

## Comparing the Effectiveness of Writing Therapy and Story Therapy on Anxiety and Depression of Children with Cancer

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### Quantitative Study

#### Abstract

**Background:** Anxiety and depression are among the factors requiring psychological treatment for children with cancer. The current study aims to compare the effectiveness of writing therapy and story therapy on anxiety and depression of children with cancer.

**Methods:** The current study was quasi-experimental with pre-test and post-test stages of writing therapy and story therapy, and a control group. The study's statistical population consisted of 137 children aged 9 to 13 years with various types of cancer at the King Fahad National Center for Children's Cancer and Research (KFNCCC&R) in Riyadh, Saudi Arabia, In 2021. Simple random sampling was used to select 48 people, who were divided into three groups of 16. The Spence Children's Anxiety Scale (SCAS) was used to measure the anxiety of children with cancer and the Lang and Tisher Children's Depression Scale (CDS) was used to measure depression. The current study used the SPSS software to conduct repeated measures analysis of variance (ANOVA).

**Results:** The group factor was significant for the variables of anxiety ( $F = 28.98, P < 0.001$ ) and depression ( $F = 27.62, P < 0.001$ ). Bonferroni post-hoc test revealed a statistically significant difference between the writing therapy and story therapy groups and the control group regarding anxiety and depression. Writing therapy had a significant difference and a stronger effect than story therapy ( $P < 0.001$ ).

**Conclusion:** Story therapy and writing therapy were equally successful in lowering anxiety and depression in young patients with cancer. Children with cancer should have access to skilled nursing personnel, psychotherapists, and intervention techniques in addition to necessary and conventional medical therapies.

**Keywords:** Child; Neoplasms; Anxiety; Depression

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## Introduction

Cancer is one of the diseases that pose a grave threat to children's survival and physical and mental health (Sepanta, Shirzad, & Bamdad, 2019; Abdoli, Rafeian, & Haji-Adineh, 2019). Cancer remains one of the leading causes of disease-related mortality in children, although the rate of cancer survival for children is slowly rising as human knowledge advances (Al Qadire et al., 2018). Children may experience pain, fatigue, distress, nausea, and changes in sleep and mood due to the aggressive nature of the disease and its treatments, including chemotherapy, radiation therapy, surgery, and others (Long, Lehmann, Gerhardt, Carpenter, Marsland, & Alderfer, 2018). Due to their greater adaptability to cancer treatments, children's bodies respond and recover more quickly than adults; however, discomfort and distress are frequently inseparable from cancer and its treatment for both children and adults (Toledano-Toledano et al., 2021).

The process of disease diagnosis, treatment, and complications necessitates the long-term hospitalization of the child, which is an unpleasant, irritating, and frightening experience that causes anxiety in children (Motamedi & Arefi, 2018). Additionally, frequent hospitalizations isolate children from their family, school, and social environment, leading to depression, anxiety, stress, and feelings of helplessness (Katz et al., 2018). According to research, a significant proportion of children with cancer are at high risk for depression and anxiety. The onset of anxiety symptoms impairs children's recovery process and adaptive skills. On the other hand, cancer-related depression is a traumatic emotional response that occurs after a cancer diagnosis or during treatment (Rahmani, Azadi, Pakpour, Faghani, & Afsari, 2018).

Writing therapy is one of the non-drug treatments that can help with negative emotions, and its use alone or in combination with other treatments has grown a lot in the past few years. Researchers have found that writing about past emotional events or problems is suitable for mental and physical health. Analyzing a very emotional event turns it into a story, where the emotions and details that were not said or did not make sense before taking on new life as words and meanings (Park et al., 2018). Awareness of everything that is not said and cannot be seen makes the event less important and improves how it turns out, because it is scarier not to know something (Gurtovenko et al., 2021). In this way, writing therapy is a lot like psychoanalytic methods. It differs from other treatment methods, because it does not require long, continuous face-to-face sessions. It can also be taught and done automatically without a face-to-face visit, and the therapist is less involved in the treatment process (Wikman, Mattsson, von Essen, & Hoven, 2018).

