

# Effectiveness of Play Therapy and Story Therapy on Depression and Anxiety Skills among Children with Leukemia: A Comparative Study

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## Abstract

**Background:** Cancers are the most important cause of disease-related deaths, and children with leukemia have poor social skills and are very aggressive.

**Objectives:** This study aimed to compare the effects of play therapy and story therapy on social skills and aggression in children with leukemia.

**Methods:** This quasi-experimental study was conducted with a pretest-posttest design and a three-month follow-up. The statistical population included all children with leukemia referred to Mahak Center in 2019. The samples (n=45) were selected and equally divided into one control and two experimental groups. The follow-up stage was performed on all groups 3 months after the post-test. The research instruments included questionnaires, namely the Children's Aggression Questionnaire and Matson Evaluation of Social Skills with Youngsters. Data were analyzed using repeated-measures ANOVA.

**Results:** Both treatments had a significant effect on social skills and aggression in leukemia children ( $P < 0.05$ ), compared to the control group. However, play therapy had a greater impact on social skills and aggression than story therapy ( $P < 0.05$ ).

**Conclusion:** The effectiveness of play therapy was more than story therapy on social skills and aggression in leukemia children; consequently, play therapy is recommended for children.

*Keywords:* Child, Play therapy, Depression, Anxiety disorders, Leukemia

## 1. Background

Cancers are the most important cause of disease-related death (1). Leukemia is reported to be the most common cancer in children (2), which has particular importance due to its high mortality rate among children (3). The main symptoms of leukemia include fever, fatigue, multiple infections, swelling, paleness, bleeding, nosebleeds, and red spots under the skin (4). Children with cancer have problems in some psychological and communicational variables. One of these problems is related to social skills (5); in this regard, psychologists have begun to examine the nature of skill behaviors (6).

Social skills are purposeful behaviors related to each other and appropriate to the situation, which are learned and under the control of the person (7). Social skills are among the most important achievements of childhood (8). They are learned behaviors that enable the person to interact with others and avoid unreasonable social reactions (9).

People with disabilities in social skills face various problems in interpersonal relationships (10) and emotional-behavioral areas (11). Children with cancer are more prone to poor academic performance, peer rejection, and a

gradual increase in aggressive behaviors (12). Aggression is the most destructive force in social relationships and has two aspects, namely objectivity (action) and subjectivity (emotions) (13).

Aggressive behavior is an action against a particular person or objects to hurt or intimidate others (14). It includes physical aggression through behaviors or hurting animals and verbal aggression through behaviors (15). Nowadays, new therapeutic methods are used to treat depression and anxiety. Story-based is one of these therapies. Children's cognitive and linguistic limitations and their low motivation to participate in the treatment process have made story therapy an excellent method in counseling and treatment (16). Storytelling allows a child to explore his/her problems and cope with them in an imaginary, safe, and unrestricted environment. In this therapy, the child is not required to admit his/her problems; rather, he/she can see the main character struggling with the problem and seek different options to find a solution (17). The protagonist acts as a role model and the child learns from the new behavior during observational learning or the child imitates the protagonist in the language of psychoanalysis (18). Several studies have evaluated the effect of

story therapy in the treatment of behavioral disorders among children and adolescents (19).

Moradian et al. (20) obtained significant results in assessing the effectiveness of story therapy on improving inhibition and planning/organization of students with attention-deficit/hyperactivity disorder. Nasirzadeh and Roshan (21) reported the effect of story therapy in reducing aggression in 6-8-year-old boys. Sheybani et al. (22) assessed the effect of story therapy on depression, stubbornness, and disobedience. Leonard, et al. (23) stated that interactive problems with parents and improper understanding of the story are the major problems of children with attention-deficit/hyperactivity disorder. Lam (24) referred to the positive effects of storytelling for children with disorders.

Play therapy is used to treat children's problems and disorders. This type of therapy is used to treat various pediatric disorders (25). In the transformation process, children's problems are often due to the inability of adults in understanding or responding effectively to children's feelings and efforts to communicate. Play is a tool that children use to express feelings, establish relationships, describe experiences, and reveal their desires and self-fulfillment (26). Moreover, play can be therapeutic and help children to solve their problems on their own. In this method, children are allowed to express their annoying feelings and inner problems through playing (27). The controlled care approach in the area of psychiatric services in developed countries is aimed at reducing treatment costs (28). Therefore, researchers conduct comparative studies to select the most effective and cost-efficient treatment. However, sometimes the combination of different treatments is more effective than any of the treatments alone.

