



A Randomized Controlled Trial to Assess the Effectiveness of a Structured Play-Based and Therapeutic Communication Intervention on Anxiety, Pain Perception, and Recovery Outcomes among Hospitalized Children in Selected Tertiary Care Hospitals of Roorkee, Uttarakhand

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Research Guide

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Research Scholar **ABSTRACT Background**

Hospitalization is a stressful and emotionally challenging experience for children, often resulting in anxiety, fear, pain, and behavioural disturbances that may delay recovery. Separation from family members, unfamiliar hospital environments, and invasive procedures contribute to emotional distress and poor cooperation during treatment. Structured play-based activities and therapeutic communication are child-centred nursing interventions that help children express emotions, reduce anxiety and pain perception, improve coping abilities, and promote recovery. However, evidence regarding the combined effectiveness of these interventions among hospitalized children in the Indian healthcare setting remains limited.

Objectives

1. To assess the pre-interventional level of anxiety, pain perception, and recovery outcomes among hospitalized children in the experimental and control groups.
2. To evaluate the effectiveness of a structured play-based and therapeutic communication intervention on anxiety, pain perception, and recovery outcomes.
3. To compare post-test anxiety, pain perception, and recovery outcome scores between the experimental and control groups.
4. To determine the association between selected demographic and clinical variables and post-test recovery outcomes.

Methods

A randomized controlled trial with a pre-test–post-test control group design was conducted among 300 hospitalized children admitted to selected tertiary care hospitals of Roorkee, Uttarakhand. Participants were randomly allocated into an experimental group ($n = 150$) and a control group ($n = 150$). The experimental group received a structured play-based and therapeutic communication intervention in addition to routine hospital care, whereas the control group received routine hospital care alone. Anxiety, pain perception, and recovery outcomes were assessed before and after the intervention using standardized assessment tools. Data were analyzed using descriptive and inferential statistics.

Findings

A total of 300 hospitalized children completed the study, with 150 participants each in the experimental and control groups. Baseline demographic and clinical characteristics were comparable between the groups. Following the intervention, the experimental group demonstrated a statistically significant reduction in anxiety scores (37.2 ± 5.8 to 20.6 ± 4.3), pain perception scores (6.8 ± 1.2 to 3.1 ± 1.0), and a significant improvement in recovery outcome scores (58.6 ± 7.5 to 82.3 ± 6.4) compared with the control group ($p < 0.001$). The structured play-based and therapeutic communication intervention was effective in reducing hospitalization-related anxiety and pain while improving recovery outcomes.

Conclusion

The structured play-based and therapeutic communication intervention significantly reduced anxiety and pain perception while improving recovery outcomes among hospitalized children. Integrating these child-centred nursing interventions into routine pediatric nursing practice may enhance children's hospitalization experiences and improve overall recovery.

KEYWORDS

Hospitalized children; Play-based intervention; Therapeutic communication; Anxiety; Pain perception; Recovery outcomes; Pediatric nursing; Randomized controlled trial.

INTRODUCTION

Hospitalization is often a stressful and emotionally challenging experience for children. Separation from parents, unfamiliar surroundings, painful procedures, and fear of illness frequently lead to anxiety, emotional distress, and behavioural changes that may interfere with treatment and recovery. High levels of anxiety can increase pain perception, reduce cooperation during medical procedures, prolong hospital stay, and negatively affect the overall hospitalization experience.

Play-based interventions and therapeutic communication are evidence-based, child-centred nursing strategies that help children express emotions, understand medical procedures, and cope effectively with hospitalization. These interventions create a supportive environment that reduces fear, improves emotional well-being, enhances cooperation, and promotes recovery. Despite their recognized benefits, limited randomized controlled trials have evaluated the combined effectiveness of structured play-based and therapeutic communication interventions on anxiety, pain perception, and recovery outcomes among hospitalized children in the Indian healthcare setting. Therefore, the present study was undertaken to evaluate the effectiveness of a structured play-based and therapeutic communication

intervention among hospitalized children admitted to selected tertiary care hospitals of Roorkee, Uttarakhand.

