

A True Experimental Study on the Effectiveness of Art Therapy in Reducing Anxiety Among Hospitalized School-Age Children at Selected Hospitals in Sasaram, Bihar

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doi.org/10.64643/IJIRTV12I12-203484-459

Abstract (Background of the study) Introduction: Hospitalization is a major source of stress for school-age children (6–12 years), interfering with the developmental stage of industry versus inferiority described by Erikson. Children in this stage seek competence and independence; however, hospitalization introduces fear of separation, pain, unfamiliar procedures, and loss of control. Evidence suggests that up to 65% of hospitalized children experience moderate to high anxiety, which may delay recovery and lead to behavioural regression. Non-pharmacological interventions such as art therapy provide a safe and effective approach for emotional expression without the adverse effects associated with medications. In resource-limited settings like Sasaram, Bihar, incorporating such low-cost interventions is particularly relevant.

Methods: A true experimental pre-test post-test control group design was adopted. The study included 60 hospitalized children aged 6–12 years, selected through simple random sampling and divided equally into experimental (n=30) and control (n=30) groups. Children who were critically ill or had cognitive impairments were excluded.

Anxiety levels were assessed using the standardized *Spence Children's Anxiety Scale (SCAS)*. Pre-test assessment was conducted prior to intervention. The experimental group received structured art therapy sessions (30–45 minutes daily using drawing and colouring activities) for 5–7 days, while the control group received routine hospital care. Post-test assessment was conducted after completion of the intervention.

Data were analysed using descriptive statistics (mean, percentage) and inferential statistics (paired t-test, unpaired t-test, and Chi-square test), with statistical significance set at $p < 0.05$.

Results: The majority of participants were boys (53.3%), aged 9–12 years (50%), from rural areas (60%), and experiencing first-time hospitalization (63.3%). Pre-test findings revealed that 86.6% of children had moderate to high anxiety, with comparable mean scores in the experimental (45.2 ± 8.1) and control (44.8 ± 7.9) groups. Post-test results demonstrated a statistically significant reduction in anxiety levels in the experimental group (mean = 26.4 ± 6.2 ; $p < 0.001$), whereas the control group showed minimal change (mean = 42.1 ± 7.5). The mean reduction in anxiety was 18.8 in the experimental group compared to 2.7 in the control group, indicating a significant effect of the intervention ($p < 0.001$).

Chi-square analysis revealed significant associations between post-test anxiety levels and age ($p = 0.032$), duration of hospitalization greater than 5 days ($p = 0.014$), and prior hospitalization ($p = 0.041$). No significant association was found with gender or religion. **Discussion:** The findings confirm that art therapy is an effective non-pharmacological intervention for reducing anxiety among hospitalized school-age children. The significant decrease in anxiety levels in the experimental group highlights the therapeutic value of creative expression in helping children cope with hospitalization-related stress. These results align with existing literature supporting play-based and expressive therapies in pediatric care.

Given its low cost, ease of implementation, and absence of side effects, art therapy can be integrated into routine pediatric nursing practice, particularly in resource-constrained settings such as Bihar. Incorporating such interventions into hospital protocols and nursing education can enhance holistic care and improve patient outcomes.

Keywords: Art therapy, school-age children, hospitalization anxiety, pediatric nursing, non-pharmacological intervention, Sasaram Bihar

I. INTRODUCTION

Childhood is generally perceived as a period of growth, play, and emotional security. However, illness and hospitalization can significantly disrupt this developmental phase, exposing children to unfamiliar and often distressing experiences. Hospitalization is widely recognized as one of the most stressful events in a child's life, characterized by exposure to strange environments, unfamiliar healthcare personnel, and invasive procedures. Anxiety among hospitalized children is a universal phenomenon, though its severity varies depending on age, developmental stage, previous experiences, and coping mechanisms.¹ School-age children (6–12 years) are particularly vulnerable to hospitalization-related anxiety. According to developmental theories, this stage is marked by the development of industry and competence. Children take pride in independence and productivity; however, hospitalization forces dependency and restricts autonomy, resulting in a loss of control and increased emotional distress.²

If not adequately managed, this anxiety may lead to negative outcomes such as non-cooperation, increased pain perception, “white coat syndrome,” and long-term psychological trauma.³

