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**Original Research Article**

# Effectiveness of play therapy on the level of anxiety among hospitalized children admitted to selected wards at a tertiary care centre, Lucknow

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## ABSTRACT

**Background:** Play is essential for children's physical and emotional development. Play therapy utilizes this natural ability to promote emotional well-being and self-expression.
**Methods:** A quasi-experimental, time series non-equivalent control group design was used with 70 children (3-6 years) admitted to paediatric wards at Vivekananda Polyclinic and Institute of Medical Sciences (V. P. I. M. S.), Lucknow. The modified preschool anxiety scale was administered to both groups. Play therapy (building blocks, puzzles, doctor/kitchen sets, drawing) was introduced for the experimental group from day 3 to day 6 (two-hour sessions).
**Results:** The experimental group showed a significant anxiety reduction ($p<0.001$), while the control group exhibited minimal improvement.
**Conclusions:** The findings confirm that play therapy effectively reduces anxiety in hospitalized children.

**Keywords:** Modified preschool anxiety scale, Hospitalization, Level of anxiety, Play therapy, Children (3-6 years)

## INTRODUCTION

The modern world is dynamic and complicated. Play empowers children to construct individual personality, self-esteem, and strength, which are exceptionally critical for inside soundness and thriving.

It is process of discovering and understanding their inner self and surroundings. Play therapy is primarily practised to address children's emotional challenges to do justice to their uniqueness and skills to promote higher thinking.[1-4]

Healthcare facilities are an unfamiliar environment for children. Based on stages of milestones, and previous experiences, children show a range of feelings customarily associated with hospitalization. During hospitalization, healthcare providers can execute play therapy amid nursing paediatric patients that soothe fear and uneasiness.[5-7]

### *Objectives*

Objectives of the study were to assess the level of anxiety among hospitalized children before and after administering play therapy in experimental and control group, to determine the effectiveness of play therapy among hospitalized children in experimental group and to determine the association between pre level of anxiety among hospitalized children (both experimental as well as the control group) with their selected demographic variables.

## METHODS

### *Study type*

Quantitative evaluative research was applied to this study.

***Research design***

To assess the effectiveness of play therapy on the level of anxiety among hospitalized children (3-6 years) admitted in selected wards at Vivekananda Polyclinic and Institute of Medical Sciences, Lucknow. The investigator adopted 'Quasi-experimental time series non-equivalent control group design.

**Table 1: Schematic representation of research design.**

| | Day 1 | Day 2 | Day 3 | Day 3 | Day 4 | Day 5 | Day 6 |
|---|---|---|---|---|---|---|---|
| **Experimental group** | $O_1$ | $O_2$ | $O_3$ | **Intervention (X)** | $O_4$ | $O_5$ | $O_6$ |
| **Control group** | $O_1$ | $O_2$ | $O_3$ | | $O_4$ | $O_5$ | $O_6$ |

*O: represents observations and X: represents modified preschool anxiety scale (parent report)

***Setting of the study***

Setting of the study was V. P. I. M. S., (Paediatric ward, paediatric reconstructive wards -smile train, and plastic ward) Lucknow.

***Population***

The population for the present study included the children under the age of 3-6 years admitted in selected wards i. e; paediatric ward, paediatric reconstructive wards -smile train, and plastic ward.

***Target population***

In this study the target populations were the children under the age of 3-6 years admitted in the selected wards i.e. pediatric, pediatric reconstructive ward-smile train, and plastic ward at V. P. I. M. S., Lucknow.

***Accessible population***

In this study accessible populations were those children who had fulfilled inclusion criteria and were under age of 3-6 years admitted in the selected wards i.e. pediatric, smile train, and plastic ward at V. P. I. M. S., Lucknow.

***Sample***

The sample for present study comprises children under age of 3-6 years admitted in selected wards i.e. pediatric, smile train, and plastic ward at V. P. I. M. S., Lucknow.

***Sampling technique***

The sampling technique for the study was "convenient sampling technique".

***Sample size***

Total sample size was 70 (control group-35, experimental group-35).

***Study period***

Data was collected from dated 22nd May, 2024 to 24th June, 2024.

***Inclusion criteria***

In this present study the inclusive criteria were: Children who were admitted in pediatric ward, pediatric reconstructive ward-smile train, and plastic ward at V. P. I. M. S., Lucknow, children who were under the age group of 3-6 years and children of those parents who were interested to be a part of present study.

***Exclusion criteria***

In this present study the exclusive criteria were: Children of those parents who were not interested to be a part of present study, children's health condition did not allow for participation and children who were not present at the time of data collection.

***Development of tools***

The aim of the study was to assess the effectiveness of play therapy on level of anxiety among hospitalized children (3-6 years) admitted in selected wards i.e. pediatric ward, pediatric reconstructive ward-smile train, and plastic ward at V. P. I. M. S., Lucknow. For this study modified preschool anxiety scale was used to assess the effectiveness of play therapy on level of anxiety among hospitalized children (3-6 years).

***Description of tool***

In this study tool consists of two parts-section a: socio-demographic data and section b: modified preschool anxiety scale (parent report).

***Development of modified preschool anxiety scale (Parent report)***

Modified preschool anxiety scale includes 16 anxiety items-separation anxiety, social phobia, physical injury fears, generalized anxiety. Provides overall measure of anxiety aspect among child. Each item is rated on 5-point scale from 0-not at all to 4-very often true.

***Variables***

Separation anxiety-4, social phobia-3, physical injury fears-2 and generalized anxiety 7.