The necessity of this study is that by looking at the studies, it is determined that counseling and psychotherapy and educational interventions increase immune function and are effective in increasing the hope and vitality of patients, especially cancer patients. Furthermore, considering the benefits of play therapy and story therapy, the use of play therapy techniques and story therapy may have a significant impact on reducing depression, anxiety, and aggression and increasing social skills of children with cancer, which can eventually help them to overcome the psychological fears and problems caused by their disease. To the best of our knowledge, no research has been conducted on comparing play therapy and story therapy and the effect of these two methods on depression, separation anxiety, social skills, and aggression in Iran. Therefore, the present study aimed to compare the effectiveness

of play therapy and story therapy on social skills and aggression in children with leukemia.

## 2. Objectives

This study aimed to answer the question of whether there is a difference between the effects of play therapy and story therapy on social skills and aggression in children with leukemia.

## 3. Methods

This quasi-experimental study was conducted based on pretest-posttest control group design and follow-up. The statistical population included all children with leukemia referred to Mahak Center in 2018-2019. The subjects were selected using a convenience sampling method. The required sample size was calculated at 0.40, 0.95, 0.80 test power, and 10% loss for each group (13). Inclusion criteria were being at the age range of 8-10 years, not having received psychological treatment since diagnosis, lacking severe mental illnesses (e.g., psychotic disorders), and lacking psychotropic medications or substance abuse. On the other hand, the patients who were absent in more than two treatment sessions were excluded from the study.

Regarding the ethical considerations, the research objectives and procedures were explained to all individuals, and they were informed of the right to leave the study at any time and non-participation will not affect their health care process. Moreover, all participants were assured of confidentiality in this study. Subsequently, the consent form was taken and all the questionnaires were filled out and recorded by the subjects. This article was approved by the Ethics Committee of Tehran Islamic Azad University of Medical Sciences, Tehran, Iran (IR ID. IAU. TMU. REC.1400.027).

### *Matson Evaluation of Social Skills with Youngsters*

This 56-item questionnaire, created by Matson (1976), measures social skills from different dimensions, namely appropriate social skills, unsocial behaviors, impulsive behaviors, supremacy, high self-confidence, and relationship with peers (29). This questionnaire is scored on a 5-point Likert scale from 1 to 5. Yousefi et al. confirmed the construct validity of this questionnaire and its reliability was calculated at 0.84 using Cronbach's alpha coefficient method for the whole scale (30).

### *Children's Aggression Questionnaire*

This 43-item questionnaire, developed by Vahedi et al. (2008), aims to measure aggression in preschool children from different dimensions, verbal-

aggressive aggression, physical-aggressive anger. The scoring method of this scale is based on a aggression, relationship aggression, and impulsive

**Table 1. Summary of story therapy sessions**

Session	Content
First	Reading the story by the group members in turn, presenting pictures, and talking about the story content with semi-organized questions.
Second	Reading the story by the group members in turn, presenting pictures, and talking about the story content with semi-organized questions.
Third	Reading a story by a therapist or a group member and practicing and displaying it by children
Fourth	Group storytelling: the therapist began a story to express a specific topic (e.g. a skill) and asked the children to add a sentence to it. When necessary, the therapist added a section to the story or asked a question to guide the flow of the story toward the intended goal.
Fifth	Storytelling with pre-prepared sentences: sentences of a short story were written on cards and given to children (each sentence on a card). The children arranged the sentences to form a story, and then, took turns to read their stories to other members and discussed the content of the stories in the group.
Sixth	Storytelling based on pictures: each child was presented with cards of pictures (6-8 cards) and was asked to make 2-3 stories based on pictures and tell them to other members. In some cases, the subject was selected by the therapist (e.g. "what made the teacher happy" or "how to treat my friend").
Seventh and eighth	Training required for school, familiarity, and comparison of desirable/undesirable behaviors.
Ninth, Tenth, and eleventh	Training problem-solving skills.
Twelfth	Reminding the materials presented in previous sessions.

