



“A COMPARATIVE STUDY TO EVALUATE THE EFFECTIVENESS OF CLAY THERAPY VERSUS PUZZLE THERAPY IN REDUCING ANXIETY AMONG PRESCHOOLER CHILDREN IN SELECTED HOSPITAL.”

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ABSTRACT: Introduction: Hospitalization causes significant anxiety in preschool children due to separation, unfamiliar environments, and medical procedures. Therapeutic play is a non-pharmacological intervention that helps children cope, with clay therapy offering sensory expression and puzzle therapy providing cognitive distraction. **Objectives:** 1.To assess the level of anxiety among preschooler children in selected hospital at baseline. 2.To evaluate the effectiveness of clay therapy on level of anxiety among preschooler children in selected hospital. 3.To evaluate the effectiveness of puzzle therapy on level of anxiety among preschooler children in selected hospital. 4.To compare the effectiveness of Clay therapy versus Puzzle therapy in reducing anxiety among preschooler children in selected hospital. 5.To find association of study finding with selected demographic variables. **Methodology:** A quantitative Two Parallel arm intervention study design was conducted among 50 hospitalized preschool children (3–6 years) selected through convenience sampling. Participants received clay or puzzle therapy for three consecutive days. Anxiety was measured using the Hamilton Anxiety Rating Scale before and after intervention. **Results:** Both therapies significantly reduced anxiety, with greater reduction in the clay therapy group. Significant associations were found with demographic variables. **Conclusion:** Clay therapy is comparatively more effective, and therapeutic play should be integrated into pediatric nursing care. **Recommendations:** Further studies with larger samples and randomized designs are recommended.

Keywords: Preschool children, hospitalization anxiety, therapeutic play, clay therapy, puzzle therapy, pediatric nursing. **Introduction**

Hospitalization is often a challenging experience for preschool children. Separation from parents, unfamiliar environments, disruption of normal routines and exposure to painful or unfamiliar procedures can contribute to fear, distress and anxiety. Anxiety may subsequently interfere with children's cooperation, communication, sleep and adaptation to hospital care.^{1,2}

Preschool children have limited cognitive and verbal abilities to understand hospitalization and may express anxiety through crying, irritability, withdrawal, resistance, clinging to parents, restlessness and lack of cooperation. Therapeutic play is therefore an important child-centred nursing intervention that can provide distraction, emotional expression, sensory stimulation and a sense of control.^{1,2}

Clay therapy is a sensory-expressive form of therapeutic play in which children manipulate modelling clay to create shapes or objects. The tactile nature of clay may provide sensory stimulation while allowing children to express emotions non-verbally. Puzzle therapy, in contrast, involves structured cognitive play requiring concentration,

matching, problem-solving and sustained attention. It may divert children's attention from stressful hospital experiences and promote temporary relaxation.^{3,4}

Previous research has examined play therapy, clay-based activities and puzzle-based interventions separately. However, direct comparisons between clay therapy and puzzle therapy for anxiety reduction among hospitalized preschool children remain limited, particularly in the Indian pediatric nursing context. The present study was therefore undertaken to compare these two practical, inexpensive and child-friendly interventions.^{4,5}

The study was based conceptually on therapeutic play as a nursing intervention for reducing hospitalization-related anxiety and was structured as a comparison of two active intervention groups.

I. PROBLEM STATEMENT:

“A comparative study to evaluate the effectiveness of clay therapy versus puzzle therapy in reducing anxiety among preschooler children in selected hospital.”

II. OBJECTIVES

1. To assess the level of anxiety among hospitalized preschool children at baseline.
2. To evaluate the effectiveness of clay therapy in reducing anxiety.
3. To evaluate the effectiveness of puzzle therapy in reducing anxiety.
4. To compare the effectiveness of clay therapy and puzzle therapy in reducing anxiety.
5. To determine the association between baseline anxiety and selected demographic variables.

III. MATERIAL AND METHODS

4.1 Study Setting and Design : A quantitative, two-parallel-arm intervention design was adopted to compare clay therapy and puzzle therapy for reducing anxiety among hospitalized preschool children. The study was conducted in a selected hospital in maharashtra, india.,The study population comprised hospitalized preschool children aged 3–6 years. Sample Size:A total of 50 preschool children were included in the main study, with 25 children in the clay therapy group and 25 children in the puzzle therapy group. Sampling Technique: Participants were selected using a non-probability convenience sampling technique. The dissertation reports that 50 preschool children were included in the study.