**Table 2: Score interpretation of modified preschool anxiety scale (Parent report).**

| Level of anxiety | Scores |
|---|---|
| **Normal** | 0 |
| **Borderline** | 1-6 |
| **Mild** | 7-13 |
| **Moderate** | 14-20 |
| **Severe** | 21-26 |
| **Very severe** | 27-34 |

***Reliability of tool***

For the present study, inter-rater reliability was used to assess the modified preschool anxiety scale. Four raters from Sardar Patel College of Nursing, Lucknow participated, and the tool demonstrated a high reliability score of 0.8.

***Pilot study***

A pilot study was executed in the paediatric ward of Lok Bandhu Raj Narayan Combined Hospital, Lucknow, involved 10 hospitalized children (aged 3-6 years) to assess the effect of play therapy on anxiety. The experimental group showed a decrease in anxiety levels (mean: 33.2 to 26.4) after a four-day intervention.

In contrast, the control group showed inconsistent anxiety patterns. The study suggests play therapy helps reduce anxiety in hospitalized children.

***Data collection procedure***

A modified preschool anxiety scale was administered to assess the level of anxiety among hospitalized children under the age group of 3-6 years admitted in the selected wards at V. P. I. M. S., Lucknow from both groups through interview methods with their parents. Play therapy was introduced on day 3 for the experimental group and continued for four consecutive days (Days 3-6), with each session lasting two hours. Informed written consent was obtained from each parent of the participants in both groups.

***Ethical approval***

Written permission was obtained from the ethical committee of V. P. I. M. S., Lucknow. Informed consent was taken after explaining the study purpose, and confidentiality and anonymity of the participants were ensured.

***Analysis***

The data were analysed using both descriptive and inferential statistics, i.e. arithmetic mean, standard deviation, chi-square test, Mann-Whitney U test, and Wilcoxon Signed rank test.

## RESULTS

***Section I***

*Description of samples (experimental and control group) according to their socio-demographic variables*

Table 3 shows frequency and percentage of distribution of socio-demographic variables of hospitalized children 3-6 years admitted in selected wards at V. P. I. M. S., Lucknow according to their socio-demographic variables, (n=70).

In the experimental group, most children were aged 5-6 years (45.7%), while in the control group, the majority were 4-5 years old (34.3%). Males were more prevalent in both groups (68.6% in experimental, 77.1% in control). All children in the experimental group belonged to joint families, whereas in the control group, 65.7% were from joint families and 34.3% from nuclear families. Rural backgrounds dominated both groups (80.0% experimental, 65.7% control). Regarding education, 42.9% in the experimental group and 45.7% in the control group had not started schooling. Fathers in the experimental group mainly had secondary education (31.4%), while in the control group, 34.3% had secondary and 28.6% had a bachelor's/diploma. Mothers' education varied, with 28.6% in the experimental group having primary education and 34.3% in the control group having secondary education. In terms of siblings, most children had one sibling in both groups. A greater percentage of children in the experimental group had been hospitalized before (71.4%) compared to the control group (40.0%). Among those hospitalized, longer stays (≥7 days) were more common in both groups (72.0% experimental, 50.0% control).

***Section II***

*Assessment of level of anxiety among hospitalized children in experimental and control group*

Table 4 assessment of anxiety levels among hospitalized children aged 3-6 years in both the experimental and control groups on day 1 and day 6 revealed the following:

On day-1, in the experimental group, out of the total participants, 14.3% had mild anxiety, 45.7% had moderate anxiety, 28.6% had severe anxiety, and 11.4% had very severe anxiety. In the control group, 8.6% had mild anxiety, 40% had moderate anxiety, 20% had severe anxiety, and 31.4% had very severe anxiety. Whereas, on day-6, in the experimental group, out of the total participants, 5.7% under borderline categories. 45.7% had mild anxiety, 40% had moderate anxiety, 5.7% had severe anxiety, and 2.9% had very severe anxiety. In the control group, similarly, 2.9% under borderline categories. 17.1% had mild anxiety, 28.6% had moderate anxiety, 37.1% had severe anxiety, and 14.3% had very severe anxiety.

***Section- III***

*Effectiveness of play therapy on the level of anxiety among hospitalized children between the age group of 3-6 years in experimental group and control group*

Table 5 presents the levels of anxiety among hospitalized children in the control and experimental group on two different days, day 1 and day 6.

In control group, over the six-day period, anxiety levels showed a worsening trend. While there was a slight increase in mild (14.3% to 17.1%) and borderline anxiety (0% to 2.9%), the number of children with severe anxiety rose notably from 28.6% to 37.1%, and very severe anxiety increased from 11.4% to 14.3%. Moderate anxiety declined from 45.7% to 28.6%, indicating that some children shifted to more severe anxiety levels rather than improving. Notably, no child experienced normal anxiety on either day. This suggests that the control group shows a deterioration in anxiety levels, with more children experiencing higher levels of anxiety on day 6 compared to day 1.

In experimental group, over six days, anxiety levels showed significant improvement. Severe anxiety dropped sharply from 20% to 5.7%, and very severe anxiety decreased dramatically from 31.4% to 2.9%. Meanwhile, mild anxiety increased substantially from 8.6% to 45.7%, and borderline anxiety emerged at 5.7%, though it was absent on day 1. Moderate anxiety remained constant at 40%, indicating that some children maintained their anxiety levels while others improved. Notably, no child experienced normal anxiety on either day.

The data suggests a clear shift from higher anxiety levels (severe and very severe) to lower levels (mild and borderline), demonstrating the effectiveness of the interventions. Play therapy, in particular, appears to have played a crucial role in reducing severe anxiety while helping more children transition to milder forms, contributing to overall emotional well-being.

Table 6 demonstrate the effectiveness of play therapy on the level of anxiety among hospitalized children aged 3-6 years in the experimental group, using various paired comparisons of anxiety scores from day 1 through day 6.