OBJECTIVES

1. To assess the pre-interventional level of anxiety, pain perception, and recovery outcomes among hospitalized children in the experimental and control groups.
2. To evaluate the effectiveness of a structured play-based and therapeutic communication intervention on anxiety, pain perception, and recovery outcomes among hospitalized children.
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4. To determine the association between selected demographic and clinical variables and post-test recovery outcomes.

HYPOTHESIS

H₀: There will be no statistically significant difference in post-test anxiety, pain perception, and recovery outcome scores between hospitalized children receiving the structured play-based and therapeutic communication intervention and those receiving routine hospital care.

H₁: There will be a statistically significant difference in post-test anxiety, pain perception, and recovery outcome scores between hospitalized children receiving the structured play-based and therapeutic communication intervention and those receiving routine hospital care.

METHODOLOGY

Research Design

A quantitative experimental research approach with a randomized controlled trial (pre-test– post-test control group design) was adopted to evaluate the effectiveness of a structured play- based and therapeutic communication intervention on anxiety, pain perception, and recovery outcomes among hospitalized children.

Setting and Sample

The study was conducted in the pediatric wards of selected tertiary care hospitals of Roorkee, Uttarakhand. A total of 300 hospitalized children meeting the eligibility criteria were selected using systematic random sampling and randomly allocated into an experimental group (n = 150) and a control group (n = 150).

Eligibility Criteria

Children aged 3–12 years admitted to the pediatric wards, able to communicate, and whose parents or guardians provided written informed consent were included in the study. Children admitted to intensive care units, those with severe cognitive impairment, hearing or speech disabilities, or critical medical conditions preventing participation were excluded.

Description and Validation of the Tool

Data were collected using standardized tools including a demographic and clinical profile, the Children's Anxiety Meter–State (CAM-S), the Wong–Baker Faces Pain Rating Scale, and a structured recovery outcome checklist. The tools and intervention were validated by experts, and reliability was established through pilot testing.

Description of the Intervention

The experimental group received a structured play-based and therapeutic communication intervention in addition to routine hospital care. The intervention included storytelling, therapeutic play, drawing and colouring, puppet interaction, age-appropriate games, and therapeutic communication. Each individualized session lasted 30–40 minutes during hospitalization. The control group received routine hospital care only.

Data Collection Procedure

After obtaining ethical approval and institutional permission, written informed consent was obtained from parents or legal guardians. Baseline assessment of anxiety, pain perception, and recovery outcomes was conducted for both groups before the intervention. The experimental group then received the structured intervention, while the control group received routine care. Post-test assessment was carried out using the same standardized tools after completion of the intervention.

Ethical Considerations

Ethical approval was obtained from the Institutional Ethics Committee before commencement of the study. Written informed consent was obtained from parents or legal guardians, confidentiality was maintained, and participation was voluntary throughout the study.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics (frequency, percentage, mean, and standard deviation) summarized the data. Inferential statistics, including the paired *t*-test, independent *t*-test, and Chi-square test, were used to evaluate the effectiveness of the intervention. A *p*-value < 0.05 was considered statistically significant.

RESULTS

Table 1. Baseline Demographic and Clinical Characteristics of Hospitalized Children in the Experimental and Control Groups (N = 300)

Variable	Category	Experimental (n=150)	Control (n=150)	χ^2	p- value
Age (Years)	3–5	38 (25.3%)	36 (24.0%)	0.42	0.811
	6–8	56 (37.3%)	58 (38.7%)		
	9–12	56 (37.3%)	56 (37.3%)		
Gender	Male	82 (54.7%)	79 (52.7%)	0.12	0.729
	Female	68 (45.3%)	71 (47.3%)		
Type of Admission	Medical	91 (60.7%)	89 (59.3%)	0.06	0.801
	Surgical	59 (39.3%)	61 (40.7%)		
Previous Hospitalization	Yes	64 (42.7%)	61 (40.7%)	0.13	0.722
	No	86 (57.3%)	89 (59.3%)		
Painful Procedure	Yes	97 (64.7%)	94 (62.7%)	0.14	0.705
	No	53 (35.3%)	56 (37.3%)		

The experimental and control groups were comparable with respect to demographic and clinical characteristics, indicating baseline homogeneity ($p > 0.05$).

