

“A STUDY TO ASSESS THE EFFECTIVENESS OF AN ORIGAMI WORK IN REDUCING STRESS AND ANXIETY OF HOSPITALIZED CHILDREN AT SELECTED HOSPITALS, KANPUR, UP.”

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ABSTRACT

Hospitalization can cause stress and anxiety among children due to an unfamiliar environment, and fear of medical procedures. Origami is a simple, inexpensive, non-pharmacological activity. that may help reduce stress and anxiety. A quantitative quasi-experimental non-equivalent pre-test post-test control group design was adopted. The study included 60 hospitalized children aged 6–12 years, with 30 each in the experimental and control groups, selected through non-probability purposive sampling. Data were collected using a socio-demographic schedule, Modified Perceived Stress Scale for Children (PSS-C), and Modified Spence Children's Anxiety Scale (SCAS-Child). The experimental group received origami activities for 30 minutes daily for six days, while the control group received routine care. The mean post-test stress score was 15.27 ± 6.82 in the experimental group compared with 27.03 ± 7.15 in the control group. The mean post-test anxiety score was 78.43 ± 8.62 and 105.23 ± 9.21 , respectively. Both differences were statistically significant ($p < 0.001$). Origami engagement was positively correlated

with stress reduction ($r = 0.72$) and anxiety reduction ($r = 0.76$), both statistically significant. The study concluded that origami work was effective in reducing stress and anxiety among hospitalized children.

Keywords: *Origami work, stress, anxiety, hospitalized children, therapeutic play, pediatric nursing, non-pharmacological intervention.*

INTRODUCTION

Childhood is a crucial stage of emotional, psychological, and cognitive development. School-aged children may experience stress and anxiety due to academic pressure, peer relationships, and family challenges, affecting their mental well-being, learning, and social interactions. Therefore, child-friendly interventions are needed to promote emotional health and reduce stress.

A child's In addition to physical well-being, overall health includes mental, emotional, and aspects of development. The holistic well-being of children is the focus of pediatric health. from conception to adolescence and to make it possible for every child to grow up

to be a healthy adult.¹ A child's manner of life, or everyday "job," is play. It's also one of the most effective stress-reduction techniques from childhood. hospitalization put the child and his or her family under a lot of stress and make it difficult to adjust. Nurses provide comfort, strength, and information to parents and their children.²

Hockenberry, Wilson, and Winkelstein state that the loss of control, parental separation and anxiety about physical harm and discomfort are the main factors that can lead to stress during the hospital stay. Children who are hospitalized experience anxiety and fear between the ages of four and six.³ Hospitalization is a planning process that necessitates the child's stay in the hospital for medication and treatment. However, hospitalization is still a significant issue that makes kids feel scared and anxious, forces them to leave familiar surroundings and loved ones, and stops them from playing and engaging in daily activities.⁴

hospitalization presents an unfamiliar and often distressing experience. While children may have established rapport with healthcare professionals in outpatient settings, they are typically too young to understand that hospital staff are similarly supportive.⁵ The pioneer of modern nursing, Florence Nightingale, highlighted the significance of play for kids in hospitals. Among the first nurses to carry out a study was Florence Erikson. of play therapies for kids in hospitals. According to her research, the kids were friendly and helpful when they took part in play activities in the hospital.⁶

Origami is one type of play therapy. The traditional Japanese practice of folding paper is called origami, which means "folding" (ori) and "paper"

(gami). Kids no longer have to struggle with origami as a result.⁷ Origami therapy is the practice of paper folding as a therapeutic tool to help people improve their mental & emotional health. Origami has been proven to possess therapeutic advantages the activity is been used to help individuals with psychological aspects such as feelings of acceptance child who are having emotional & mental problem sense a feeling of acceptance while being taught the art of origami.⁸

Children's coping mechanisms for stress and anxiety may be revealed through origami play. It may also have an impact on how well kids and their surroundings get along, and it could be a way for kids to manage unforeseen circumstances and influence results. Unstructured play is especially gives kids authority over relationships, ideas, and events.⁹ This study aims to fill this gap by assessing the impact of origami work on reducing anxiety in children in hospitals . using a pre, post-test that are quasi experimental control group design, the study seeks to provide robust evidence for incorporating origami therapy as a non-pharmacological intervention in paediatric healthcare.¹⁰

Hospitalization can cause stress and anxiety in children due to unfamiliar surroundings, medical procedures, and separation from parents. Origami is a simple, inexpensive activity that promotes creativity and distraction. Therefore, origami may help reduce stress and anxiety among hospitalized children.