The conclusion drawn from the data that the paired comparisons of anxiety scores from day 1 through day 6 show a consistent and significant reduction in anxiety levels over time. The mean anxiety scores decreased progressively each day, with notable reductions on days 3, 4, 5, and 6. The statistical analysis, indicated by Z values and p values, confirms that these reductions are significant and not due to chance.

For instance, the mean anxiety score dropped from 19.31 on day 1 to 13.80 on day 6, showing a mean difference of 5.51 and a percentage mean change of 28.55%. The p values for these comparisons were all less than 0.001, indicating strong statistical significance.

Overall, the data demonstrates that play therapy is an effective intervention for significantly reducing anxiety levels in hospitalized children over a six-day period.

Table 7 indicates paired sample of control group.

The data for the control group reveals that while there were some reductions in anxiety scores over time, these changes were not consistently significant across all pairs. Significant reductions in anxiety were observed from day 1 to days 5 and 6, and from day 2 to days 5 and 6. These significant reductions are supported by low p-values, indicating that the changes are likely real and not due to chance. Overall, while there were some significant reductions, the control group's results suggest that the changes in anxiety levels were less pronounced compared to the experimental group, which received the play therapy.

Hence, the experimental group, which received play therapy, showed consistently significant reductions in anxiety levels, suggesting that play therapy is a highly effective intervention for reducing anxiety in hospitalized children. In contrast, the control group showed some reductions but lacked the consistent as well as the statistically significant improvements seen in the experimental group.

***Testing of hypothesis (H1)***

*H1*

There is a significant difference in the level of anxiety among children who are admitted in selected wards of V. P. I. M. S., Lucknow, before and after administering the play therapy in the experimental group and control group.

The data were analyzed by computing the Mann-Whitney U test for significance. The findings are presented

Table 8 depicts the assessment of level of anxiety among hospitalized children before and after administering the play therapy in experimental and control group.

In the experimental group, mean anxiety levels decreased significantly from 19.31 on day 1 to 13.80 on day 6, with reduced variability (SD: 5.68 to 4.92), indicating the effectiveness of play therapy. In contrast, the control group showed only a slight reduction (21.94 to 19.97), with fluctuating variability (SD: 6.88 to 7.21).

The Z values showed a growing difference between groups, and p values became statistically significant from Day 4 onward ($p=0.022$, 0.001, $<0.001$), confirming the impact of play therapy. Thus, the hypothesis (H1) is accepted, affirming that play therapy effectively reduces anxiety in hospitalized children.

***Section-IV***

*H2*

There is significant association between pre-level anxiety among hospitalized children (both experimental and control groups) with their selected demographic variables.

Table 9 examines the association between the pre-level of anxiety among hospitalized children and various demographic variables in the experimental group. The analyses include: Anxiety levels varied across demographic factors in the experimental group, but only parental education showed a significant association. The father's ($\chi^2$=20.43, p=0.015) and mother's education ($\chi^2$=22.46, p=0.033) were linked to anxiety differences, while factors like age, gender, family type, area of living, education level, siblings, hospitalization history, and duration of hospitalization showed no significant impact.

These results suggest that parental education influences pre-level anxiety in hospitalized children, while other demographic variables do not. Therefore, the H2 is accepted.

Table 10 describes the association between the pre-level of anxiety among hospitalized children in the control group with various demographic variables.

Anxiety levels varied across different demographic factors, but none showed a statistically significant impact. Age ($\chi^2$=11.17, p=0.083), gender ($\chi^2$=4.95, p=0.176), family type ($\chi^2$=0.136, p=0.987), and area of living ($\chi^2$=1.83, p=0.609) did not significantly influence anxiety levels. Similarly, the child's education ($\chi^2$=13.43, p=0.144), the father's education ($\chi^2$=8.34, p=0.758), and the mother's education ($\chi^2$=4.97, p=0.837) were not significantly associated with anxiety. Additionally, the number of siblings ($\chi^2$=9.11, p=0.167), history of hospitalization ($\chi^2$=2.89, p=0.408), and duration of hospitalization ($\chi^2$=9.83, p=0.132) had no meaningful impact. Although some variations were observed, the statistical results suggest that these demographic factors do not strongly influence pre-level anxiety among hospitalized children in this sample.

**Table 3: Demographic profile of the children enrolled in the study.**

| Socio-demographic variables | Categories | Groups | | | |
|---|---|---|---|---|---|
| | | Experimental group, (n=35) | | Control group, (n=35) | |
| | | N | % | N | % |
| **Age of the child (in years)** | 3 to 4 | 9 | 25.70 | 8 | 22.90 |
| | 4 to 5 | 10 | 28.60 | 12 | 34.30 |
| | 5 to 6 | 16 | 45.70 | 15 | 42.90 |
| **Gender** | Male | 24 | 68.60 | 27 | 77.10 |
| | Female | 11 | 31.40 | 8 | 22.90 |
| **Type of family** | Nuclear | 0 | 0.00 | 12 | 34.30 |
| | Joint | 35 | 100. | 23 | 65.70 |
| | Extended | 0 | 0.00 | 0 | 0 |
| | Single parent | 0 | 0.00 | 0 | 0 |
| **Area of living** | Rural | 28 | 80.00 | 23 | 65.70 |
| | Urban | 7 | 20.00 | 12 | 34.30 |
| **Education of the child** | Not yet started | 15 | 42.90 | 16 | 45.70 |
| | Anganwadi | 1 | 2.90 | 0 | 0 |
| | Nursery | 10 | 28.60 | 7 | 20 |
| | Pre-KG | 2 | 5.70 | 3 | 8.60 |
| | LKG | 7 | 20.00 | 9 | 25.70 |
| **Education of the father** | Not studied | 9 | 25.70 | 4 | 11.40 |
| | Primary education | 9 | 25.70 | 7 | 20.00 |
| | Secondary education | 11 | 31.40 | 12 | 34.30 |
| | Bachelor/diploma | 6 | 17.10 | 10 | 28.60 |
| | Master's and above | 0 | 0.00 | 2 | 5.70 |
| **Education of the mother** | Not studied | 8 | 22.90 | 5 | 14.30 |
| | Primary education | 10 | 28.60 | 11 | 31.40 |
| | Secondary education | 8 | 22.90 | 12 | 34.30 |
| | Bachelor/diploma | 8 | 22.90 | 7 | 20 |
| | Master's and above | 1 | 2.90 | 0 | 0.00 |
| **Siblings** | 0 | 14 | 40.00 | 13 | 37.10 |
| | 1 | 15 | 42.90 | 18 | 51.40 |
| | 2 | 4 | 11.40 | 4 | 11.40 |
| | More than 3 | 2 | 5.70 | 0 | 0 |

