



A Comparative Study of Anxiety and Pain Perception among Hospitalized Children Receiving a Structured Play-Based and Therapeutic Communication Intervention in Selected Tertiary Care Hospitals of Roorkee, Uttarakhand

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ABSTRACT Background

Hospitalization can be a distressing experience for children due to unfamiliar surroundings, separation from caregivers, medical procedures, and physical discomfort. Anxiety may intensify children's perception of pain and affect their cooperation during treatment. Child- centred approaches such as structured play and therapeutic communication may help children cope with these experiences. The present study was conducted to compare anxiety and pain perception among hospitalized children receiving a structured play-based and therapeutic communication intervention with those receiving routine hospital care.

Objectives

1. To assess the pre-test level of anxiety and pain perception 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 and pain perception among hospitalized children.
3. To compare post-test anxiety and pain perception scores between the experimental and control groups.
4. To determine the association between selected demographic and clinical variables and post-test anxiety and pain perception scores among hospitalized children.

Methods

A quantitative experimental study using a randomized pre-test–post-test control group design was conducted among 300 hospitalized children aged 3–12 years admitted to selected tertiary care hospitals of Roorkee, Uttarakhand. Participants were allocated to an experimental group ($n = 150$) and a control group ($n = 150$). The experimental group received structured play-based activities and therapeutic communication in addition to routine hospital care, while the control group received routine hospital care. Anxiety was assessed using the Children's Anxiety Meter–State (CAM-S) and pain perception using the Wong–Baker Faces Pain Rating Scale. Pre-test and post-test assessments were conducted using the same standardized tools.

Results

The experimental group demonstrated a significant reduction in mean anxiety scores from 37.2

± 5.8 to 20.6 ± 4.3 ($t = 28.64$, $p < 0.001$) and in pain perception scores from 6.8 ± 1.2 to $3.1 \pm$

1.0 ($t = 24.81$, $p < 0.001$). In the control group, changes in anxiety and pain perception were not statistically significant. Post-test comparison showed significantly lower anxiety and pain perception scores in the experimental group than in the control group ($p < 0.001$). A draft association analysis was also planned for selected demographic and clinical variables.

Conclusion

The structured play-based and therapeutic communication intervention was effective in reducing anxiety and pain perception among hospitalized children. Incorporating structured play and therapeutic communication into routine pediatric nursing care may help children cope more effectively with hospitalization and painful experiences.

Keywords: Hospitalized children; Anxiety; Pain perception; Structured play; Therapeutic communication; Pediatric nursing; Randomized controlled trial.

INTRODUCTION

Hospitalization can cause considerable emotional distress in children. Unfamiliar surroundings, separation from caregivers, painful procedures, and fear of medical care may contribute to anxiety and increased perception of pain. These responses can interfere with children's cooperation and make the hospital experience more difficult.

Structured play provides children with an appropriate means of distraction and emotional expression, while therapeutic communication can provide reassurance and help children understand and cope with their experiences. Combining these approaches may therefore be useful in reducing anxiety and pain perception during hospitalization.

Although play and communication-based approaches are used in pediatric nursing, there is a need to evaluate their combined effect on anxiety and pain perception among hospitalized children. Therefore, the present randomized controlled trial was undertaken to compare anxiety and pain perception among hospitalized children receiving a structured play-based and therapeutic communication intervention with those receiving routine hospital care.

OBJECTIVES

1. To assess the pre-test level of anxiety and pain perception 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 and pain perception among hospitalized children.
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HYPOTHESES

H₀: There will be no statistically significant difference in post-test anxiety and pain perception scores between the experimental and control groups.

H₁: There will be a statistically significant difference in post-test anxiety and pain perception scores between the experimental and control groups after the structured play-based and therapeutic communication intervention.

METHODOLOGY

Research Approach and Design

A quantitative experimental approach with a randomized pre-test–post-test control group design was adopted to evaluate the effect of a structured play-based and therapeutic communication intervention on anxiety and pain perception among hospitalized children.

The study included two groups:

Experimental Group: Received the structured play-based and therapeutic communication intervention in addition to routine hospital care.

Control Group: Received routine hospital care alone.