4.2 Inclusion criteria :

Children in the age group of 3 to 6 years.
Preschooler children after admission within two days.

4.3 Eexclusion criteria:

Children who are blind and handicap children.
Children those who are admitted for only observation.
Children who critically ill and unconscious.

4.4 Variables of the study:

Independent variable : Clay therapy and Puzzle therapy.

Dependent variable : Anxiety in preschooler children in selected hospital.

4.5 Data Collection Tool

Section A-Demographic profile: Age, Gender,Educational status of children, Family income, Type of family, History of previous hospitalization, Have child played with clay or puzzle previously.

Section B-Hamilton anxiety Rating scale (HAM)

Interpretation: (Total score: 0-56) ,0-4 : No anxiety, < 17 : Mild anxiety , 18-24 : Mild to moderate anxiety, 25-30: moderate to severe anxiety, More than 30 : very severe anxiety.

Section C: Standard operating procedure of intervention Clay therapy versus puzzle therapy used for experimental group.

4.6 Validity and Reliability of Tool

Content and construct Validity- The tool was determined by 20 child health nursing experts. Valuable suggestion was given by experts. Necessary correction was made before data collection. So, Tool is valid for study.

Reliability :By using Parallel form method of reliability, it is found to be 0.8919 for clay therapy and 0.9287 for puzzle therapy and hence tool is reliable and valid.

4.7 Hypothesis

Null hypothesis (H0) : There is no significant difference in the effectiveness of Clay Therapy and Puzzle Therapy in reducing anxiety levels among preschooler children in selected hospital.

Research Hypothesis (H1): There is a significant difference in the effectiveness of Clay Therapy and Puzzle Therapy in reducing anxiety levels among preschooler children in selected hospital.

4.8 Statistical analysis:

The collected data were analyzed using descriptive and inferential statistics based on the objectives and hypotheses. A master data sheet was prepared by the investigator, including demographic variables such as age, gender, educational status, family income, type of family, previous hospitalization, and previous experience with clay or puzzle play. Pre-test and post-test scores were analyzed using the paired *t*-test to assess the effectiveness of clay and puzzle therapy. The association between demographic variables and anxiety scores was assessed using the Chi-square test and unpaired *t*-test.

V- RESULTS:

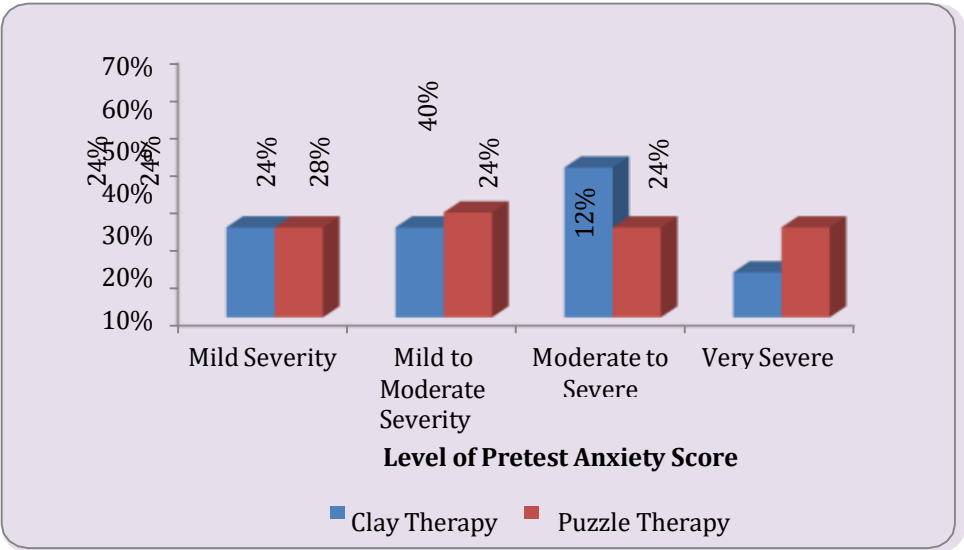
Table 1: Demographic characteristics of participants

Variable	Clay therapy n (%)	Puzzle therapy n (%)
Age		
3–4 years	6 (24)	9 (36)
4.1–5 years	11 (44)	7 (28)
5.1–6 years	8 (32)	9 (36)
Gender		
Male	9 (36)	15 (60)
Female	16 (64)	10 (40)
Educational status		
Play group	5 (20)	9 (36)
Nursery	3 (12)	3 (12)
LKG	9 (36)	7 (28)
UKG and above	8 (32)	6 (24)
Previous hospitalization		
Yes	11 (44)	15 (60)
No	14 (56)	10 (40)
Previous clay/puzzle experience		
Yes	12 (48)	8 (32)
No	13 (52)	17 (68)