Continued.

| Socio-demographic variables | Categories | Groups | | | |
|---|---|---|---|---|---|
| | | Experimental group, (n=35) | | Control group, (n=35) | |
| | | N | % | N | % |
| History of previous hospitalization | Yes | 25 | 71.40 | 14 | 40 |
| | No | 10 | 28.60 | 21 | 60 |
| If yes, duration of hospitalization | 1-2 days | 0 | 0.00 | 0 | 0.00 |
| | 3-4 days | 1 | 4.00 | 3 | 21.40 |
| | 5-6 days | 6 | 24.00 | 4 | 28.60 |
| | ≥7 days | 18 | 72.00 | 7 | 50 |

**Table 4: Frequency and percentage distribution of pre-level of anxiety in both groups on day 1 and day, (n=60)**

| Level of anxiety | Experimental group (Day-1) n=35 | | Control group (Day-1) n=35 | | Experimental group (Day-6) n=35 | | Control group (Day-6) n=35 | |
|---|---|---|---|---|---|---|---|---|
| | N | % | N | % | N | % | N | % |
| Normal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Borderline | 0 | 0 | 0 | 0 | 2 | 5.7 | 1 | 2.9 |
| Mild | 5 | 14.3 | 3 | 8.6 | 16 | 45.7 | 6 | 17.1 |
| Moderate | 16 | 45.7 | 14 | 40 | 14 | 40 | 10 | 28.6 |
| Severe | 10 | 28.6 | 7 | 20 | 2 | 5.7 | 13 | 37.1 |
| Very severe | 4 | 11.4 | 11 | 31.4 | 1 | 2.9 | 5 | 14.3 |
| Total | 35 | 100 | 35 | 100 | 35 | 100 | 35 | 100 |

**Table 5: Comparison of pre and post-level anxiety in the both groups, (n=70).**

| Level of anxiety | Control group, (n=35) | | | | Experimental group, (n=35) | | | |
|---|---|---|---|---|---|---|---|---|
| | Day 1 | | Day 6 | | Day 1 | | Day 6 | |
| | N | % | N | % | N | % | N | % |
| Normal | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Borderline | 0 | 0 | 1 | 2.90 | 0 | 0 | 2 | 5.70 |
| Mild | 5 | 14.30 | 6 | 17.10 | 3 | 8.60 | 16 | 45.70 |
| Moderate | 16 | 45.70 | 10 | 28.60 | 14 | 40 | 14 | 40 |
| Severe | 10 | 28.60 | 13 | 37.10 | 7 | 20 | 2 | 5.70 |
| Very severe | 4 | 11.40 | 5 | 14.30 | 11 | 31.40 | 1 | 2.90 |
| Total | 35 | 100 | 35 | 100 | 35 | 100 | 35 | 100 |

**Table 6: Effectiveness of play therapy on the level of anxiety among hospitalized children aged 3-6 years in the experimental group, using various paired comparisons of anxiety scores from day 1 through day 6, (n=35).**

| Paired samples statistics | | Mean | N | SD | Mean difference | % Mean change | Z value | P |
|---|---|---|---|---|---|---|---|---|
| Pair 1 | Day 1 | 19.31 | 35 | 5.68 | 0.06 | 0.3 | -1.414 | 0.157 |
| | Day 2 | 19.26 | 35 | 5.65 | | | | |
| Pair 2 | Day 1 | 19.31 | 35 | 5.68 | 0.46 | 2.37 | -3.418 | 0.001 |
| | Day 3 | 18.86 | 35 | 5.6 | | | | |
| Pair 3 | Day 1 | 19.31 | 35 | 5.68 | 1.94 | 10.06 | -4.494 | <0.001 |
| | Day 4 | 17.37 | 35 | 5.5 | | | | |
| Pair 4 | Day 1 | 19.31 | 35 | 5.68 | 4.11 | 21.3 | -5.101 | <0.001 |
| | Day 5 | 15.2 | 35 | 5.28 | | | | |
| Pair 5 | Day 1 | 19.31 | 35 | 5.68 | 5.51 | 28.55 | -5.174 | <0.001 |
| | Day 6 | 13.8 | 35 | 4.92 | | | | |
| Pair 6 | Day 2 | 19.26 | 35 | 5.65 | 0.4 | 2.08 | -3.276 | 0.001 |
| | Day 3 | 18.86 | 35 | 5.6 | | | | |
| Pair 7 | Day 2 | 19.26 | 35 | 5.65 | 1.89 | 9.79 | -4.495 | <0.001 |
| | Day 4 | 17.37 | 35 | 5.5 | | | | |
| Pair 8 | Day 2 | 19.26 | 35 | 5.65 | 4.06 | 21.07 | -5.101 | <0.001 |
| | Day 5 | 15.2 | 35 | 5.28 | | | | |
| Pair 9 | Day 2 | 19.26 | 35 | 5.65 | 5.46 | 28.34 | -5.178 | <0.001 |
| | Day 6 | 13.8 | 35 | 4.92 | | | | |

