

Research Paper



The Effectiveness of Child-Centered Play Therapy on Hope and Resilience in Children with Cancer

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Abstract

Introduction and Objective: Cancer diagnosis severely affects children's emotional well-being, often reducing their hope and resilience. The present study aimed to investigate the effectiveness of Child-Centered Play Therapy (CCPT) on hope and resilience in children with cancer.

Research Methodology: This quasi-experimental study employed a pretest–posttest design with a control group. The statistical population consisted of children aged 5 to 8 years diagnosed with cancer who were referred to Hazrat Ali Asghar Children's Hospital in Tehran in 2024. Using convenience sampling, 30 children were selected and randomly assigned to the experimental group ($n = 15$) and control group ($n = 15$). The mean age of participants was 7.43 years ($SD = 1.12$), including 16 boys (53.3%) and 14 girls (46.7%). The experimental group received twelve 45-minute sessions of CCPT, while the control group received no intervention. Research instruments included Snyder's Children's Hope Scale and the Social-Emotional Assets and Resilience Scale (SEARS). Data were analyzed using Multivariate Analysis of Covariance (MANCOVA).

Findings: The results indicated that CCPT significantly increased levels of hope ($F = 22.43$, $p < 0.001$, $\eta^2 = 0.46$) and resilience ($F = 12.45$, $p < 0.001$, $\eta^2 = 0.32$) in children with cancer. The intervention had a stronger effect on hope than on resilience.

Conclusion: The findings suggest that CCPT is an effective, non-invasive, and developmentally appropriate intervention for enhancing hope and resilience in children with cancer. By providing a safe environment for emotional expression, fostering mastery, and promoting positive fantasies, CCPT helps children cope adaptively with the challenges of illness and improves their psychological well-being.

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Introduction

Childhood cancer is one of the major challenges of healthcare systems worldwide, and Iran is no exception (Abolghasemi, Faranoush, & Alizadeh, 2024). The incidence rate of childhood cancer in Iran is estimated to be approximately 16.8 per 100,000 population (Sharifi & Esmacili, 2024). Pediatric cancers account for about 1% of all newly diagnosed cancer cases and are recognized as the leading cause of disease-related mortality in children in the United States (American Cancer Society, 2022). In Iran, childhood cancer is the second leading cause of death in children under 14 years and is responsible for about 4% of deaths among children younger than seven years (Behrani-Tanha & Kolahdoozan, 2025). From the moment of diagnosis, children with cancer experience complex emotional, social, and cognitive challenges, often leading to feelings of hopelessness, fear, and sadness that disrupt their normal development (Barrera, 2018). Long-term hospitalization negatively affects multiple aspects of their lives, including school performance, learning abilities, peer relationships, and family roles, and often contributes to behavioral problems and social adjustment difficulties (Saito, Hiramoto, Watanabe, & Kodama, 2022). While all hospitalized children may experience such feelings, children diagnosed with cancer are uniquely burdened by intrusive thoughts about death, which can cause deep psychological distress and hopelessness (Talebi, 2022). Although healthcare providers strive to prolong life and improve outcomes, the psychosocial impact of the disease remains profound (Chang-Jio, Lee, Ho, & Chang-A, 2023). According to Snyder's Hope Theory (1991), hope is a motivational construct composed of two elements: agency thinking (the determination to achieve goals) and pathway thinking (the ability to identify alternative solutions). Hope enables individuals to remain goal-oriented and to persevere in the face of obstacles. Among children with cancer, hope not only reduces depressive symptoms but also enhances treatment adherence and improves quality of life (Martins et al., 2018; Tremolada et al., 2020). In this context, hope is a decisive factor in the psychological adjustment of children with cancer (Martins et al., 2018; Ramebod, Nasebeh, & Salmanpour, 2024). Nevertheless, children vary in their responses to adversity: while some experience maladaptive outcomes, others demonstrate positive adjustment. This adaptive capacity, defined as "the ability to maintain or regain psychological well-being and social functioning under adverse conditions," is referred to as resilience (Sabin, Venderlin, et al., 2023). A lack of hope and negative psychosocial factors reduce resilience in children with cancer, leading to long-term physical, psychological, and social consequences (Benzing, Sigurat, Anzender, Spitzgötl, & Grötzer, 2022). Research has shown that resilience plays a critical role in reducing distress and promoting mental health among children with cancer and their parents (Chang, Lee, Chung, Ho, Xia, & Lopez, 2021). High resilience has been associated with lower levels of anxiety, depression, and obsessive-compulsive symptoms (Hjemedal, Vogel, Solom, Hagen, & Stiles, 2011). Thus, assessing and enhancing resilience is crucial for designing effective psychological interventions to foster positive coping and well-being in this population (Luo et al., 2021). One promising intervention is play therapy, which has been widely recognized as a developmentally appropriate strategy to support hospitalized children. Play in hospital settings not only facilitates adaptation but also provides multiple benefits, such as improving relationships with caregivers, restoring a sense of independence, and enabling children to express emotions like anxiety, fear, sadness, tension, and pain (Souza, 2015). Research has shown that children with cancer often struggle to engage in formal verbal counseling; instead, play serves as their natural medium of communication (Homeyer & Sweeney, 2016). Child-Centered Play Therapy (CCPT), as emphasized by Landreth (2009, 2012), is grounded in the belief that children are capable of guiding their own healing process within a safe therapeutic relationship. Although the therapist provides structure and ensures safety, the child's self-expression through play is unconditionally accepted, thereby fostering exploration, mastery, and emotional growth (Asghari Nekah et al., 2015). Snyder's theory of hope (1997) highlights that agency and pathway thinking help children remain motivated and discover alternative solutions, while resilience theory emphasizes the role of personal and social resources in positive adaptation. Within this framework, CCPT—through its emphasis on an accepting, nonjudgmental therapeutic relationship—offers a pathway to enhance both hope and resilience in children with cancer. Numerous studies have documented the benefits of play therapy in improving psychological outcomes in pediatric populations, including increased hope (Liu & Zhang, 2024). Many researchers in the field of child psychology have pointed to the beneficial effects of various forms of play therapy, such as enhancing hope (Liu & Zhang, 2024), reducing negative emotions, anxiety, and stress (Hogland & Weisslander, 2024), increasing self-esteem and confidence (Ramebod & Nasebeh, 2024), and improving anxiety symptoms (Asadi-Kianian, 2023) in children with cancer.