Story therapy is another non-drug treatment for children. Verbal and non-verbal therapeutic communication techniques, such as drawing, writing, and mutual storytelling, are frequently used to evaluate the psychosocial status of children. Story therapy with children is very beneficial for modeling (Mack et al., 2020). Story therapy prepares the child to face anxieties and phobias and imparts concepts without directly influencing the child's beliefs or provoking negative resistance and a sense of stubbornness. When children are asked to draw a picture and write a story about it, they have the opportunity to express their thoughts and emotions (Vazifeh, Hojjati, & Farhangi, 2020).

Anxiety and depression are essential variables in childhood cancer, and they must be taken into account during the psychosocial care of these children undergoing treatment. Until now, few studies on children with cancer have combined writing

therapy and story therapy. Therefore, the necessity of this study has been established, which is also one of the study's novel features. This study aims to compare the effectiveness of writing therapy and story therapy on anxiety and depression of children with cancer.

## **Methods**

This study was a quasi-experimental application of writing therapy, story therapy, and a control group with two pretest-posttest and follow-up stages. One hundred thirty-seven children aged 9 to 13 years with various types of cancer (leukemia, kidney tumor, brain tumor, and other cases) at the beginning of chemotherapy at King Fahad National Center for Children's Cancer and Research (KFNCCC&R) in Riyadh, Saudi Arabia, in 2021, constituted the statistical population of the study. A total of 48 individuals were selected by purposeful sampling and then assigned to three groups of 16 individuals. Inclusion criteria included parents' and children's informed consent to participate in the study, age between 9 and 13 years, absence of anti-anxiety and anti-depression medications, absence of other physical and mental illnesses, initiation of chemotherapy, and both sexes. Children's illness, inability to participate in treatment sessions, hospital stays of less than one week, and absence of two or more treatment sessions were included in the exclusion criteria. Ethical considerations also included: maintaining complete confidentiality, having complete freedom and authority to withdraw from the study, providing comprehensive information about the study and obtaining written consent, and using the data only for the research objectives.

After the research period, the control group was subjected to free and intensive writing therapy and story therapy. In addition, the Ethics Committee of King Saud bin Abdulaziz University for Health Sciences, Saudi Arabia, approved this study. During the pre-test and post-test phases, the anxiety and depression levels of the three research groups were measured using the instruments presented below.

The Spence Children's Anxiety Scale (SCAS) (Spence, 1998) was used to measure the anxiety of children with cancer, with 38 items based on the criteria presented in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). This scale has two versions, one for children (45 items) and one for parents (38 items), the latter used in the present investigation. Scoring is based on a 4-point Likert scale: never (0), sometimes (1), often (2), and always (3), and there are six areas, including separation anxiety, social anxiety, obsessive-compulsive disorder, panic-market phobia, pervasive anxiety, and fear of physical harm. The total score is calculated by adding the points for each item; an increase in scores indicates an increase in anxiety. According to Spence (1998) report, this scale's general anxiety reliability is 0.92, and 0.60 to 0.82 has been reported for the subscales. According to the research of Francis et al. (2022), the Cronbach's alpha for this questionnaire ranges between 0.62 and 0.89, and the scale's construct validity has been investigated and confirmed by confirmatory factor analysis. This scale's Cronbach's alpha was 0.92 in the present study.

This research utilized the Children's Depression Scale (CDS) (Lang & Tisher, 1978) to measure depression. This questionnaire's response scale is a five-point scale consisting of entirely false (1), false (2), do not know (3), true (4), and entirely true (5), and a total score is calculated by adding the scores of each item. In general, a rise in scores indicates depression among children. This scale has been the subject of extensive research in various countries. Its content validity can be assessed by looking at how closely its scores correlate with those on a questionnaire. The Eysenck Personality Questionnaire (EPQ) and the Institute for Personality and Ability Testing

(IPAT) have good convergent validity, as determined by the correlation analysis of two implementations separated by 7 to 10 days, with a retest end of 0.74 and Cronbach's alpha of this questionnaire ranging from 0.82 to 0.95 (Tisher, Lang-takac, & Lang, 1992). In this study, the Cronbach's alpha for the depression scale for children was also 0.87.