Baseline Anxiety

Table 2. Baseline anxiety levels

Anxiety category	Clay therapy n (%)	Puzzle therapy n (%)
Mild	6 (24)	6 (24)
Mild to moderate	6 (24)	7 (28)
Moderate to severe	10 (40)	6 (24)
Very severe	3 (12)	6 (24)
Mean ± SD	23.04 ± 4.97	23.72 ± 8.10
Minimum–maximum	9–34	10–38

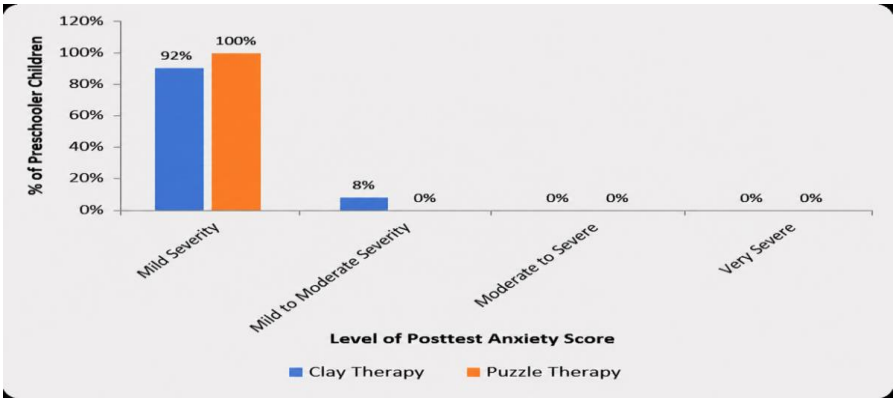


At baseline, moderate-to-severe anxiety was observed in 40% of children in the clay group and 24% in the puzzle group. Very severe anxiety was observed in 12% and 24%, respectively. The reported baseline means were 23.04±4.97 and 23.72±8.10.

Post-Intervention Anxiety

Table 3. Post-intervention anxiety levels

Anxiety category	Clay therapy n (%)	Puzzle therapy n (%)
Mild	23 (92)	25 (100)
Mild to moderate	2 (8)	0
Moderate to severe	0	0
Very severe	0	0
Mean ± SD	7.52 ± 3.60	9.88 ± 4.68
Minimum–maximum	1–14	1–19

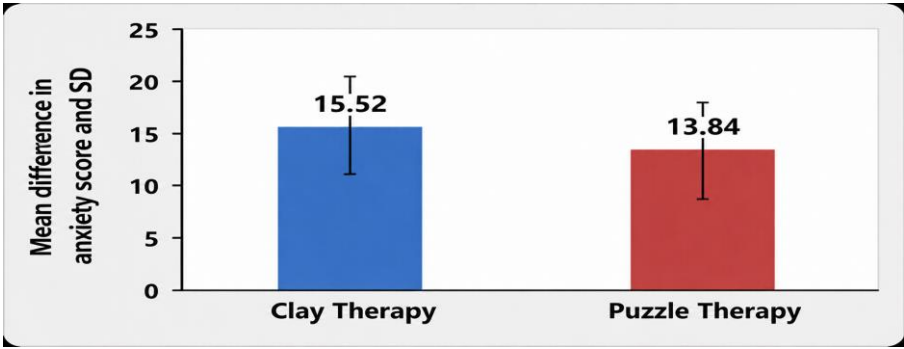


Following intervention, all children in both groups were within the mild or mild-to-moderate categories. Ninety-two percent of children in the clay group had mild anxiety and 8% had mild-to-moderate anxiety. All children in the puzzle group had mild anxiety.

Change in Anxiety Scores

Table 4. Comparison of pre-test and post-test anxiety

Group	Pre-test mean ± SD	Post-test mean ± SD	Mean reduction
Clay therapy	23.04 ± 4.97	7.52 ± 3.60	15.52
Puzzle therapy	23.72 ± 8.10	9.88 ± 4.68	13.84



The corrected descriptive findings therefore indicate a greater absolute reduction in anxiety in the clay therapy group (15.52 points) than in the puzzle therapy group (13.84 points), a difference of 1.68 points.