NEED FOR THE STUDY

Children often feel anxious and stressed during hospitalization because of unfamiliar surroundings, separation from family, and medical treatments. These feelings may affect their

behavior, cooperation, and recovery. Simple non-pharmacological interventions can help children feel more comfortable during hospitalization. Making origami is a simple, inexpensive project that can divert attention and promote relaxation. Since such activities are not commonly practiced in pediatric wards, The current investigation was carried out to evaluate the efficacy of origami on hospitalized patients' stress and anxiety kids.

"Only Limited studies in Uttar Pradesh have explored non-pharmacological interventions like origami to reduce stress and anxiety among hospitalized children." The study focuses on addressing the psychological effects of hospitalization and enhancing the emotional well-being of children during their hospital stay. Hospitalization often exposes children to unfamiliar surroundings, separation from family members, medical procedures, and restricted activities, which may lead to fear, stress, and anxiety.

Non-pharmacological interventions such as origami therapy are simple, safe, and cost-effective techniques that can provide distraction, encourage expression, and promote relaxation among children. Therefore, the purpose of this study is to assess how well origami therapy reduces stress and anxiety in hospitalized children and to provide evidence for implementing therapeutic play interventions as a part of routine pediatric nursing care.

STATEMENT OF THE STUDY -

A study to assess the effectiveness of an origami work in reducing stress and anxiety among hospitalized children at selected hospitals at Kanpur, u.p.

OBJECTIVE OF THE STUDY -

1. To assess the pre-test level of stress and anxiety among

hospitalized children before administration of origami work

2. To evaluate the effectiveness of an origami work among hospitalized children (experimental group) in reducing the stress and anxiety.
3. To determine the correlation between the level of engagement in the origami work and the reduction in stress and anxiety levels among hospitalized children in the experimental group.
4. To find significant association between stress and anxiety levels among hospitalized children (both experimental and control group) with their selected demographic variables.

HYPOTHESES:

Null hypothesis -

H₀₁: There is no significant difference between pre-test and post test stress and anxiety scores of hospitalized children following the origami activity.

H₀₂: There is no significant correlation between the level of engagement in the origami activity and the reduction in stress and anxiety levels among hospitalized children.

H₀₃: There is no significant association between pre-intervention stress and anxiety levels with selected demographic variables of hospitalized children.

Research hypothesis -

H₁: There will be a significant difference between pre-test and post-test stress and anxiety scores of hospitalized children after the origami activity.

H₂: There will be a correlation between the level of engagement in origami activity and the reduction in stress and anxiety levels.

H₃: There will be a significant association between pre-intervention

stress and anxiety levels with selected demographic variables.

MATERIALS AND METHODS

Research approach:

A quantitative research approach was adopted.

Research design:

A quasi-experimental pre-test post-test control group design was used.

VARIABLES OF THE STUDY

Independent Variable: The independent variable was origami intervention, consisting of therapeutic paper-folding activities for hospitalized children.

Dependent Variables: The dependent variables were stress and anxiety levels among hospitalized children aged 6–12 years, measured using the Modified PSS-C and Modified SCAS-Child.

Socio-Demographic Variables: Age, gender, type of family, educational status of child, educational status of mother, educational status of father, and duration of hospital stay.

POPULATION

The study population comprised hospitalized children aged 6–12 years.

Target Population: All hospitalized children aged 6–12 years admitted to pediatric wards in hospitals of Kanpur, Uttar Pradesh.

Accessible Population: Hospitalized children aged 6–12 years admitted to U.H.M. Ursula Horsman Memorial Hospital, Kanpur, and Shyam Children and Maternity Centre, Kalyanpur, Kanpur.

Sample: The sample consisted of 60 hospitalized children aged 6–12 years:

30 in the experimental group and 30 in the control group.

Sampling technique: Non-probability purposive sampling technique was used.

