.33 \pm 1.30$  years, the Mean age  $\pm$  SD of the story therapy group is  $9.25 \pm 0.96$  years, and the Mean age  $\pm$  SD of the play therapy group is equal to  $9.08 \pm 1.04$ . Comparison of age through one-way analysis of variance test reveals that there is no significant difference between the three groups ( $P > 0.05$ ). Also, the comparison of the educational level of the children's gender and the order of birth of the children using the chi-square test reveals that there is no significant difference between the three groups ( $P > 0.05$ ). The mean and standard deviation of depression and anxiety for the study groups in the three stages of the research showed that in the two groups of art-play therapy and story therapy, significant changes occurred in depression and anxiety from the pre-test stage to the post-test stage and follow-up compared to the control group. Before performing the analysis of the variance of repeated measures, data distribution normality was determined through the Shapiro-Wilk test ( $P > 0.05$ ), the variances homogeneity through the Levine test ( $P > 0.05$ ), and the sphericity test through the Machley test. It was checked and it was found that the default of sphericity was not observed in anxiety. In this case, instead of the first row, which is related to the sphericity

default, has been referred to the second row of the greenhouse geysers.

The findings of repeated measures analysis of variance reveal that in the anxiety variable, the group factor ( $F = 29.98, P < 0.001$ ), the test factor ( $F = 18.33, P < 0.001$ ), and the group test interaction ( $F = 18.54, P < 0.001$ ) are significant. These results indicate that there is a significant difference in the anxiety factor between at least two of the three study groups in the

follow-up and post-test phases. Also, the results of repeated measures variance analysis showed that in depression, the group factor ( $F = 26.62, P < 0.001$ ), the test factor ( $F = 14.33, P < 0.001$ ) and the group test interaction ( $F = 26.62, P < 0.001$ ) are significant. These results show that there is a significant difference between at least two of the three research groups in the follow-up and post-test stages in the depression variable (**Tables 1 and 2**).

**Table 1. Variance analysis results of repeated measures on anxiety in three research groups (Greenhouse Geysers test due to non-observance of sphericity default).**

Source of changes	Sum of squares	Degrees of freedom	Mean square	F coefficient	P	Effect size	Power of a test
Test	256583.09	1.02	252633.01	18.33	< 0.001	0.98	1
Group	122286.86	2	61143.45	29.98	< 0.001	0.86	1
Test * Group	229592.73	2.03	113029.08	16.4	< 0.001	0.98	1

**Table 2. Results of variance analysis of repeated measures on depression in three research groups (In the conditions of compliance with the default of sphericity)**

Source of changes	Sum of squares	Degrees of freedom	Mean square	F coefficient	P	Effect size	Power of a test
Test	19459.5	2	9729.75	14.33	< 0.01	0.87	1
Group	45776.89	2	22888.44	26.62	< 0.01	0.82	1
Test * Group	25174.78	4	6293.69	18.54	< 0.01	0.9	1

After the F coefficient significance in depression and anxiety, Bonferroni's post hoc test was performed to determine the two-by-two differences between the three study groups. The findings of this test reveal that there is a significant difference in depression and anxiety between both treatment groups

(story therapy and art-play therapy) with the control group ( $P < 0.001$ ). Also, in both variables of depression and anxiety, art-play therapy had a significant difference and a greater effect than story therapy ( $P < 0.001$ ) (**Tables 3 and 4**).

**Table 3. Bonferroni test results for two-by-two comparison of research groups in anxiety variable.**

	Base Group	Comparison group	Difference of means	Standard error	P
Test	Pre-test	Post-test	39.12	0.83	<0.01
	Pre-test	Follow up	39.04	0.83	<0.01
	Post-test	Follow up	-0.09	0.08	>0.05
Group	Control group	Story therapy group	21	2.22	<0.01
	Control group	Art-play therapy group	30.43	2.22	<0.01
	Story therapy group	Art-play therapy group	9.43	2.22	<0.01