After randomly assigning the sample group to three research groups, a pre-test was administered to all three groups using the children's anxiety and depression scales, followed by writing therapy (Pennebaker, 1997) and story therapy (Chavis, 2011) in groups of four to five people. The Amir Hospital game was played weekly for eight 90-minute sessions. During this period, the control group was placed on a waiting list and only received standard medical care. All three groups responded to the anxiety and depression scales of children again in the post-test phase, following the conclusion of the treatment sessions. The desired treatments were also presented to the control group's children after the study. Tables 1 and 2 detail the sessions associated with writing therapy and narrative therapy, respectively.

In this study, repeated measures analysis of variance (ANOVA) and Bonferroni post-hoc test was used to examine and compare the groups in the following section. The intended analyses were conducted using SPSS software (version 23, IBM Corporation, Armonk, NY, USA).

## Results

The mean  $\pm$  standard deviation (SD) of the control group age was  $10.21 \pm 1.16$  years, the mean  $\pm$  SD of age of the writing therapy group was  $10.39 \pm 1.27$  years, and the mean  $\pm$  SD of age of the story therapy group was  $10.08 \pm 1.12$  years. Table 3 displays the pre- and post-test anxiety and depression scores for each of the three groups.

According to table 3, the mean and SD of anxiety and depression for the research groups in the three stages of the study revealed that there were significant changes in anxiety and depression from the pre-test stage to the post-test stage in the writing therapy and story therapy groups compared to the control group. Prior to doing the repeated measures ANOVA, the normality of the data distribution, the homogeneity of variances, and the sphericity test were all examined using the Shapiro-Wilk test ( $P > 0.05$ ), Levene's test ( $P > 0.05$ ), and Mauchly test, respectively. It was found that the assumption of sphericity was not met in anxiety. In this instance, the second row, also known as the Greenhouse-Geisser correction row, has been mentioned in place of the first row, which is connected to compliance with the default of sphericity (Table 4).

**Table 1.** Brief description of writing therapy sessions

Session	Description of session
1	Initial familiarization of the group members with one another, the trainer's statement of objectives and general perspective of the intervention, and the administration of a pre-test
2	Documenting your traumatic experiences and painful secrets
3	Writing down your deepest thoughts and feelings regarding painful secrets and traumatic events and enduring the resulting discomforts
4	Utilizing correct grammar when writing about traumatic experiences and painful secrets
5	Using a large number of emotionally charged words with a negative connotation, such as guilt, sadness, and hatred, and a small number of emotionally charged words with a positive connotation, such as feeling happy and good
6	Describing pleasant life experiences or any topic of interest in your essay
7	Writing about negative recollections in the first and third-person
8	Implementation of writing positive memories in the first and third person, post-test

**Table 2.** Brief description of story therapy sessions

Session	Description of session
1	The general description of the research and the statement of desired goals, performing the pre-test, playing a group game to increase communication among group members, telling stories about self-awareness and self-worth, and finally presenting homework
2	Examining the assigned homework from the previous session's story, sharing stories about self-acceptance, and presenting homework
3	Examining the previous session's story homework, presenting the story based on not judging others based on their appearance, and presenting the homework
4	Checking the homework for the previous session's story, retelling the story based on self-confidence and overcoming phobias, and presenting the homework
5	Examining the homework from the previous session's story, focusing on happiness, overcoming disappointment and social desirability, and presenting homework
6	Examining the homework from the previous session's story, retelling the story based on tolerance and persistence, and presenting the homework
7	Reviewing the previous session's story homework, practicing the two-way storytelling technique, and presenting the homework
8	Checking the previous session's story homework, retelling the story based on its connection to nature, and administering the post-test

Table 5 displays the results of ANOVA on anxiety and depression in three research groups. The results of repeated measures ANOVA showed that in the variable of anxiety, the test factor ( $F = 17.33, P < 0.001$ ), the group factor ( $F = 28.98, P < 0.001$ ), and the test  $\times$  group interaction ( $F = 15.40, P < 0.001$ ) were significant. These findings suggest that in the post-test and follow-up phases, there was a significant difference in the anxiety variable between at least two of the three research groups.