SAMPLING CRITERIA

Inclusion Criteria

Children who:

- were six to twelve years old.
- were able to engage in origami activities while being aware and awake.
- whose guardians or parents provided written approval
- able to comprehend both Hindi and English

Exclusion Criteria

Children who:

- Were very sick or mentally challenged
- Were receiving anti-anxiety medications
- Were admitted in ICU or emergency care requiring continuous monitoring

METHODS OF DATA COLLECTION

Data were collected using:

- Structured socio-demographic data sheet
- Modified Perceived Stress Scale for Children (Modified PSS-C)
- Modified Spence Children's Anxiety Scale (Modified SCAS-Child)

DESCRIPTION OF THE TOOL

Tool I: Socio-Demographic Data Sheet

Consisted of 7 items covering

children's demographic characteristics and duration of hospital stay.

Tool II: Modified PSS-C

Consisted of 13 items to assess stress, scored from 0–3, with a total score of 0–39, categorized as low, moderate, or high stress.

Tool III: Modified SCAS-Child

Consisted of 44 items across six domains to assess anxiety, scored from 0–3 and categorized into four anxiety levels.

RESULTS (Major Findings)

SECTION A: Frequency and Percentage Distribution of Children According to Their Socio-Demographic Characteristics

The major findings of the study were as follows:

Age: The majority of children in both the experimental and control groups (63.33%) were aged 10–12 years, while 36.67% were aged 6–9 years.

Gender: Males constituted 66.67% of the experimental group and 63.33% of the control group, whereas females accounted for 33.33% and 36.67%, respectively.

Type of Family: Nuclear families accounted for 46.67% of the experimental group and 50% of the

control group. Joint families accounted for 36.67% and 33.33%, respectively, while extended families represented 16.67% in both groups.

Educational Status of Children: The majority of children (63.33%) in both groups were studying in the 4th–6th standard, while 36.67% were studying in the 1st–3rd standard.

Mother's Educational Status: Most mothers in both groups (63.33%) had primary education, while 36.67% had secondary education. No mothers had graduation or post-graduation qualifications.

Father's Educational Status: Secondary education was reported among 50% of fathers in the experimental group and 53.33% in the control group. Graduation was reported among 33.33% in both groups, while primary education accounted for 16.67% and 13.33%, respectively.

Duration of Hospital Stay: Most children stayed in the hospital for four days or more, accounting for 60% of the experimental group and 56.67% of the control group. A three-day stay was reported for 16.67% in both groups, while a one-day stay was reported for 13.33% of the experimental group and 16.67% of the control group. A two-day stay was reported for 10% of children in both the experimental and control groups.

SECTION B: Pre-Test Levels of Stress and Anxiety Among Hospitalized Children

Table 1. Frequency and Percentage Distribution of Pre-Test Stress and Anxiety Levels (N = 60)

Level	Experimental Group (n=30) f (%)	Control Group (n=30) f (%)
Stress		
Low	3 (10.00%)	2 (6.67%)
Moderate	6 (20.00%)	9 (30.00%)
High	21 (70.00%)	19 (63.33%)
Anxiety		
No anxiety	3 (10.00%)	3 (10.00%)
Above-average anxiety	4 (13.33%)	5 (16.67%)
High anxiety	9 (30.00%)	10 (33.33%)
Extremely high anxiety	14 (46.67%)	12 (40.00%)

The findings revealed that, in the experimental group, 70% of children had high stress, 20% had moderate stress, and 10% had low stress. In the control group, 63.33% had high stress, 30% had moderate stress, and 6.67% had low stress. Regarding anxiety, 46.67% of children in the experimental group and 40% in the control group had extremely high anxiety. High anxiety was observed in 30% and

33.33% of children, respectively. Above-average anxiety was found in 13.33% of the experimental group and 16.67% of the control group, while 10% of children in both groups had no anxiety.

Overall, the pre-test findings indicated that both groups had comparable stress and anxiety levels before the intervention.