**Table 4. Bonferroni test results for two-by-two comparison of research groups in depression variable.**

	Base Group	Comparison group	Difference of means	Standard error	P
Test	Pre-test	Post-test	-29.75	1.6	<0.01
	Pre-test	Follow up	-27	1.69	<0.01
	Post-test	Follow up	-2.75	1.38	>0.05
Group	Control group	Story therapy group	-31.89	4.14	<0.01
	Control group	Art-play therapy group	-49.78	4.14	<0.01
	Story therapy group	Art-play therapy group	-17.89	4.14	<0.01

This research, which was conducted to compare the effectiveness of group art-play therapy and story therapy on depression and anxiety in children with cancer, based on the principles, framework, and rules of the cognitive-behavioral approach, determined that after the intervention, the average anxiety score of children in Both art-play and story therapy groups have a significant difference compared to the control or control group, and the anxiety of these two groups has decreased significantly. In other words, it can be said that the art of play and behavioral story therapy has been effective in decreasing the anxiety of children with cancer and hospitalization. Also, the findings of the present study showed that art-play therapy was more effective than story therapy in reducing the anxiety of children with cancer. This finding is in line with the findings of Alty *et al.*'s research, which showed that painting, writing, and mutual (bilateral) storytelling techniques can reduce the anxiety levels of hospitalized children.<sup>[19]</sup> The findings reveal that the art therapy process is significantly effective for psychological complaints such as anxiety and depression and helps to improve the life quality of patients.<sup>[17, 23, 24]</sup> Hass-Cohen *et al.*<sup>[24]</sup> also showed the effect of art therapy in reducing negative emotions such as anxiety and depression. Shella<sup>[25]</sup> also showed in her study that the use of art therapy along with medical treatments helps to improve the mood and reduce the anxiety of patients.

Considering that the anxiety of the participants in the current study is mixed with experiences related to the disease and the hospital environment; it seems that the superiority and relative advantage of the art-play therapy and story therapy program is that the aforementioned interventions, especially art-play therapy, are a combination of several special interventions such as painting therapy, psychosexual therapy, play therapy, cognitive-behavioral therapy, and group therapy. This intervention contains 12 treatment sessions that are dedicated to the needs of children with cancer. Also, art-play therapy pays more attention to children's anxiety compared to behavioral story therapy, so three treatment sessions focus on fear and anxiety control in this treatment program and step by step to this category. In the first session, the focus was on identifying emotions, determining the intensity of emotions, identifying physical states, and teaching relaxation. The second session focused on identifying anxiety-provoking thoughts, introducing the treatment model, and talking with the child about mental traps, and finally, the third session focused on facing fears or anxiety-provoking situations and preventing avoidance of these situations. In the time intervals between sessions, weekly programs were presented to children to practice tactics. Therefore, it can be concluded that the art of cognitive-behavioral play therapy is effective in reducing anxiety and improving the emotional and psychological state of children with cancer and chronic diseases.

Based on another part of the results of the current research, it was found that after the interventions, the children's average depression score in both intervention groups was significantly different from the control group, and the depression of these two groups was significantly reduced. Of course, it can be said that art-play therapy has a stronger effect in reducing

depression than story therapy. This finding is in line with the research results of Woodgate *et al.* They explained that painting serves as a therapeutic intervention, providing children with a refuge or helping to relieve them of existential anxiety and feelings of isolation.<sup>[13]</sup> Also, Adamson emphasized the effect of play therapy on improving the mental health of children with cancer and reducing their depressive symptoms.<sup>[21]</sup>

## Conclusion

The findings reveal that art-play therapy was a more effective therapy than story therapy and story therapy as an effective therapy compared to the control group reduced depression and anxiety in children with cancer. These evidence and results provide preliminary support for the validity and possibility of implementing art-play therapy as the priority and then story therapy to help children with cancer and their families deal with their anxiety and depression. It is suggested that, first of all, treatment centers for children with cancer, considering that reducing the level of anxiety and depression of children can help these children recover, along with necessary and common medical treatments, with the use of experienced nursing staff. In the next degree, it is suggested that the techniques and methods of story therapy and art-play therapy should be taught to ready mothers so that after the discharge of their children from the hospital, they can utilize these treatments at home and improve their children's depression and anxiety.

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## Conflict of interest

None.

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## Ethics statement

None.

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