Besides, ANOVA revealed that in depression, the test factor ( $F = 13.33, P < 0.001$ ), group factor ( $F = 25.62, P < 0.001$ ), and test  $\times$  group interaction ( $F = 17.54, P < 0.001$ ) were significant. According to these findings, at least two of the three research groups significantly differed from one another in the post-test and follow-up phases for the depression variable (Table 5).

Following the significance of F coefficients for anxiety and depression, the Bonferroni post-hoc test was used to ascertain the two-by-two differences between the three research groups (Table 6).

The results of this test showed that there was a significant difference in anxiety and depression between both treatment groups (writing therapy and story therapy) with the control group ( $P < 0.001$ ). Moreover, in both variables of anxiety and depression, writing therapy had a significant difference and a stronger effect than story therapy ( $P < 0.001$ ).

## Discussion

The current study aimed to compare the effectiveness of writing therapy and story therapy on anxiety and depression of children with cancer.

**Table 3.** Mean and standard deviation (SD) of each group for pre-test and post-test

Variable	State	Control group (mean $\pm$ SD)	Writing therapy (mean $\pm$ SD)	Story therapy (mean $\pm$ SD)
Anxiety	Pre-test	108.46 $\pm$ 4.67	112.36 $\pm$ 5.48	113.57 $\pm$ 5.91
	Post-test	110.15 $\pm$ 5.13	73.84 $\pm$ 4.26	76.19 $\pm$ 4.43
	Follow-up	112.03 $\pm$ 3.23	76.45 $\pm$ 4.89	73.88 $\pm$ 5.36
Depression	Pre-test	97.16 $\pm$ 5.27	98.54 $\pm$ 4.25	95.74 $\pm$ 4.37
	Post-test	95.83 $\pm$ 4.74	38.47 $\pm$ 2.76	47.12 $\pm$ 2.86
	Follow-up	99.58 $\pm$ 4.19	37.02 $\pm$ 0.99	54.92 $\pm$ 1.95

SD: Standard deviation

**Table 4.** Mean and standard deviation (SD) of each group for pre-test and post-test

Variable	State	Shapiro-Wilk		Levene		Mauchly	
		Statistic	P-value	Statistic	P-value	Statistic	P-value
Anxiety	Pre-test	0.97	0.420	2.46	0.080	0.02	0.001
	Post-test	0.95	0.310	1.89	0.150		
	Follow-up	0.96	0.350	1.37	0.440		
Depression	Pre-test	0.96	0.650	1.22	0.390	0.97	0.460
	Post-test	0.98	0.790	1.51	0.110		
	Follow-up	0.96	0.620	0.42	0.880		

The results indicated that after the intervention, children's mean anxiety and depression scores in writing therapy and story therapy groups differed significantly from those of the control group. Anxiety and depression decreased significantly in these two groups (Canning, Canning, & Boyce, 1992; Compas, Worsham, Ey, & Howell, 1996; Kerner & Fitzpatrick, 2007).

It is assumed that a change in thinking leads to a change in behavior, because it is believed that incompatible cognitions lead to fearful and anxious behavior. The therapist assists the child in identifying and correcting inconsistent cognitions and replacing them with compatible ones (Stuckey & Nobel, 2010). Based on additional findings of the current study, it was determined that after the interventions, the average depression score of children in both intervention groups was significantly lower than that of the control group, and depression in both intervention groups decreased significantly (Altay, Kilicarslan-Toruner, & Sari, 2017).

Writing therapy successfully reduced anxiety and depression in patients with cancer. Regarding the relationship between the results of this study and those of previous studies, no direct research has been conducted; however, the results of recent studies in this field are indirectly consistent with those of the present study, despite being conducted in different societies. In a study by Mosher et al. (2012), expressive writing was found to improve the utilization of mental health services among women with metastatic breast cancer. According to Petrie et al. (2004), writing therapy can reduce anxiety and stress. The study by Haylock (2008) revealed that expressing emotions through writing effectively reduced anxiety. In the Jensen-Johansen et al. (2013) study, writing feelings had no effect on cancer-related anxiety. Besides, in another study, Esterling et al. (1999) found that writing down feelings increased the utilization of mental health services among women with metastatic breast cancer. Two studies contradicted the findings of the present investigation.