SECTION C: Effectiveness of Origami Work in Reducing Stress and Anxiety

Table 2. Comparison of Post-Test Stress and Anxiety Scores Between Experimental and Control Groups (N = 60)

Variable	Group	Mean $\pm$ SD	t-value	p-value	Inference
Stress	Experimental	15.27 $\pm$ 6.82	6.12*	0.001	Significant
	Control	27.03 $\pm$ 7.15			
Anxiety	Experimental	78.43 $\pm$ 8.62	12.41*	0.001	Significant
	Control	105.23 $\pm$ 9.21			

The experimental group had lower mean post-test stress (15.27 ± 6.82) and anxiety scores (78.43 ± 8.62) than the control group (27.03 ± 7.15 and 105.23 ± 9.21 , respectively). The differences were statistically significant ($p = 0.001$), indicating that origami work was effective in reducing stress and anxiety among hospitalized children. Therefore, the null hypothesis (H_{01}) was rejected, and the research hypothesis (H_1) was accepted.

SECTION D: Correlation Between Origami Engagement and Reduction in Stress and Anxiety

Table 3. Correlation Between Origami Engagement and Reduction in Stress and Anxiety Among Hospitalized Children (n = 30)

Variables	Mean $\pm$ SD	Correlation (r)	p-value	Inference
Engagement and stress reduction	8.20 ± 1.21 ; 7.90 ± 1.18	0.72	0.001	Significant
Engagement and anxiety reduction	8.20 ± 1.21 ; 9.50 ± 1.36	0.76	0.001	Significant

The findings revealed a significant positive correlation between origami engagement and stress reduction ($r = 0.72$, $p = 0.001$) and anxiety reduction ($r = 0.76$, $p = 0.001$). This indicates that greater engagement in origami activities was associated with greater reductions in stress and anxiety among hospitalized children. Therefore, the null hypothesis (H_{02}) was rejected, and the research hypothesis (H_2) was accepted.

SECTION E: Association Between Pre-Test Stress and Anxiety Levels and Selected Demographic Variables

The findings revealed that there was no statistically significant association between pre-test stress and selected socio-demographic variables in the experimental group ($\chi^2 = 0.00$ – 1.74) and control group ($\chi^2 = 0.19$ – 2.16). Similarly, no statistically significant

association was found between pre-test anxiety and selected socio-demographic variables in the experimental group ($\chi^2 = 0.52$ – 2.87) or control group ($\chi^2 = 0.14$ – 3.12), as all reported p-values were greater than 0.05. These findings indicate that age, gender, family type, educational status of the child and parents, and duration of hospital stay were not significantly associated with pre-test stress and anxiety levels among hospitalized children. Hence, the null hypothesis (H_{03}), stating that there is no significant association between pre-test stress and anxiety levels and selected socio-demographic variables, was retained, and the research hypothesis (H_3) was not supported.

NURSING IMPLICATIONS

The study findings indicate that origami work may help reduce stress

and anxiety among hospitalized children.

Nursing Education

Educate nursing students about origami and other non-pharmacological interventions in pediatric care.

Nursing Practice

Nurses can use supervised origami activities to promote relaxation and emotional well-being among hospitalized children.

Nursing Administration

Nurse administrators can encourage therapeutic play activities in pediatric wards.

Nursing Research

Further research can evaluate the effectiveness of origami in reducing stress and anxiety among children.

LIMITATIONS

- The study was limited to 60 children aged 6–12 years in selected hospitals in Kanpur.
- The findings may have limited generalizability.
- Long-term effects of origami were not assessed.

RECOMMENDATIONS

- Conduct similar studies with larger samples and multiple hospitals.
- Compare children from rural and urban areas.
- Assess the long-term effects of origami.
- Compare origami with other play-based interventions.

FINANCIAL SUPPORT AND SPONSORSHIP

Nill

CONFLICT & INTEREST

There is no any conflict of interest

CONCLUSION

The study concluded that origami work was effective in reducing stress and anxiety among hospitalized children aged 6–12 years. The experimental group showed significantly lower post-test stress and anxiety scores than the control group ($p = 0.001$). A significant positive correlation was

found between origami engagement and stress reduction ($r = 0.72$) and anxiety reduction ($r = 0.76$). No significant association was found between pre-test stress and anxiety levels and selected socio-demographic variables. Thus, origami work may be incorporated into pediatric nursing care as a simple, cost-effective, non-pharmacological therapeutic play activity.

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