

Examining the Impact of Story Therapy and Art-Play Therapy on Pediatric Cancer Patients

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Abstract

This study aimed to evaluate the effects of art-play therapy and story therapy on the challenges faced by children with cancer hospitalized in a medical setting. The study was designed as a semi-experimental study, utilizing pre-test and post-test assessments with a control group. The target population consisted of children with cancer currently receiving care at a children's hospital. A purposive sampling method was used to select the participants, who were then randomly assigned to one of three groups. The experimental groups participated in 12 sessions of story therapy, art-play therapy, or a combination of both. The results showed that both art-play therapy and story therapy positively influenced the issues faced by hospitalized pediatric cancer patients. The findings suggest that these therapeutic interventions, which help release repressed negative emotions and reduce rumination, can significantly alleviate the challenges experienced by these children. Therefore, it is recommended that story therapy, art-play therapy, and their integration be incorporated into therapeutic practices in hospitals, counseling centers, and other healthcare environments to support children battling cancer.

Keywords: Drawing therapy, Children, Story therapy, Cancer

Introduction

Cancer represents a major threat to the survival and overall health, both mental and physical, of children [1, 2]. According to international reports, over 300,000 children are diagnosed with various types of cancer each year, including lymphoma, leukemia, bone cancer, brain and central nervous system tumors, and neuroblastoma [3-5]. Despite advancements in treatment and an increase in survival rates, cancer continues to be a leading cause of death in children. The disease's aggressive nature, combined with harsh treatments such as chemotherapy, radiation therapy, surgery, and others, leads to short- and

long-term harmful effects such as nausea, distress, fatigue, pain, and changes in sleep and mood [3, 6, 7]. Children typically recover faster from cancer treatments than adults due to their higher resilience, but they still face significant distress, which remains a consistent part of both the illness and its treatment [8-10].

The treatment, diagnosis, and complications associated with cancer often necessitate prolonged hospitalizations, an experience that can be stressful, irritating, and frightening for children. These extended stays can also isolate children from their families, schools, and social environments, leading to feelings of anxiety, depression, helplessness, and stress [11]. Research indicates that a significant number of children with cancer are highly vulnerable to developing anxiety and depression [12, 13]. Symptoms of anxiety in these children can severely affect their adaptive abilities and hinder their recovery process [14]. Depression resulting from cancer, either following the initial diagnosis or during treatment, is a traumatic emotional response [14, 15]. Studies show that children

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Received: 16 June 2023; Accepted: 09 September 2023

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How to cite this article: Wempe MF, HendricksFerguson VL, Thackray J, Raybin J. Examining the Impact of Story Therapy and Art-Play Therapy on Pediatric Cancer Patients. *Int J Soc Psychol Asp Healthc.* 2023;3:49-54. <https://doi.org/10.51847/EIL68115uE>

with cancer who exhibit depressive symptoms have a 25% higher risk of death, while those diagnosed with major or mild depression have a 39% higher risk compared to other cancer patients [15]. Hence, addressing depression is a crucial aspect of psychosocial care for children with cancer during their treatment journey.

Psychosocial care is now considered a standard part of cancer treatment, recognized internationally as essential to patient well-being [16]. Weis emphasized the importance of integrating psychosocial support into cancer care programs, acknowledging its supportive nature. One effective method of psychosocial support in pediatric oncology is art therapy. Art therapy, a powerful tool for enhancing emotional and mental health, uses creative expression to help children with cancer manage negative emotions. It enables them to express suppressed feelings such as fear and hope, leading to improved happiness and emotional well-being [17-19].

In addition to art therapy, play therapy has also shown significant positive outcomes for many children. From a scientific perspective, play can be understood as a structured activity within a set timeframe, guided by accepted rules, and pursued with excitement and joy. It serves as an important developmental tool in physical, emotional, cognitive, and social growth for children [20, 21]. Another non-pharmacological treatment gaining recognition is story therapy, which utilizes verbal and non-verbal communication techniques like storytelling, writing, and drawing to assess and address a child's psychosocial needs [22]. Story therapy helps children confront fears and anxieties by providing models for emotional coping. It conveys important concepts without causing resistance or negative emotional reactions.

Drawing upon established research and evidence, this study sought to examine the effectiveness of art-play therapy and story therapy in alleviating the challenges faced by hospitalized children with cancer.

Materials and Methods

This research followed a quasi-experimental design with a three-group model, incorporating three key stages: pre-test, post-test, and follow-up. A total of 36 pediatric cancer patients aged 8 to 12 were selected based on purposeful sampling and divided into three groups—one control group and two experimental groups, each containing 12 participants. To evaluate anxiety and depression across all phases, the Spence Anxiety Scale

(SCAS, 1998) and the Children's Depression Scale (CDS, Tischer and Long, 1978) were administered. The experimental groups, one undergoing cognitive-behavioral story therapy and the other receiving cognitive-behavioral play therapy, participated in 12 therapy sessions.

Inclusion criteria involved obtaining informed consent from both the child and their parent, being aged between 8 and 12, not currently receiving anxiety or depression medication, free from other physical or mental illnesses, and both parents being alive. Additionally, children were at the start of chemotherapy treatment and were either male or female. The exclusion criteria included non-participation or withdrawal, any incapacity to participate in the study, a hospital stay of less than one week, or missing two or more treatment sessions. After random assignment, a pre-test was administered using the depression and anxiety scales. Following this, the experimental groups received 12 weekly sessions (each lasting 20 minutes, twice a week) of either cognitive-behavioral story therapy or play therapy in a hospital playroom. The control group received only standard medical care and was placed on a waiting list. Once the intervention period concluded, all groups completed the depression and anxiety scales during the post-test and follow-up phases, two months later. The study spanned a total of three and a half months.