In Iran as well, previous studies on children have demonstrated that play therapy is effective in reducing anxiety and depression (Shojaei & Golparvar, 2019; Sham-Abadi & Nosrat-Abadi, 2021), decreasing anxiety and hopelessness (Sadeghi, Mikaeili, & Atadokht, 2024), improving self-esteem (Gazestan & Makvandi, 2021), increasing hope (Sanatgar & Esmacili, 2020; Achresh, 2022; Alavi & Makvandi, 2020), and enhancing resilience (Talebi & Ghasemzadeh, 2022).

Given the prolonged hospitalizations and the negative psychological consequences faced by children with cancer, along with their pressing need to strengthen hope and resilience in order to cope with these challenges, the present study was conducted to examine the effectiveness of Child-Centered Play Therapy in improving hope and resilience among children with cancer.

Methodology

The present study employed a quasi-experimental design with a pretest–posttest and control group. The statistical population included all children aged 5–8 years with cancer who were referred to Hazrat Ali Asghar Children's Hospital in Tehran in 2024. For sampling, a purposive method with random assignment to groups was used. The sample size consisted of 30 participants, with 15 in the experimental group and 15 in the control group. This number was estimated in order to achieve a test power of 0.88 (Zamani, 1999).

Inclusion criteria were: absence of any psychotic disorders (as diagnosed by a psychologist), informed consent, and the ability to participate in sessions. Exclusion criteria included receiving any concurrent psychotherapy or unwillingness to continue the intervention. To observe ethical considerations, participants were assured that all information would remain confidential. Based on established criteria, information about the study objectives, implementation stages, experimental design, type of intervention, and potential benefits was provided to the participants.