Modern pediatric nursing emphasizes atraumatic care, which focuses on minimizing both physical and psychological distress during hospitalization. While the disease process cannot always be avoided, healthcare providers can modify the environment and care approaches to reduce fear and anxiety. One effective non-pharmacological intervention is art therapy, which enables children to express emotions that they may not be able to verbalize.⁴

Art therapy involves the use of creative processes such as drawing, painting, colouring, and clay modelling to facilitate emotional expression and psychological

healing. It acts as a bridge between the child's internal emotional state and the external hospital environment, allowing children to process fear and regain a sense of control.⁵

II. NEED OF THE STUDY

Hospitalization during childhood is commonly associated with fear, uncertainty, and anxiety. School-age children (6–12 years), who are in a critical developmental stage involving identity formation, social interaction, and academic engagement, are particularly vulnerable to psychological disturbances when their normal routines are disrupted due to illness and hospitalization. Anxiety experienced during hospitalization is not merely a temporary emotional reaction; it can have both immediate and long-term consequences. Increased anxiety levels may interfere with a child's cooperation during medical procedures, heighten pain perception, delay recovery, and negatively influence future attitudes toward healthcare services.⁶ Despite advancements in medical science, hospital care often prioritizes physical treatment, while emotional and psychological needs remain under-addressed. Modern healthcare emphasizes a holistic approach, integrating physical, psychological, and social dimensions of care. In pediatric settings, this approach becomes even more crucial, as children require emotional support mechanisms to cope effectively with stress and unfamiliar environments.⁷ Non-pharmacological interventions are increasingly recommended in pediatric care due to their safety, cost-effectiveness, and absence of drug-related side effects. Among these, art therapy has emerged as a promising intervention. It provides children with a nonthreatening medium to express emotions, fears, and anxieties that they may not be able to verbalize.⁸ Art therapy facilitates emotional expression through creative activities such as drawing, painting, and colouring. These activities not only serve as a form of communication but also promote relaxation, distraction from pain, and enhancement of coping abilities.⁹ Studies have demonstrated that children engaged in art therapy exhibit reduced anxiety levels, improved mood, and better adaptation to the hospital environment. Globally, research supports the effectiveness of art therapy in reducing anxiety among hospitalized children. However, there is a significant lack of evidence in the Indian context, particularly in

states like Bihar, where psychosocial interventions are not routinely integrated into paediatric care.¹⁰

TITLE OF STUDY

A study to assess the effectiveness of ART therapy on anxiety among hospitalized school age children at selected hospitals, Sasaram, Bihar.

III.OBJECTIVES

1. To assess the pre-test and post-test level of anxiety among hospitalized school age children in the study groups.
2. To evaluate the effectiveness of art therapy on anxiety by comparing pre-test and post-test anxiety scores among hospitalized school-age children.
3. To associate the post-test level of anxiety with selected demographic variables (age, gender, duration of hospitalization, previous hospitalization).

HYPOTHESIS

Rh₁: There will be a significant reduction in the level of anxiety among hospitalized school-age children after administration of Art therapy.

Rh₂: There will be a significant association between the post-test anxiety levels of hospitalized school-age children and selected demographic variables.

IV.METHODOLOGY

Research Approach

A quantitative research approach is concerned with measurement, comparison, and statistical analysis of variables.

Research Design

The research design selected for the present study was a true experimental pre-test, post-test and control group design. A true experimental design is considered one of the most scientifically rigorous designs in research because it involves:

- Manipulation of the independent variable
- Random assignment of subjects
- Use of a control group
- Measurement before and after intervention

In the present study, the independent variable was art therapy, and the dependent variable was anxiety level among hospitalized school-age children. The children were randomly assigned into two groups:

- Experimental Group
- Control Group

Symbolic Representation of Research Design

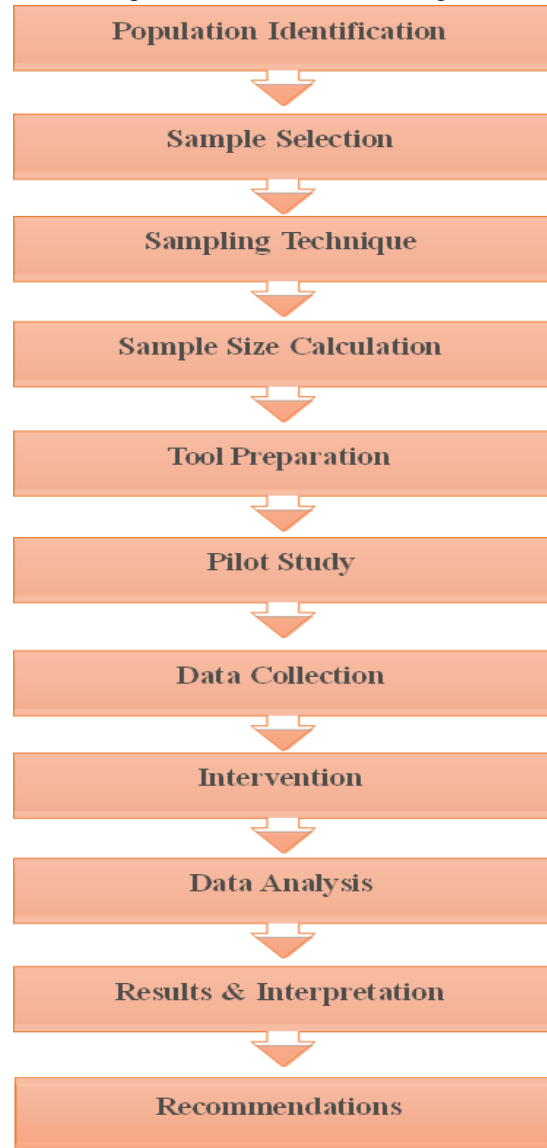
Experimental Group:

R O₁ X O₂

Control Group:

R O₁ — O₂

schematic representation of research design



V.DATA COLLECTION

Data collection is the systematic process of gathering information related to the study objectives. Permission and ethical approval were obtained before data collection.

Steps of Data Collection

1. Administrative Permission: Permission was obtained from the principal, institutional authorities, and hospital administration.
2. Selection of Participants: Hospitalized school-age children were selected based on inclusion and exclusion criteria.
3. Consent and Rapport: Parents were informed about the study, written consent was taken, and rapport was established with children.
4. Pre-test: Sociodemographic data and anxiety levels of both groups were assessed using an anxiety scale.
5. Intervention: The experimental group received art therapy, while the control group received routine care.
6. Post-test: Anxiety levels were reassessed in both groups using the same scale.
7. Documentation: All observations and scores were recorded systematically.

INTERVENTION

Protocol for Art Therapy

Before Intervention

- Introduced self and explained procedure
- Prepared materials and ensured comfort

During Intervention

- Encouraged participation and creativity
- Observed emotional responses
- Provided support and reassurance

After Intervention

- Assisted the child comfortably
- Collected materials
- Appreciated participation and documented responses

Duration of Data Collection

Experimental Group

- Day 1: Pre-test
- Day 2–6/7: Art therapy sessions
- Final Day: Post-test

Control Group

- Day 1: Pre-test
- Routine care continued
- Final Day: Post-test

This planned sequence ensured uniformity in data collection.

VI. DATA ANALYSIS

Data analysis was the process of organizing, summarizing, interpreting, and presenting data meaningfully. After data collection, responses were coded, tabulated, and entered into a master data sheet for statistical analysis.

Descriptive Statistics

Descriptive statistics such as frequency, percentage, mean, and standard deviation were used to describe demographic variables, clinical variables, and pre-test and post-test anxiety scores.

Inferential Statistics

Inferential statistics were used to determine the significance of findings.

- Paired t-test was used to compare pre-test and post-test anxiety scores within the experimental and control groups.
- Unpaired t-test was used to compare post-test anxiety scores and mean anxiety reduction between the groups.
- Chi-square test was used to determine the association between anxiety levels and selected demographic and clinical variables.

The level of significance was set at $p < 0.05$.