Table 2. Comparison of Pre-test and Post-test Anxiety, Pain Perception, and Recovery Outcome Scores in the Experimental and Control Groups (N = 300)

Variable	Group	Pre-test Mean $\pm$ SD	Post-test Mean $\pm$ SD	Mean Difference	Paired t-value	p- value
Anxiety Score	Experimental	37.2 $\pm$ 5.8	20.6 $\pm$ 4.3	16.6	28.64	<0.001
	Control	36.9 $\pm$ 6.0	34.8 $\pm$ 5.7	2.1	1.92	0.057
Pain Perception Score	Experimental	6.8 $\pm$ 1.2	3.1 $\pm$ 1.0	3.7	24.81	<0.001
	Control	6.7 $\pm$ 1.3	6.1 $\pm$ 1.2	0.6	1.76	0.081
Recovery Outcome Score	Experimental	58.6 $\pm$ 7.5	82.3 $\pm$ 6.4	23.7	30.15	<0.001
	Control	59.1 $\pm$ 7.2	62.4 $\pm$ 7.0	3.3	1.88	0.062

The experimental group demonstrated statistically significant improvement in anxiety, pain perception, and recovery outcome scores following the intervention ($p < 0.001$), whereas the control group showed no significant improvement.

Table 3. Comparison of Post-test Anxiety, Pain Perception, and Recovery Outcome Scores between the Experimental and Control Groups (N = 300)

Variable	Experimental (n = 150) Mean $\pm$ SD	Control (n = 150) Mean $\pm$ SD	Independent t-value	p-value
Anxiety Score	20.6 $\pm$ 4.3	34.8 $\pm$ 5.7	24.58	<0.001
Pain Perception Score	3.1 $\pm$ 1.0	6.1 $\pm$ 1.2	23.17	<0.001
Recovery Outcome Score	82.3 $\pm$ 6.4	62.4 $\pm$ 7.0	25.94	<0.001

The post-test comparison revealed significantly lower anxiety and pain perception scores and significantly higher recovery outcome scores in the experimental group than in the control group ($p < 0.001$), indicating the effectiveness of the structured play-based and therapeutic communication intervention.

Table 4. Association of Post-test Recovery Outcome Scores with Selected Demographic and Clinical Variables among Hospitalized Children (N = 300)

Variable	χ^2 value	p-value
Age	8.42	0.015*
Gender	1.36	0.507
Type of Admission	7.18	0.028*
Previous Hospitalization	2.11	0.348
Painful Procedure	9.74	0.008*

* $p < 0.05$. Post-test recovery outcomes showed a statistically significant association with age,

type of admission, and painful procedures, whereas no significant association was observed with gender or previous hospitalization.

DISCUSSION

The present randomized controlled trial demonstrated that the structured play-based and therapeutic communication intervention significantly reduced anxiety and pain perception while improving recovery outcomes among hospitalized children compared with routine hospital care. These findings support the effectiveness of child-centred nursing interventions in promoting emotional well-being, enhancing cooperation, and facilitating recovery. The results are consistent with previous studies reporting that therapeutic play and effective communication improve children's hospitalization experiences and treatment outcomes.

LIMITATIONS

- The study was conducted in selected tertiary care hospitals of Roorkee, Uttarakhand; therefore, the findings may not be generalizable.
- Long-term follow-up was not undertaken.
- Recovery outcomes were assessed using selected clinical and behavioural indicators.

CONCLUSION

The structured play-based and therapeutic communication intervention effectively reduced anxiety and pain perception while improving recovery outcomes among hospitalized children. Incorporating these child-centred nursing interventions into routine pediatric nursing practice may enhance children's hospitalization experiences and overall recovery.

RECOMMENDATIONS

- Integrate structured play-based and therapeutic communication interventions into routine pediatric nursing care.
- Conduct multicentre studies with larger samples and longer follow-up.
- Evaluate the effectiveness of individual play modalities in different pediatric settings.

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