Table 5. Association between baseline anxiety and selected demographic variables

Demographic variable	Clay therapy χ^2	p	Interpretation	Puzzle therapy χ^2	p	Interpretation
Age	15.85	0.015	Significant	22.46	0.001	Significant
Gender	2.28	0.51	Not significant	2.57	0.46	Not significant
Educational status	19.38	0.022	Significant	23.53	0.0001	Significant
Monthly family income	10.91	0.28	Not significant	8.55	0.47	Not significant
Type of family	7.09	0.62	Not significant	11.66	0.23	Not significant
Previous hospitalization	7.84	0.041	Significant	0.99	0.80	Not significant
Previous clay/puzzle experience	3.23	0.35	Not significant	1.91	0.59	Not significant

These values are reported in the dissertation's demographic association summary.

DISCUSSION

The present study evaluated two structured play-based interventions for anxiety among hospitalized preschool children. The findings demonstrate substantial reductions in anxiety following both clay therapy and puzzle therapy.

At baseline, the two groups had broadly comparable mean anxiety scores, although the puzzle group demonstrated greater variability. The mean baseline anxiety score was 23.04±4.97 in the clay group and 23.72±8.10 in the puzzle group. After intervention, the corresponding mean scores decreased to 7.52±3.60 and 9.88±4.68.^{1,2} Using the consistently labelled group means, the reduction was 15.52 points in the clay therapy group compared with 13.84 points in the puzzle therapy group. This indicates a numerically greater reduction with clay therapy.

The findings are consistent with the broader rationale for therapeutic play in pediatric settings. Play can provide children with distraction, emotional expression, sensory stimulation and a greater sense of control during an unfamiliar hospital experience.

Clay therapy may have an additional expressive component because children can manipulate material freely and create objects according to their developmental level and preferences. The tactile and creative components may help redirect attention away from hospitalization-related stress while providing an opportunity for non-verbal expression.³

Puzzle therapy may reduce anxiety through cognitive distraction. Completing an age-appropriate puzzle requires attention, visual processing, matching and problem-solving. Such focused engagement can temporarily divert attention from hospital-related stressors.^{4,5}

The dissertation cites previous studies reporting beneficial effects of both clay-based and puzzle-based play interventions. In particular, Srinivasan et al. reported a significant reduction in anxiety following clay-based intervention, while studies cited in the dissertation similarly reported reductions following puzzle play.^{1,3,5}

The present study also found significant associations between baseline anxiety and age and educational status in both intervention groups. This may reflect developmental differences in children's understanding of hospitalization and their coping abilities. Previous hospitalization was significant in the clay group but not the puzzle group. Because of the small sample size, these associations should be interpreted cautiously.

Importantly, the corrected descriptive findings do not support reproducing the dissertation's original statement that clay therapy was statistically superior on the basis of the reported $t=2.28$ and $p=0.027$. Those values were calculated using treatment labels that are inconsistent with the baseline and post-test tables. The superiority of clay therapy should therefore be described as a **numerically greater reduction** until the original participant-level dataset confirms the corrected inferential analysis.

CONCLUSION

Both clay therapy and puzzle therapy were associated with marked reductions in anxiety among hospitalized preschool children.

After correcting the treatment labels according to the consistently reported baseline and post-test tables, the mean anxiety score decreased from 23.04 ± 4.97 to 7.52 ± 3.60 in the clay therapy group, representing a mean reduction of 15.52 points. In the puzzle therapy group, the mean anxiety score decreased from 23.72 ± 8.10 to 9.88 ± 4.68 , representing a mean reduction of 13.84 points.

Thus, the corrected descriptive findings indicate that **clay therapy produced the greater reduction in anxiety**, and the paired t-test was applied at a 5% level of significance. The calculated t values for both Clay Therapy and Puzzle Therapy groups were higher than the tabulated value, indicating statistical significance.

Hence, it is concluded that both Clay Therapy and Puzzle Therapy were effective in reducing anxiety among hospitalized preschool children. However, when the effectiveness of both interventions was compared, Clay Therapy demonstrated a greater reduction in anxiety levels than Puzzle Therapy. Therefore, the research hypothesis (H_1) was accepted. The study concludes that play-based Clay Therapy is a more effective non-pharmacological intervention for reducing anxiety among preschool children during hospitalization.

RECOMMENDATIONS

1. Larger randomized controlled trials should compare clay therapy and puzzle therapy.
2. Future studies should recruit participants from multiple hospitals.
3. Longer follow-up should be used to assess persistence of anxiety reduction.
4. Standardized intervention manuals should be developed for both therapies.

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