Both groups were assessed before and after the intervention using standardized assessment tools.

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 were included, with 150 children in the experimental group and 150 in the control group. The source study specifies random allocation of participants into the two groups.

Sampling and Eligibility Criteria

Children aged 3–12 years, admitted to the pediatric wards, able to communicate, and whose parents or legal guardians provided written informed consent were included.

Children admitted to intensive care units, those with severe cognitive impairment, hearing or speech disabilities, or critical medical conditions preventing participation were excluded.

Eligible participants were recruited according to the inclusion criteria and were randomly allocated to the experimental and control groups using a computer-generated randomization sequence.

Description and Validation of Tools

Data were collected using standardized assessment tools comprising:

- ▣ Part I: Demographic and clinical profile.
- ▣ Part II: Children's Anxiety Meter–State (CAM-S) for assessment of anxiety.
- ▣ Part III: Wong–Baker Faces Pain Rating Scale for assessment of pain perception.

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 approximately 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. Pre-test assessment of anxiety and pain perception was conducted in both groups before the intervention.

The experimental group then received the structured intervention, while the control group received routine care. Post-test assessment was conducted 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 of participant information was maintained, and participation was voluntary throughout the study.

Data Analysis

Data were analyzed using the Statistical Package for the Social Sciences (SPSS). Frequency, percentage, mean, and standard deviation were used for descriptive analysis. Paired *t*-test was used to compare pre-test and post-test scores within groups, while independent *t*-test was used to compare post-test anxiety and pain perception scores between the experimental and control groups. 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 selected demographic and clinical characteristics, indicating baseline homogeneity ($p > 0.05$).

Table 2. Comparison of Pre-test and Post-test Anxiety and Pain Perception 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

*Statistically significant at $p < 0.05$.

The experimental group demonstrated statistically significant reductions in anxiety and pain perception following the intervention ($p < 0.001$). The control group did not demonstrate statistically significant changes in either outcome.

Table 3. Comparison of Post-test Anxiety and Pain Perception 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*

*Statistically significant at $p < 0.05$.

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

Table 4. Association Between Selected Demographic and Clinical Variables and Post-test Anxiety and Pain Perception Scores among Hospitalized Children (N = 300)

Selected Variable	Anxiety χ^2	p-value	Pain Perception χ^2	p-value
Age	3.71	0.054	8.77	0.003*
Gender	15.80	<0.001*	37.87	<0.001*
Type of Admission	34.17	<0.001*	40.43	<0.001*
Previous Hospitalization	51.43	<0.001*	77.14	<0.001*
Painful Procedure	5.91	0.015*	1.79	0.181

*Statistically significant at $p < 0.05$. Association analysis indicated that gender, type of admission, and previous hospitalization were significantly associated with both post-test anxiety and pain perception ($p < 0.05$). Age was significantly associated with post-test pain perception but not anxiety. Painful procedure showed a significant association with anxiety but not with pain perception.

DISCUSSION

The present randomized controlled trial found that children who received the structured play-based and therapeutic communication intervention had significantly lower anxiety and pain perception after the intervention compared with those receiving routine hospital care. The findings suggest that combining structured play with therapeutic communication can provide effective emotional support and help children cope better with hospitalization and painful experiences. The results support the use of child-centred nursing interventions as part of routine pediatric care.

LIMITATIONS

1. The study was conducted in selected tertiary care hospitals of Roorkee, Uttarakhand; therefore, generalization to other settings may be limited.
2. The assessment was limited to the hospitalization period, and long-term effects were not evaluated.

3. Anxiety and pain perception were assessed using selected standardized scales and may be influenced by individual responses.

CONCLUSION

The structured play-based and therapeutic communication intervention was effective in reducing anxiety and pain perception among hospitalized children. Integrating these approaches into routine pediatric nursing care may provide better emotional support and help children cope with hospitalization and painful procedures.

RECOMMENDATIONS

1. Structured play and therapeutic communication should be incorporated into routine pediatric nursing practice.
2. Similar randomized controlled trials should be conducted in different hospitals with larger samples and longer follow-up.
3. Future studies may compare different play modalities for managing anxiety and pain among hospitalized children.

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