S. No.	Variable	Category	Frequency (n)	
			Percentage (%)	
1	Age	6–8 years	18	30.0
		9–10 years	22	36.7
		11–12 years	20	33.3
2	Gender	Male	32	53.3
		Female	28	46.7
3	Religion	Hindu	44	73.3
		Muslim	14	23.3
		Other	2	3.4
4	Type of family	Nuclear	30	50.0
		Joint	24	40.0
		Extended	6	10.0
5	Residence	Rural	38	63.3
		Urban	14	23.3
		Semi-urban	8	13.4
6	Duration of hospitalization	1–3 days	16	26.7
		4–6 days	26	43.3
		More than 6 days	18	30.0
7	Previous hospitalization	Yes	21	35.0
		No	39	65.0

Table 4.1 Distribution of hospitalized school-age children according to socio-demographic variables.

VII.RESULT

The pre-test findings showed that most hospitalized school-age children had moderate to high anxiety before the intervention. Out of 60 children, 26 (43.3%) had moderate anxiety, 26 (43.3%) had high anxiety, and only 8 (13.3%) had low anxiety. This indicated that hospitalization caused significant stress among children.

The post-test findings showed a reduction in anxiety after art therapy. In the post-test, 34 (56.7%) children had low anxiety, 20 (33.3%) had moderate anxiety, and only 6 (10.0%) had high anxiety. These findings indicated that art therapy was effective in reducing anxiety and improving emotional well-being among hospitalized children.

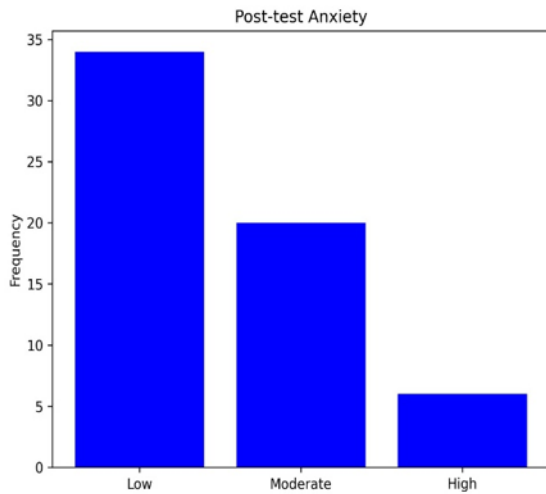


Fig. 4.9: - Post-test Anxiety

VIII.SUMMARY OF DATA ANALYSIS

The study findings showed that hospitalized school-age children experienced high levels of anxiety during hospitalization. Factors such as separation from family, unfamiliar hospital environment, and medical procedures contributed to increased anxiety.

After the administration of art therapy, a marked reduction in anxiety levels was observed. The post-test findings showed improvement in emotional well-being among children. The paired t-test revealed a highly significant difference between pre-test and post-test anxiety scores. The chi-square test showed significant association of post-test anxiety with age, duration of hospitalization, and previous hospitalization.

Overall, the findings confirmed that art therapy was an effective, simple, and non-pharmacological nursing intervention for reducing anxiety among hospitalized school-age children.

IX.DISCUSSION

The study findings showed that hospitalized school-age children experienced moderate to high anxiety due to hospitalization, unfamiliar surroundings, and medical procedures. After administration of art therapy, anxiety levels were significantly reduced. The mean anxiety score decreased from 48.6 ± 8.2 in pre-test to 31.4 ± 7.6 in post-test, showing that art therapy was effective in reducing anxiety among children.

Conclusion

The study concluded that art therapy was an effective non-pharmacological intervention for reducing anxiety among hospitalized school-age children. The intervention helped children’s express emotions, reduce fear, and improve emotional comfort during hospitalization.

Limitations

The study was conducted on a small sample size of 30 children. The study was limited to selected hospitals of Rohtas, Bihar. Short duration of intervention and follow-up. Findings cannot be generalized to all hospitalized children.

Nursing Implications

Nursing Practice

Art therapy can be used as a simple and effective nursing intervention to reduce anxiety in hospitalized children.

Nursing Education

Nursing students should be trained in non-pharmacological therapies like art therapy for pediatric care.

Nursing Administration

Hospital administrators can encourage child-friendly therapeutic activities in pediatric wards.

Nursing Research

Further studies can be conducted with larger samples and longer duration to validate the findings.

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