**Table 2. Summary of play therapy sessions**

Session	Content
First	The child played the role of a victorious and powerful king and two therapists acted as his/her subordinates. In this session, the child's behavioral style and abilities or cognitive deficits were evaluated.
Second	The child identified the main emotions using the images provided by the therapist and practiced with the help of therapists.
Third	Therapists continued practicing on the main emotions to display different emotions and subjects identify them.
Fourth and fifth	Communication skills were practiced using modeling and role-playing techniques. The skills of asking questions, being admired, complimenting, relating to others, and more complex skills were also practiced.
Sixth, seventh and eighth	Interpersonal problem-solving training, accompanied by diagnosing problems and offering different solutions, and selecting the best solutions, was explained, displayed, and practiced.
Ninth	The evaluation was done again similar to the first session to check the differences in the nine sessions.
Tenth	The goal of the training was explained and the problem-solving stage was reviewed.

5-point Likert scale from 0=not at all to 4= most days. The minimum and maximum possible scores are obtained at 0 and 172, respectively. The Cronbach's alpha coefficient for the whole questionnaire was 0.89, indicating the good adequacy of this instrument (31).

The obtained data were analyzed in SPSS software (version 22) through descriptive statistics (mean±SD) and inferential statistics (Repeated measure ANOVA). The significance level of the tests was 0.05.

## 4. Results

The mean scores of social skills and aggression showed an increase and decrease among the play therapy and story therapy groups in the posttest and follow-up stages, respectively, compared to the pretest stage (Table 3). Play therapy and story therapy increased social skills and reduced aggression in children with leukemia.

**Table 3. Mean and SD of social skills and aggression separately based on measurement stages in groups**

Group	Variable	Index	Pre-test	Post-test	Follow-up
Play therapy	Social skills	Mean	120.80	145.20	144.40
		SD	11.28	12.58	13.03
	Aggression	Mean	57.07	48.93	50.93
		SD	6.32	6.54	6.76
Story therapy	Social skills	Mean	121.60	121.20	122.93
		SD	7.06	11.05	9.38
	Aggression	Mean	57.73	56.40	56.40
		SD	6.04	5.57	5.57
Control	Social skills	Mean	123.87	131.47	131.73
		SD	10.38	20.26	17.92
	Aggression	Mean	57.33	52.93	56.00
		SD	5.89	4.71	4.28

Table 4. Mixed ANOVA of social skills scores

Statistical indices of factors	SS	df	MS	F	P	Eta coefficient
Time	5036.09	1.54	3277.01	22.22	0.001	0.44
Time*Group	1327.29	1.54	863.67	5.86	0.01	0.17
Group	1361.11	1.00	1361.11	4.24	0.04	0.12

Table 5. Mixed ANOVA for aggression scores

Statistical index of factors	SS	df	MS	F	P	Eta coefficient
Time	596.27	1.54	386.84	29.17	0.00	0.51
Time*Group	95.29	1.54	61.82	4.66	0.02	0.14
Group	217.78	1.00	217.78	4.68	0.02	0.14

posttest, and follow-up phases. The results of the Bonferroni post hoc test showed a significant difference in social skills scores between pretest and posttest stages and pretest and follow-up phases. Additionally, no significant difference was observed in the social skills scores between the post-test and follow-up. The F-value of the effect of stages showed a significant difference between the two groups of play therapy and story therapy ( $F=5.86$ ,  $P<0.05$ ). Therefore, there was a significant difference in the mean scores of social skills between the two groups in pretest, posttest, and follow-up. As shown in Table 4, the F-value was significant for the intergroup factor ( $P<0.05$ ). Therefore, there was a significant difference in the mean scores of social skills between the two groups. It was concluded that play therapy and story therapy affected social skills scores. The increase in social skills scores in the follow-up stage, compared to the pretest, was also significant. The trend of an increase in social skills scores in the follow-up continued, compared to the pretest, which was significantly different, indicating the stability of treatments on social skills scores. Furthermore, the level of increase in the play therapy group was higher than in the story therapy group.