Research Instruments

Social-Emotional Assets and Resilience Scale (SEARS): In this study, data were collected using the Social-Emotional Assets and Resilience Scale (SEARS). This questionnaire was developed by Merrell (2010) to assess children's positive social-emotional competencies and resilience, based on a strengths-based approach that emphasizes individual assets and resources. SEARS is a strengths-based assessment system that evaluates positive social and emotional skills and characteristics, including self-regulation, social competence, problem-solving, and empathy. The scale consists of 52 items divided into four subscales: Self-regulation (22 items), Empathy (6 items), Social competence (13 items), Responsibility (11 items). Dorner et al. (2011) administered this questionnaire to 1,400 children and reported test–retest reliability (two-week interval) of 0.81 and Cronbach's alpha of 0.85 for the child form. Hosseini, Yazdi, and Mashhadi (2013) examined the validity and reliability of SEARS in children aged 8–13 years from divorced families, reporting Cronbach's alpha of 0.87 for all subscales. Reich (2011) reported Cronbach's alpha of 0.97 for the total scale and 0.95, 0.92, 0.90, and 0.90 for the four subscales, respectively. Construct validity was confirmed through confirmatory factor analysis, with factor loadings ranging from 0.39 to 0.92. In the present sample, the reliability of this scale was $\alpha = 0.87$. Scoring is based on a four-point Likert scale (0 = never to 3 = always), and all items are positively keyed; higher scores indicate greater resilience, whereas lower scores indicate lower resilience. The total score is obtained by summing all positively keyed items, ranging from 0 to 156.

Children's Hope Scale: According to Snyder's (1997) theory, hope is a cognitive process consisting of two components: agency thinking and pathways thinking. The Children's Hope Scale includes six items assessing these two components as well as overall hope, with each subscale comprising three items. This scale is originally designed for children and adolescents aged 8 to 16 years. Responses are rated on a six-point Likert scale (1 = never to 6 = always). Items 1, 3, and 5 assess pathways thinking, while items 2, 4, and 6 assess agency thinking. The total hope score is obtained by summing all six items, with higher scores indicating greater hope. In the present sample, the number of 6-year-old children was very limited (only two children), and most participants were older. Due to sampling limitations in the hospital setting and the cooperation constraints of children with cancer, this situation was unavoidable. Nevertheless, the reliability of this scale in the present study was $\alpha = 0.78$. Although the original version of this scale was designed for self-report by children aged 8 years and older, in this study, due to the young age of participants (5–8 years) and their cognitive and linguistic limitations, the questionnaires were completed by the children's mothers. All responses were based on direct observation of the

child and parental involvement; that is, parents observed the child's behaviors and reactions and provided responses in collaboration with the child. This method is methodologically valid, consistent with both international and Iranian research, and allows accurate assessment of changes in children's hope and resilience following the play therapy intervention (Eiser et al., 2005; Jurbergs et al., 2008; Sanatgar & Esmacili, 2020). All participants were children diagnosed with cancer. Based on medical records, 60% (18 children) were diagnosed with acute lymphoblastic leukemia (ALL), 26.7% (8 children) with solid tumors (neuroblastoma and sarcoma), and 13.3% (4 children) with lymphoma. The time elapsed from diagnosis to participation in the study ranged from 2 to 18 months (mean = 8.2 months). A total of 30 children were selected and assigned to two groups (experimental and control). Both groups completed the measurement instruments at baseline.

The independent variable, Child-Centered Play Therapy (CCPT), was then applied to the experimental group. After completion of the intervention sessions, both the experimental and control groups completed the instruments again as a posttest.

The CCPT intervention consisted of 12 sessions (two sessions per week, 45 minutes each) for the experimental group. The sessions were conducted in a calm and safe environment at Hazrat Ali Asghar Children's Hospital in Tehran. The therapist was a clinical psychologist experienced in play therapy with pediatric cancer patients and adhered to the core principles of CCPT (empathy, unconditional acceptance, and creating a safe and structured environment).

The CCPT intervention package in this study was based on Landreth's (2012) standardized protocol. It included 12 sessions of 45 minutes each, held twice weekly, in a playroom equipped with standard play materials (including symbolic toys, art supplies, construction toys, storytelling materials, and sand play). Each session was tailored to the child's individual needs and therapeutic progress, but the general framework was as follows:

Sessions 1–2: Orientation to the therapy environment, establishing trust, and allowing the child to freely explore the playroom.