Continued.

| Paired samples statistics | | Mean | N | SD | Mean difference | % mean change | Z value | P |
|---|---|---|---|---|---|---|---|---|
| **Pair 10** | Day 3 | 18.86 | 35 | 5.6 | 1.49 | 7.88 | -4.145 | <0.001 |
| | Day 4 | 17.37 | 35 | 5.5 | | | | |
| **Pair 11** | Day 3 | 18.86 | 35 | 5.6 | 3.66 | 19.39 | -5.033 | <0.001 |
| | Day 5 | 15.2 | 35 | 5.28 | | | | |
| **Pair 12** | Day 3 | 18.86 | 35 | 5.6 | 5.06 | 26.82 | -5.17 | <0.001 |
| | Day 6 | 13.8 | 35 | 4.92 | | | | |
| **Pair 13** | Day 4 | 17.37 | 35 | 5.5 | 2.17 | 12.5 | -4.752 | <0.001 |
| | Day 5 | 15.2 | 35 | 5.28 | | | | |
| **Pair 14** | Day 4 | 17.37 | 35 | 5.5 | 3.57 | 20.56 | -5.102 | <0.001 |
| | Day 6 | 13.8 | 35 | 4.92 | | | | |
| **Pair 15** | Day 5 | 15.2 | 35 | 5.28 | 1.4 | 9.21 | -4.336 | <0.001 |
| | Day 6 | 13.8 | 35 | 4.92 | | | | |

**Table 7: Effectiveness of play therapy on the level of anxiety among hospitalized children aged 3-6 years in the control group, using various paired comparisons of anxiety scores from day 1 through day 6, n=35.**

| Paired samples statistics | | Mean | N | SD | Mean difference | % mean change | Z value | P |
|---|---|---|---|---|---|---|---|---|
| **Pair 1** | Day 1 | 21.94 | 35 | 6.88 | 0 | 0 | -1.134 | 0.257 |
| | Day 2 | 21.94 | 35 | 6.92 | | | | |
| **Pair 2** | Day 1 | 21.94 | 35 | 6.88 | 0.2 | 0.91 | -0.954 | 0.34 |
| | Day 3 | 21.74 | 35 | 6.94 | | | | |
| **Pair 3** | Day 1 | 21.94 | 35 | 6.88 | 0.54 | 2.47 | -1.305 | 0.192 |
| | Day 4 | 21.4 | 35 | 7.34 | | | | |
| **Pair 4** | Day 1 | 21.94 | 35 | 6.88 | 0.94 | 4.3 | -2.324 | 0.02 |
| | Day 5 | 21 | 35 | 7.36 | | | | |
| **Pair 5** | Day 1 | 21.94 | 35 | 6.88 | 1.97 | 8.98 | -3.906 | <0.001 |
| | Day 6 | 19.97 | 35 | 7.21 | | | | |
| **Pair 6** | Day 2 | 21.94 | 35 | 6.92 | 0.2 | 0.91 | -2.07 | 0.038 |
| | Day 3 | 21.74 | 35 | 6.94 | | | | |
| **Pair 7** | Day 2 | 21.94 | 35 | 6.92 | 0.54 | 2.47 | -1.661 | 0.097 |
| | Day 4 | 21.4 | 35 | 7.34 | | | | |
| **Pair 8** | Day 2 | 21.94 | 35 | 6.92 | 0.94 | 4.3 | -2.615 | 0.009 |
| | Day 5 | 21 | 35 | 7.36 | | | | |
| **Pair 9** | Day 2 | 21.94 | 35 | 6.92 | 1.97 | 8.98 | -4.014 | <0.001 |
| | Day 6 | 19.97 | 35 | 7.21 | | | | |
| **Pair 10** | Day 3 | 21.74 | 35 | 6.94 | 0.34 | 1.58 | -1.046 | 0.295 |
| | Day 4 | 21.4 | 35 | 7.34 | | | | |
| **Pair 11** | Day 3 | 21.74 | 35 | 6.94 | 0.74 | 3.42 | -2.172 | 0.03 |
| | Day 5 | 21 | 35 | 7.36 | | | | |
| **Pair 12** | Day 3 | 21.74 | 35 | 6.94 | 1.77 | 8.15 | -3.816 | <0.001 |
| | Day 6 | 19.97 | 35 | 7.21 | | | | |
| **Pair 13** | Day 4 | 21.4 | 35 | 7.34 | 0.4 | 1.87 | -2.658 | 0.008 |
| | Day 5 | 21 | 35 | 7.36 | | | | |
| **Pair 14** | Day 4 | 21.4 | 35 | 7.34 | 1.43 | 6.68 | -4.118 | <0.001 |
| | Day 6 | 19.97 | 35 | 7.21 | | | | |
| **Pair 15** | Day 5 | 21 | 35 | 7.36 | 1.03 | 4.9 | -3.485 | <0.001 |
| | Day 6 | 19.97 | 35 | 7.21 | | | | |

**Table 8: Assessment of level of anxiety among hospitalized children before and after administering the play therapy in experimental and control group, (n=70).**

| Day 1 to day 6 anxiety level | Groups | | | | Z value | P value |
|---|---|---|---|---|---|---|
| | Experimental group (35) | | Control group (35) | | | |
| | Mean | SD | Mean | SD | | |
| **Day 1** | 19.31 | 5.68 | 21.94 | 6.88 | -1.373 | 0.17 |
| **Day 2** | 19.26 | 5.65 | 21.94 | 6.92 | -1.426 | 0.154 |
| **Day 3** | 18.86 | 5.6 | 21.74 | 6.94 | -1.543 | 0.123 |