According to Table 5, the f-value of the effect of stages was significant ( $F=29.17$ ,  $P=0.05$ ). Regarding, there was a significant difference in mean aggression scores in pretest, posttest, and follow-up stages. The results of the Bonferroni post hoc test revealed a significant difference between aggression scores in pretest and posttest, and between aggression scores in pretest and follow-up. In addition, there was no significant difference between aggression scores in the post-test and follow-up; therefore, aggression scores in the follow-up did not change significantly, compared to the post-test stage. As shown in Table 5, concerning the interaction of stage and group factors, the F-value for the effect of stages between the two groups was significant ( $F=4.66$ ,  $P<0.05$ ). In this regard, there was a significant difference between the two groups in terms of mean scores of aggression in pretest, posttest, and follow-up. Figure 2 shows the interactive graph of the adjusted means of aggression scores in the two groups in pretest, posttest, and follow-up. Moreover, the F-value calculated for the intergroup factor was significant ( $P<0.05$ ) (Table 5).

Therefore, there was a significant difference between the general mean scores of aggression in the two groups. It was concluded that the two methods affected aggression scores so that the experimental groups reduced the aggression scores, compared to the control group. The reduction in aggression scores in the follow-up stages was significant in comparison to the pretest, which was significantly different, indicating the stability of treatments on aggression scores. Additionally, the level of reduction was lower in the story therapy group than in the play therapy group.

## 5. Discussion

This study evaluated and compared the effects of play therapy and story therapy on social skills and aggression in children with leukemia. It was shown that play therapy had a significant effect on social skills and aggression in the experimental groups, compared to the control group. Various methods were used to recreate the traumatic event. The results of this study were in line with those of studies conducted by Zamani et al. (19), Teimourian et al. (25), and Jensen et al. (26).

The present study revealed that story therapy had a significant effect on social skills and aggression, in comparison to the control group. In line with these results, Shahabizadeh and Khajeh Emanian (32) reported that cognitive-behavioral story therapy intervention had a positive impact on reducing general and mild social anxiety in children. Karimi Nasab et al. (33) showed that story therapy significantly reduced depression in children with cancer. Based on the results of a study conducted by Chari et al. (34), play therapy and story therapy were effective in reducing depression and anxiety in children with cancer. It should be stated that children live in a world of stories. The most vibrant children calmly listen to the stories, learn from them, learn lessons, and even follow the stories in the dream world (35).

When a story is told, the subject is formed, various issues are revealed, and the story characters are responded with specific thoughts, emotions, and behaviors. When a child listens to the story, he/she may imitate a character, and therefore, project it into his/her life. Children's interest in the thoughts,

feelings, and behaviors of the story characters allows them to share the characters' experiences and generalize their beliefs, thoughts, and emotional experiences to themselves, and as a result, overcome their emotional turmoil.

The child may unknowingly borrow the skills and solutions used by the story characters to cope with his/her problems. It allows the child to overcome his/her failures. This study revealed that play therapy had a greater impact on increasing social skills in children with leukemia than story therapy. Moreover, it was revealed that playing in groups provided an opportunity to learn social skills and reduced individual problems. Baggerley and Parker (36) found that play therapy was effective on learning, self-control, responsibility, respect, self-esteem, expression of feelings, acceptance of self and others, improvement of social skills, and reduction of depression and anxiety. The results of a study performed by Danger and Landreth (37) showed that play therapy was an effective intervention strategy for preschool children with language problems and it reduced anxiety in children.

Playing games is an influential component involved in children's psychosocial development and growth. It is also an effective way to cure some mental disorders in the child. Playing can bring lots of fun for the child, make him/her aware of his/her current feelings, and help him/her communicate better with others. The findings of the present study revealed that play therapy had a greater impact on reducing aggression in children with leukemia than story therapy. In line with this result, Ahmadi Bouzendan, et al. (38) showed a 53.6% recovery in children's aggression after the intervention, and follow-up tests indicated a reduction in this behavior. Play situation is used to communicate with the child in play therapy so that the child can release his/her emotion.

## Study Limitations

The most important limitation of this study was the use of a convenient sampling method. Due to executive limitations, it was impossible to use interviews and observations to collect data.

## Strength of the study

It is recommended to conduct a similar study by employing a random sampling method. It is also suggested to conduct similar studies in other geographical locations and a population with a larger sample. Moreover, future studies should be carried out to examine the effectiveness of play

therapy and story therapy on other disorders among children.

## 6. Conclusion

The effectiveness of play therapy was more than story therapy on social skills and aggression in leukemia children; therefore, play therapy is recommended for children.

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## Conflicts of interest

The authors state that there is no conflict of interest between them.

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