Sessions 3–5: Expression of negative emotions (fear, sadness, anger) through symbolic and artistic play (e.g., building a "house of fears" or drawing clouds and sunshine).

Sessions 6–8: Strengthening a sense of control and self-efficacy (e.g., construction play, role-playing as a doctor or superhero).

Sessions 9–11: Enhancing hope and resilience (e.g., creating a "wish box," engaging in positive fantasy play, storytelling about overcoming challenges).

Session 12: Reviewing the therapeutic process, discussing perceived changes by the child, and closing the therapeutic relationship with respect and support.

Throughout all sessions, the therapist adhered to Landreth's eight principles of CCPT (unconditional acceptance, empathy, non-directiveness, respect for the child's process, etc.).

Data Analysis

After the posttest was administered, the data were analyzed using SPSS version 27 at both descriptive and inferential levels. In the descriptive section, measures such as mean and standard deviation were used to summarize the data. To determine the effectiveness of play therapy, analysis of covariance was employed.

This method is used when the researcher intends to examine the effect of an independent variable (in this case: experimental group vs. control group) on two or more dependent variables (in this case: hope and resilience) simultaneously, while controlling for the effects of other predictor variables (such as pretest scores).

MANCOVA first uses statistics such as Wilks' Lambda to assess whether the intervention had an overall effect on the set of dependent variables. If the overall result is significant, follow-up univariate analyses of covariance (ANCOVA) are conducted to examine the effect of the intervention on each dependent variable separately. This method provides greater statistical precision compared to ANOVA, as it controls for pretest scores.

Results

In this study, a total of 30 children participated (15 in the experimental group and 15 in the control group). The mean age of the sample was 7.43 years ($SD = 1.12$), with a minimum age of 6 years and a maximum age of 9 years. Regarding gender distribution, 16 participants (53.3%) were boys and 14 participants (46.7%) were girls.

To examine the effect of child-centered play therapy on the two variables of hope and resilience, the participants' scores were collected at both the pretest and posttest stages, separately for the experimental (play

therapy) and control groups. The mean and standard deviation of each variable for each group are presented in the following table.

Table 1. Mean and Standard Deviation of Research Variables in Pretest and Posttest by Group

Variable	Group	pretest				posttest			
		M	SD	K-S	P	M	SD	K-S	P
Hope	Play Therapy	21/33	1.79	0/160	0/200	25/46	2/03	0/142	0/200
	Control	21/01	2.39	0/217	0/056	21/41	2/72	0/187	0/165
Resilience	Play Therapy	79/86	8/67	0/128	0/200	89/20	9/54	0/215	0/059
	Control	78/72	9/08	0/140	0/200	78/06	7/24	0/163	0/200

As shown in Table 1, the experimental group (play therapy) demonstrated a notable increase in the variable of *hope*, rising from a pretest mean of 21.33 to a posttest mean of 25.46. In contrast, the control group showed only a slight increase from 21.01 to 21.41.

Regarding *resilience*, the experimental group exhibited a positive increase from 79.86 to 89.20, while the control group showed a slight decrease from 78.73 to 78.06.

The normality of data distribution was assessed using the Kolmogorov–Smirnov test, the results of which (Table 1) indicated that the distribution of variable scores was normal ($p > 0.05$).

To examine the assumption of error variance homogeneity, Levene’s test was applied. The results showed that the obtained significance levels for *hope* ($F = 0.51$, $p > 0.05$) and *resilience* ($F = 2.24$, $p > 0.05$) were greater than 0.05. Therefore, the assumption of equality of error variances was confirmed.

Additionally, Box’s M test was performed to assess the equality of covariance matrices between the two groups. The results ($MBox = 5.33$, $F = 1.64$, $p > 0.05$) indicated a significance level greater than 0.05, confirming the assumption of homogeneity of covariance matrices.

Considering that all necessary assumptions were met—including normal distribution of data, homogeneity of variances, homogeneity of regression slopes between covariates and the independent variable, and equality of variance–covariance matrices—multivariate analysis of covariance (MANCOVA) was employed to compare the mean scores of *hope* and *resilience* at the posttest stage.