Continued.

| Day 1 to day 6 anxiety level | Groups | | | | Z value | P value |
|---|---|---|---|---|---|---|
| | Experimental group (35) | | Control group (35) | | | |
| | Mean | SD | Mean | SD | | |
| **Day 4** | 17.37 | 5.5 | 21.4 | 7.34 | -2.294 | 0.022 |
| **Day 5** | 15.2 | 5.28 | 21 | 7.36 | -3.441 | 0.001 |
| **Day 6** | 13.8 | 4.92 | 19.97 | 7.21 | -3.613 | <0.001 |

**Table 9: Association between pre-level of anxiety among hospitalized children with their selected demographic variables for experimental group, n=35.**

| Level of anxiety on day 1 for experimental group | | Mild | | Moderate | | Severe | | Very severe | | $\chi^2$ value (df) | P value |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N | % | N | % | N | % | N | % | | |
| **Age of the child (in years)** | 3 to 4 | 0 | 0 | 3 | 18.80 | 3 | 30 | 3 | 75 | 12.47 (6) | 0.052 |
| | 4 to 5 | 0 | 0 | 6 | 37.50 | 3 | 30 | 1 | 25 | | |
| | 5 to 6 | 5 | 100 | 7 | 43.80 | 4 | 40 | 0 | 0 | | |
| **Gender** | Male | 4 | 80 | 12 | 75 | 6 | 60 | 2 | 50 | 1.59 (3) | 0.661 |
| | Female | 1 | 20 | 4 | 25 | 4 | 40 | 2 | 50 | | |
| **Type of family** | Nuclear | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | NA | NA |
| | Joint | 5 | 100 | 16 | 100 | 10 | 100 | 4 | 100 | | |
| | Extended | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | Single parent | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| **Area of living** | Rural | 5 | 100 | 13 | 81.20 | 8 | 80 | 2 | 50 | 3.52 (3) | 0.319 |
| | Urban | 0 | 0 | 3 | 18.80 | 2 | 20 | 2 | 50 | | |
| **Education of child** | Not yet started | 1 | 20 | 7 | 43.80 | 4 | 40 | 3 | 75 | 8.32 (12) | 0.76 |
| | Anganwadi | 0 | 0 | 1 | 6.20 | 0 | 0 | 0 | 0 | | |
| | Nursery | 1 | 20 | 5 | 31.20 | 3 | 30 | 1 | 25 | | |
| | Pre-KG | 1 | 20 | 1 | 6.20 | 0 | 0 | 0 | 0 | | |
| | LKG | 2 | 40 | 2 | 12.50 | 3 | 30 | 0 | 0 | | |
| **Education of father** | Not studied | 3 | 60 | 3 | 18.80 | 3 | 30 | 0 | 0 | 20.43 (9) | 0.015 |
| | Primary education | 1 | 20 | 7 | 43.80 | 1 | 10 | 0 | 0 | | |
| | Secondary education | 0 | 0 | 6 | 37.50 | 4 | 40 | 1 | 25 | | |
| | Bachelor/diploma | 1 | 20 | 0 | 0 | 2 | 20 | 3 | 75 | | |
| | Masters and above | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| **Education of mother** | Not studied | 4 | 80 | 2 | 12.50 | 2 | 20 | 0 | 0 | 22.46 (12) | 0.033 |
| | Primary education | 0 | 0 | 7 | 43.80 | 3 | 30 | 0 | 0 | | |
| | Secondary education | 0 | 0 | 5 | 31.20 | 2 | 20 | 1 | 25 | | |
| | Bachelor/diploma | 1 | 20 | 2 | 12.50 | 2 | 20 | 3 | 75 | | |
| | Master's and above | 0 | 0 | 0 | 0 | 1 | 10 | 0 | 0 | | |
| **Siblings** | 0 | 1 | 20 | 5 | 31.20 | 6 | 60 | 2 | 50 | 9.34 (9) | 0.407 |
| | 1 | 2 | 40 | 8 | 50 | 3 | 30 | 2 | 50 | | |
| | 2 | 2 | 40 | 1 | 6.20 | 1 | 10 | 0 | 0 | | |
| | >3 | 0 | 0 | 2 | 12.50 | 0 | 0 | 0 | 0 | | |
| **History of previous hospitalization** | Yes | 4 | 80 | 10 | 62.50 | 8 | 80 | 3 | 75 | 1.19 (3) | 0.755 |
| | No | 1 | 20 | 6 | 37.50 | 2 | 20 | 1 | 25 | | |
| **If yes, duration of hospitalization (days)** | 1-2 | 0 | 0 | 0 | 0 | 0 | 0.00 | 0 | 0 | 2.51 (6) | 0.867 |
| | 3-4 | 0 | 0 | 0 | 0 | 1 | 12.50 | 0 | 0 | | |
| | 5-6 | 1 | 25 | 2 | 20 | 2 | 25.00 | 1 | 33.30 | | |
| | ≥7 | 3 | 75 | 8 | 80 | 5 | 62.50 | 2 | 66.70 | | |