Statistical analysis was performed using repeated measures ANOVA, with descriptive statistics presented as Mean $\pm$ SD. Normality was assessed via the Shapiro-Wilk test, homogeneity of variance via the Levene test, and sphericity using the Mauchly test.

Results and Discussion

In the study, the mean age of participants was 9.33 ± 1.30 years for the control group, 9.25 ± 0.96 years for the story therapy group, and 9.08 ± 1.04 years for the play therapy group. One-way ANOVA showed no significant age differences between the groups ($P > 0.05$). Further analysis with the chi-square test revealed no significant differences in terms of educational level, gender, or birth order ($P > 0.05$).

Significant changes in depression and anxiety levels were observed in both the art-play therapy and story therapy groups from pre-test to post-test and follow-up compared to the control group. Before performing repeated measures ANOVA, normality was confirmed with the Shapiro-Wilk test ($P > 0.05$), homogeneity of variance

was checked using the Levene test ($P > 0.05$), and sphericity was assessed through the Mauchly test. A violation of sphericity was found in the anxiety data, and thus, the Greenhouse-Geisser correction was applied.

The repeated measures ANOVA revealed significant effects for anxiety: group ($F = 29.98$, $P < 0.001$), test ($F = 18.33$, $P < 0.001$), and group-test interaction ($F = 18.54$, $P < 0.001$). These findings indicate significant

differences in anxiety scores between at least two of the groups during both post-test and follow-up. Similarly, for depression, significant effects were observed for the group ($F = 26.62$, $P < 0.001$), test ($F = 14.33$, $P < 0.001$), and group-test interaction ($F = 26.62$, $P < 0.001$), pointing to notable differences in depression levels between the groups during the post-test and follow-up phases (**Tables 1 and 2**).

Table 1. Variance analysis results of repeated measures on anxiety in three research groups (Greenhouse Geyser 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

Following the significant findings in the F coefficients for depression and anxiety, Bonferroni's post hoc analysis was conducted to identify pairwise differences across the three groups. The results indicated that both experimental groups (story therapy and art-play therapy)

demonstrated a significant reduction in depression and anxiety compared to the control group ($P < 0.001$). Furthermore, art-play therapy showed a stronger and more pronounced effect on both depression and anxiety compared to 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

Group	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 study aimed to evaluate the effects of group art-play therapy and story therapy on the anxiety and depression levels of children with cancer, using cognitive-behavioral principles and methods. The results revealed that both art-play therapy and story therapy led to significant reductions in anxiety compared to the control group. In particular, the art-play therapy group showed greater improvement in anxiety levels than the story therapy group. This finding supports Altay *et al.* research, which indicated that art-based interventions such as painting, writing, and collaborative storytelling could effectively reduce anxiety in hospitalized children [19]. Additionally, numerous studies have emphasized the benefits of art therapy for managing psychological symptoms like anxiety and depression, as it enhances the patient's overall well-being [17, 23, 24]. Hass-Cohen *et al.* [24] further affirmed that art therapy is effective in mitigating negative emotions like anxiety and depression. Similarly, Shella [25] found that combining art therapy with conventional medical treatments helps to improve patients' moods and lower anxiety levels.

The advantage of both art-play therapy and story therapy in addressing anxiety lies in their comprehensive therapeutic approaches, especially the art-play therapy program, which integrates a variety of specialized interventions. These include painting therapy, psychosexual therapy, play therapy, cognitive-behavioral therapy, and group therapy. In this study, 12 treatment sessions were designed specifically for children with cancer. Art-play therapy places more emphasis on addressing anxiety, with three sessions dedicated to anxiety control, focusing on recognizing and managing emotions, identifying anxiety-provoking thoughts, and confronting fears. Between sessions, children were assigned weekly tasks to practice the strategies learned. Therefore, it can be concluded that art-play therapy, with its focus on cognitive-behavioral techniques, is particularly effective in reducing anxiety and improving the emotional and psychological health of children with cancer.

The study also found that both treatment groups showed significant reductions in depression, with art-play therapy proving to be more effective than story therapy. This finding aligns with Woodgate *et al.* research [17], which highlighted the role of art therapy in providing

children with a therapeutic escape and reducing feelings of anxiety and isolation. Similarly, Adamson's work underscored the positive impact of play therapy on improving the mental health of children with cancer and alleviating their depressive symptoms [21].

Conclusion

The results of this study indicate that art-play therapy proved to be more effective than story therapy in reducing depression and anxiety among children with cancer. Both therapeutic approaches, however, were more effective than no treatment, as they significantly alleviated emotional distress in comparison to the control group. These findings offer preliminary evidence for the feasibility of implementing art-play therapy as a primary intervention, followed by story therapy, to assist children with cancer and their families in managing anxiety and depression. It is recommended that cancer treatment centers, recognizing the potential benefits of reducing anxiety and depression in children, consider incorporating these therapeutic methods alongside standard medical care, with the support of skilled nursing professionals. Additionally, it would be beneficial to train mothers in the use of art-play and story therapy techniques so that they can apply these strategies at home to continue supporting their children's emotional well-being after hospital discharge.

Acknowledgments: None

Conflict of Interest: None

Financial Support: None

Ethics Statement: None

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