To explain the effect of story therapy on reducing depression, it is possible to mention that the common theme of all the stories in this study was improving self-concept, overcoming disappointment, reducing loneliness, maintaining the friendship, and enjoying it (Myers et al., 2014).

**Table 5.** Results of repeated measures analysis of variance (ANOVA) on anxiety and depression in three research groups

Variable	State	SS	df	MS	F-value	P-value	Effect size
Anxiety	Test	243753.94	1	228001.29	17.33	< 0.001	0.98
	Group	116172.52	1	55200.01	28.98	< 0.001	0.86
	Test × Group	218113.09	2	102008.74	15.40	< 0.001	0.98
Depression	Test	18486.53	2	8781.10	13.33	< 0.010	0.87
	Group	43488.05	2	20656.82	25.62	< 0.010	0.82
	Test × Group	23916.04	4	5680.06	17.54	< 0.010	0.90

SS: Sum of squares; df: Degree of freedom; MS: Mean squares

**Table 6.** Bonferroni post-hoc test for comparing pre-test, post-test, and follow-up stages

Variable	Paired comparison	Mean difference	Standard error	P-value
Anxiety	Pre-test/post-test	37.95	0.81	< 0.01
	Pre-test/follow-up	37.87	0.81	< 0.01
	Post-test/follow-up	-0.09	0.08	> 0.05
	Control/story therapy	20.37	2.15	< 0.01
	Control/writing therapy	29.52	2.15	< 0.01
Depression	Story therapy/writing therapy	9.15	2.15	< 0.01
	Pre-test/post-test	-28.86	1.55	< 0.01
	Pre-test/follow-up	-26.19	1.64	< 0.01
	Post-test/follow-up	-2.67	1.34	> 0.05
	Control/story therapy	-30.93	4.02	< 0.01
	Control/writing therapy	-48.29	4.02	< 0.01
	Story therapy/writing therapy	-17.35	4.02	< 0.01

These stories allowed children with cancer to gain a new understanding of themselves and a sense of agency. In the psychological dimension, listening to stories with the themes of strength, energy, and mobility with depressed children, conversing with them about the therapeutic messages of the stories they tell or hear, and listening to stories that express problems similar to their own. Therefore, they achieve practical solutions and positive and pleasurable outcomes, instill optimism and euphoria, and alleviate symptoms of depression (Visser, Huizinga, van der Graaf, Hoekstra, & Hoekstra-Weebers, 2004).

There are some limitations to this study, such as using self-report questionnaires to measure depression and anxiety and focusing on children with cancer in a treatment center. As a result, future studies should employ methods such as observation checklists in real-world settings or interviews to conduct a more comprehensive and in-depth investigation of the anxiety and depression of children with cancer. It is also suggested that this study, particularly the approaches of writing therapy and story therapy based on the framework, rules, and principles of the cognitive-behavioral approach, be carried out on children with cancer in other cities or on children with incurable diseases to provide a platform for expanding the use of the desired interventions. Finally, writing therapy and story therapy effectively reduce anxiety and depression in hospitalized children with cancer. They can be implemented as low-cost and easily accessible methods in pediatric departments. As a result, it is suggested that writing therapy and story therapy methods be used in various areas of children's psychotherapy in future studies. Parents who are prepared should be taught the methods and techniques of writing therapy and story therapy; after their children are discharged from the hospital, they can use these treatments at home to help alleviate their anxiety and depression.

## Conclusion

The findings demonstrated that both writing therapy and story therapy were effective in reducing anxiety and depression in children with cancer. Therefore, treatment centers for children with cancer can aid in the recovery of these children by decreasing their levels of anxiety and depression. In addition to necessary and common medical treatments, children with cancer should be provided with experienced nursing staff and psychotherapists, as well as intervention methods based on writing therapy.

## Conflict of Interests

Authors have no conflict of interests.

## Acknowledgments

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