Table 2. Results of Multivariate Analysis of Covariance (MANCOVA)

Effect	Statistic Value	F Value	Hypothesis df	Error df	p-value	Effect Size
Pillai’s Trace	0.64	23.06	2	25	0.001	0.64
Wilks’ Lambda	0.35	23.06	2	25	0.001	0.64
Hotelling’s Trace	1.84	23.06	2	25	0.001	0.64
Roy’s Largest Root	1.84	23.06	2	25	0.001	0.64

The findings presented in Table 2 indicate that the F-value obtained for Wilks’ Lambda was 23.08, with a significance level of $p < 0.01$. This result demonstrates that the experimental and control groups differ significantly on at least one of the dependent variables (*hope* and *resilience*) at the posttest stage. In other words, 64% of the variance in these outcomes can be attributed to the effect of the intervention.

To further determine the effect of the intervention on each research variable, the results of the univariate ANCOVA are presented in Table 3.

Table 3. Results of Analysis of Covariance (ANCOVA) for Examining the Effectiveness of the Intervention on Research Variables

Source of Variation	Variable	Sum of Squares (SS)	df	Mean Square (MS)	F	p	Effect Size (η^2)
Group	Hope	127.25	1	127.25	22.43	<0.001	0.46
	Resilience	936.47	1	936.47	12.45	<0.001	0.32
Error	Hope	147.50	26	5.67			
	Resilience	1954.19	26	75.16			

The results of the analysis of covariance, controlling for pretest scores, showed that child-centered play therapy had a significant effect on increasing levels of *hope* ($F = 22.43, p < 0.01$) and *resilience* ($F = 12.45, p < 0.01$) among children with cancer (Table 3). Based on the F-values and significance levels, the research hypotheses regarding the positive effect of the intervention on both variables were confirmed.

These findings indicate that child-centered play therapy significantly enhanced the levels of hope and resilience in children with cancer. Considering the calculated effect sizes— $\eta^2 = 0.46$ for hope and $\eta^2 = 0.32$ for resilience—the intervention demonstrated a stronger effect on *hope* compared to *resilience*.

Discussion and Conclusion

The present study aimed to examine the effectiveness of child-centered play therapy on hope and resilience among children with cancer. The findings clearly indicate that child-centered play therapy is not only developmentally appropriate for children with cancer but also significantly effective in enhancing their hope and resilience. By creating a safe environment for nonverbal emotional expression, strengthening the sense of control, and promoting positive fantasies, this intervention helps children cope adaptively with the challenges of their illness. The first key finding of this study revealed that child-centered play therapy was effective in improving hope among children with cancer. These results are consistent with prior research. For example, Alavi and Makvandi (2020) reported that play therapy increased hope and adjustment in children with cancer. Similarly, Achresh (2022) found that play therapy enhanced hopefulness among pediatric cancer patients, while San'atgar and Esmaeili (2020) demonstrated the positive effects of play therapy on social acceptance and hope in this population. Liu and Zhang (2024) further highlighted that play therapy can enhance hope in children undergoing medical treatment. The current findings are also in line with the results of Sadeghi et al. (2024) and Hoogland (2024). In interpreting these findings, it can be argued that for children with cancer, addressing both physical and psychological needs is crucial in strengthening hope and reducing despair. Child-centered play therapy, as an approach aligned with the natural psychological world of children, meets these needs effectively. This method not only facilitates the resolution of difficulties associated with illness but also provides a safe space for expressing feelings, frustrations, and anxieties. Through play, children reveal both conscious and unconscious thoughts, yet adults often struggle to understand and respond appropriately to these experiences. Group-based play therapy may help bridge this communication gap, as it enables adults to enter the child's world in a supportive environment. Moreover, the presence of peers in play therapy sessions fosters social interaction, strengthens social support, and further reinforces children's sense of hope.

Another finding of the present study indicated that child-centered play therapy enhanced resilience among children with cancer. This result is consistent with the findings of Talebi et al. (2022), who demonstrated that child-centered play therapy significantly improved resilience in children diagnosed with leukemia. Their study highlighted that this intervention can be utilized effectively to strengthen resilience in children hospitalized in clinics and hospitals.