**Table 10: Association between pre-level of anxiety among hospitalized children with their selected demographic variables for control group, (n=35).**

| Level of anxiety on day 1 for control group | | Mild | | Moderate | | Severe | | Very severe | | $C^2$ value (df) | P value |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N | % | N | % | N | % | N | % | | |
| **Age of the child (in years)** | 3 to 4 | 0 | 0 | 2 | 14.30 | 2 | 28.60 | 2 | 22.20 | 11.17 (6) | 0.083 |
| | 4 to 5 | 1 | 33.30 | 2 | 14.30 | 4 | 57.10 | 5 | 55.60 | | |
| | 5 to 6 | 2 | 66.70 | 10 | 71.40 | 1 | 14.30 | 2 | 22.20 | | |
| **Gender** | Male | 3 | 100 | 12 | 85.70 | 6 | 85.70 | 5 | 55.60 | 4.95 (3) | 0.176 |
| | Female | 0 | 0 | 2 | 14.30 | 1 | 14.30 | 4 | 44.40 | | |
| **Type of family** | Nuclear | 1 | 33.30 | 5 | 35.70 | 2 | 28.60 | 4 | 44.40 | 0.136 (3) | 0.987 |
| | Joint | 2 | 66.70 | 9 | 64.30 | 5 | 71.40 | 5 | 55.60 | | |
| | Extended | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | Single parent | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| **Area of living** | Rural | 3 | 100 | 9 | 64.30 | 4 | 57.10 | 5 | 55.60 | 1.83 (3) | 0.609 |
| | Urban | 0 | 0 | 5 | 35.70 | 3 | 42.90 | 4 | 44.40 | | |
| **Education of child** | Not yet started | 0 | 0 | 4 | 28.60 | 6 | 85.70 | 4 | 44.40 | 13.43 (9) | 0.144 |
| | Anganwadi | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | Nursery | 1 | 33.30 | 3 | 21.40 | 0 | 0 | 3 | 33.30 | | |
| | Pre-KG | 0 | 0 | 2 | 14.30 | 1 | 14.30 | 0 | 0 | | |
| | LKG | 2 | 66.70 | 5 | 35.70 | 0 | 0 | 2 | 22.20 | | |
| **Education of father** | Not studied | 1 | 33.30 | 2 | 14.30 | 1 | 14.30 | 0 | 0 | 8.34 (12) | 0.758 |
| | Primary education | 0 | 0 | 3 | 21.40 | 3 | 42.90 | 1 | 11.10 | | |
| | Secondary education | 1 | 33.30 | 5 | 35.70 | 1 | 14.30 | 3 | 33.30 | | |
| | Bachelor/ diploma | 1 | 33.30 | 3 | 21.40 | 2 | 28.60 | 4 | 44.40 | | |
| | Master's and above | 0 | 0 | 1 | 7.10 | 0 | 0 | 1 | 11.10 | | |
| **Education of mother** | Not studied | 1 | 33.30 | 2 | 14.30 | 1 | 14.30 | 1 | 11.10 | 4.97 (9) | 0.837 |
| | Primary education | 0 | 0 | 4 | 28.60 | 3 | 42.90 | 2 | 22.20 | | |
| | Secondary education | 2 | 66.70 | 5 | 35.70 | 1 | 14.30 | 4 | 44.40 | | |
| | Bachelor/ diploma | 0 | 0 | 3 | 21.40 | 2 | 28.60 | 2 | 22.20 | | |
| | Master's and above | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| **Siblings** | 0 | 0 | 0 | 3 | 21.40 | 3 | 42.90 | 5 | 55.60 | 9.11 (6) | 0.167 |
| | 1 | 3 | 100 | 8 | 57.10 | 3 | 42.90 | 4 | 44.40 | | |
| | 2 | 0 | 0 | 3 | 21.40 | 1 | 14.30 | 0 | 0 | | |
| | >3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| **History of previous hospitalization** | Yes | 1 | 33.30 | 8 | 57.10 | 2 | 28.60 | 3 | 33.30 | 2.89 (3) | 0.408 |
| | No | 2 | 66.70 | 6 | 42.90 | 5 | 71.40 | 6 | 66.70 | | |
| **If yes, duration of hospitalization (in years)** | 1-2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 9.83 (6) | 0.132 |
| | 3-4 | 1 | 100 | 1 | 12.50 | 1 | 50 | 0 | 0 | | |
| | 5-6 | 0 | 0 | 4 | 50 | 0 | 0 | 0 | 0 | | |
| | ≥7 | 0 | 0 | 3 | 37.50 | 1 | 50 | 3 | 100 | | |

## DISCUSSION

The present study aimed to assess the level of anxiety among hospitalized children (3-6 years) admitted in selected wards at V. P. I. M. S., Lucknow. Hospitalization disrupts children's routines and can lead to feelings of anxiety, fear, or, pain. Play is a crucial aspect of children's lives.[15] Therefore, it is essential to

provide comprehensive care during hospitalization, including play therapy.[8,9,12] Paediatric nurses can employ play as a therapeutic strategy for hospitalized children. Nurses must understand and incorporate play into children's care, as it offers numerous benefits during hospitalization. The cathartic function of play, which helps relieve anxiety and forms the foundation of play therapy, is particularly noteworthy.[10,11,13,14] The study involves a Quasi-experimental time series non-equivalent control group design, 70 samples were selected by using convenient sampling technique. Data was collected using the modified preschool anxiety scale, administered to the participants from both groups through interview methods with their parents. Play therapy (building blocks, puzzle, doctor set, kitchen set, and drawing materials) was introduced on day 3 for the experimental group and continued for four consecutive days (Days 3-6), with each session lasting two hours. The validity of the tool was established by 10 experts from the department of paediatrics at V. P. I. M. S., Lucknow [neonatologist and pediatrician (2) and pediatric neurologist] and from various nursing fields. The tool was considered the best way to assess the level of anxiety among hospitalized children. The analysis of data involves the use of statistical tools and techniques on the basis of objectives of the study. Descriptive statistics such as frequency, percentage, mean and standard deviation was used to summarize and describe the data. In inferential statistics, chi-square, non-parametric tests were used i.e. Wilcoxon signed rank test and Mann-Whitney U test.