Although limited research has been conducted specifically on the impact of child-centered play therapy on resilience in pediatric cancer patients, the current findings are in line with other studies that have examined the application of play-based interventions for children experiencing trauma or hospitalization. For example, Rambod et al. (2024) confirmed the role of play therapy in fostering problem-solving skills, emotional self-awareness, and self-confidence—all of which are core components of resilience. In addition, Sabine Y. Wan (2023), in a specialized study on children with cancer, emphasized the importance of play as a key factor in enhancing resilience. According to her findings, play not only strengthens children's defense mechanisms in coping with illness but also promotes confidence and problem-solving abilities.

The findings of this study are consistent with the results of most previous research (Talebi, 2023), which confirm the effectiveness of play therapy in enhancing resilience among children with cancer. In addition, the role of social skills and play in strengthening resilience has been emphasized as a fundamental factor (Rambod et al., 2024). Play therapy can provide an environment in which children, through symbolic role play, are able to understand events, design future plans, and discover different strategies for solving problems. This process helps to develop cognitive functioning, self-confidence, and problem-solving skills. Considering that problem-solving is one of the main characteristics of resilient individuals, it can be expected that play therapy directly influences the enhancement of resilience. Therefore, children who received this child-centered intervention were able to strengthen their resilience by improving problem-solving skills as well as areas such as self-awareness, social competence, empathy, and responsibility.

In general, it can be stated that children with cancer face multidimensional psychological, physical, and social challenges that may lead to a reduction in hope and resilience. Child-centered play therapy, by using the child's natural language (play), provides a safe space for expressing emotions, frustrations, and anxieties. This process not only allows the child to reveal both conscious and unconscious thoughts but also helps them experience social support and a sense of competence through interaction with the therapist and peers. Moreover, play therapy enables children to reconstruct painful events through symbolic role-playing, design future plans, and discover

creative strategies for coping with difficulties. This process directly improves cognitive functioning, self-confidence, and problem-solving skills, all of which are fundamental elements of resilience.

Suggestions for Future Research and Application

This study had several limitations that should be considered when interpreting the findings and generalizing the results:

1. Conducting longitudinal studies with 3-, 6-, and 12-month follow-ups to evaluate the sustainability of intervention effects.
2. Designing specific play therapy packages tailored to cancer type and treatment stage (e.g., separate programs for children with leukemia and solid tumors).
3. Training nurses and parents in play-based techniques to continue the intervention in both home and hospital settings.
4. Employing mixed-method approaches (qualitative–quantitative) in future research to gain a deeper understanding of children’s subjective experiences.

Based on the findings and limitations of the present study, the following recommendations are proposed for future research and clinical practice:

1. Longitudinal studies: It is recommended to conduct studies with 3-, 6-, and 12-month follow-ups to examine the long-term effects of play therapy on hope and resilience in children with cancer.
2. Specialized play therapy packages: Developing intervention packages tailored to cancer type (e.g., leukemia, solid tumors) and treatment stage (initial diagnosis, active treatment, transition to home) may enhance the effectiveness of the intervention.
3. Training parents and nurses: Teaching play-based techniques to parents and healthcare staff can ensure the continuation of the intervention in home and hospital environments, thus reinforcing its effects.
4. Mixed-method approaches: Using qualitative–quantitative research methods in future studies can provide a deeper understanding of the subjective experiences of children with cancer and the mechanisms through which play therapy benefits them.
5. Comparing play therapy approaches: It is suggested that future studies compare the effectiveness of child-centered play therapy, group play therapy, cognitive-behavioral play therapy, and Axline’s approach in children with cancer to determine the most suitable method for their specific needs.

Ethical Considerations

This study was approved by the Ethics Committee of the University of Mohaghegh Ardabili (IR.UMA.REC.1402.037). All ethical principles were observed throughout the research. Participants were free to withdraw from the study at any time without any consequences. Moreover, all participants were fully informed about the research objectives and procedures, and their personal information was kept strictly confidential.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the present study.

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