The obtained data and findings have been organized and presented under the following sections:

***Section I***

Description of sample (experimental and control group) according to their socio-demographic variables.

Socio-demographic variables containing hospitalized children 3-6 years. Characteristics were analyzed by using frequency and percentage.

***Section II***

Assessment of the level of anxiety among hospitalized children between the age group of 3-6 years in both experimental and control group.

Frequency and percentage distribution of level of anxiety in both experimental and control group before play therapy. Frequency and percentage distribution of level of anxiety in both experimental and control group after play therapy.

***Section III***

Effectiveness of play therapy on level of anxiety among hospitalized children between age group of 3-6 years in experimental and control group.

Comparison of pre and post level of anxiety in both groups. Wilcoxon signed rank test for evaluate the effectiveness of play therapy to reduce the level of anxiety among hospitalized children in both group (experimental and control group), testing oh hypothesis (H1).

***Section IV***

Findings related to association between pre level of anxiety among hospitalized children (both experimental and control group) with their selected demographic variables.

***Limitations***

The study's generalizability is limited to the specific context of V. P. I. M. S., Lucknow. The findings may not fully capture regional variations in level of anxiety. The study's duration and scope may limit the depth of insights into long-term level of anxiety among hospitalized children. External factors such as socio-economic changes during the study may influence participants' responses.

## CONCLUSION

The following conclusions were drawn based on the findings of the study-The findings of this study demonstrate that play therapy is an effective intervention for reducing anxiety levels among hospitalized children. In the experimental group, the mean anxiety score significantly decreased from 19.31 on day 1 to 13.80 on day 6, with the standard deviation also decreasing from 5.68 to 4.92, indicating more consistent anxiety reduction. In contrast, the control group, which did not receive play therapy, showed only a slight decrease in anxiety levels, with the mean score reducing from 21.94 on day 1 to 19.97 on day 6. The standard deviation in the control group fluctuated from 6.88 on day 1, peaking at 7.36 on day 5, and slightly decreasing to 7.21 on day 6, suggesting greater variability in anxiety levels.

The Z values and p values further support these findings. The Z value increased from -1.373 on day 1 to -3.613 on day 6, indicating a growing difference between the experimental and control groups over time. The p values on days 1, 2, and 3 (0.170, 0.154, and 0.123, respectively) were not statistically significant, meaning no significant difference between the two groups at the start. However, from day 4 onward, the p values became statistically significant (0.022, 0.001, and <0.001 on days 4, 5, and 6, respectively), confirming that play therapy had a significant impact in reducing anxiety.

The study confirms that play therapy is highly effective in reducing anxiety among hospitalized children, as indicated by the significant decrease in anxiety levels in the experimental group. The statistical analysis supports the acceptance of H1 (play therapy reduces anxiety).

Additionally, demographic factors mostly did not impact anxiety levels, except for parental education, which showed a significant association, supporting the acceptance of H2 (parental education influences pre-level anxiety).

These findings emphasize the importance of incorporating play therapy in pediatric care settings to improve the emotional well-being of hospitalized children.

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## REFERENCES

1. Koukourikos K, Areti T, Laila T, Christos I, Aikaterini F, Aristi K, et al. An Overview of Play Therapy". J Academy Med Sci Bosnia Herzegovina. 2021;33(4):293-7.
2. Isabella C, Claudio M, Karen S. Play Therapy and Expressive Arts in a Complex and Dynamic World. 2023.
3. Zosh JM, Hassinger-Das B, Laurie M. Learning Through Play and the Development of Holistic Outcomes. The LEGO Foundation. 2022.
4. Imelda C, Joy C. Children's and young people's views of hospitalization: 'It's a scary place'. J Children Young People Nursing. 2007;1(1):1-6.
5. Trans PJ. In: Gattegno C, Hodgson FM, editors. Play, Dreams and Imitation in Childhood. New York: Norton. 1962.
6. Rezayi S, Mohammad BH. Effectiveness of play therapy based on social cognition in children with internalized behavioral disorders. Iranian Rehabilitation J. 2022;20(3):369-78.
7. Elbeltagi R, Al-Beltagi M, Saeed NK, Alhawamdeh R. Play therapy in children with autism: Its role, implications, and limitations. World J Clin Pediatr. 2023;12(1):1-22.
8. Zdun-Ryżewska A, Nadrowska N. Parent's Stress Predictors during a Child's Hospitalization. Int J Environ Res Public Health. 2021;18(22):12019.
9. Malathia A. Effectiveness of therapeutic play on the level of anxiety among hospitalized children between 3-6 years. Int J Pediat Nursing. 2011;3(1):1-7.
10. Marfuah D, Sofiah DD. Coloring pictures as play therapy to reduces impact of hospitalization among children in hospital. The 4th International Virtual Conference on Nursing. 2021.
11. Rubin LC. Handbook of Medical Play Therapy and Child Life. Interventions in Clinical and Medical Settings. 2017.
12. Lundberg AM. Practitioner' perceptions of the effectiveness of play therapy and their utilization of play therapy methods. 2004. Available at: https://etd.ohiolinkk.edu/apexprod/rws_etd/send_file/send?accession=miami1086307103&disposition. Accessed on 12 September 2025.
13. Eriksson S. Children in play therapy: what significance does this have for their parent's perceived health? Available at: https://www.diva-portal.org/smaash/diva2:726145/FULLTEXT01.pdf. Accessed on 12 September 2025.
14. Chirico I, Andrei F, Paola S, Irene M, Elena T. The focal play therapy: A clinical approach to promote child health and family well-being. Front. Public Health. 2019;7:77.
15. Soniya AMS, Solomon RJ, Shini. Effectiveness of play therapy on anxiety among hospitalized preschool children. Asian J Nursing Educat Res. 2019;9(2):193-6.

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