Nursing Journal
Volume 11, Issue 1, Page 258- 264
e-ISSN: 2354-6050

https://ejurnal.poltekkesjakarta3.ac.id/index.php/JKep
DOI: https://doi.org/10.32668/jkep.v11i1.2344

PUZZLE PLAY THERAPY WITH PARENTS AS A NON-PHARMACOLOGICAL INTERVENTION FOR PRESCHOOL CHILDREN'S ANXIETY DUE TO HOSPITALIZATION

1st Mela Agramadani [1]

2nd Indah Permatasari[2*]

[1,2] Bachelor of Nursing Study Program, Faculty of Health Sciences, Universitas Pembangunan Nasional "Veteran" Jakarta, Jakarta, Indonesia

[*]email: indahpermatasari@upnvj.ac.id

Keywords:
Anxiety
Atraumatic care
Family-centered care
Hospitalization
Preschool children
Puzzle play therapy

Abstract

Preschool children frequently experience anxiety during hospitalization due to unfamiliar environments, unpleasant medical procedures, and limited interaction with their parents. This anxiety may reduce children's cooperation during treatment and negatively affect treatment outcomes if it is not properly managed.
This study aimed to determine the effect of puzzle-playing therapy involving parental participation on anxiety levels among hospitalized preschool children. This study employed a quantitative pre-experimental design using a one-group pretest–posttest approach. The sample consisted of 22 preschool-aged children admitted to Tarakan Regional General Hospital, Central Jakarta, Indonesia.
Anxiety levels were assessed using the Face Image Scale (FIS) before and after the intervention. Puzzle-playing therapy was administered with parental involvement for approximately 15 minutes over two days. Univariate and bivariate analyses were conducted using the Wilcoxon test. The results showed that the median anxiety score decreased from 4 to 1 following the intervention. The Wilcoxon test indicated a statistically significant difference (p = .001). These findings demonstrate that puzzle-playing therapy involving parental participation effectively reduces anxiety among hospitalized preschool children.

Received: December 2025
Accepted: January 2026
Published: May 2026

INTRODUCTION

Hospitalization can cause stress and affect the psychological well-being of preschool children (3–6 years old). Children must adapt to an unfamiliar hospital environment and undergo unpleasant medical procedures such as intravenous insertion and blood sampling, while sometimes being separated from their families. Consequently, children may cry excessively, experience sleep disturbances, lose their appetite, and refuse treatment (1). Hospitalized children often experience both psychological and physical stress, although school-aged children are generally able to communicate more effectively than toddlers (2).

Children may become uncooperative during treatment if anxiety is not appropriately managed. This may reduce treatment effectiveness and prolong hospitalization (3). Hospitalized children frequently experience anxiety triggered by fear, restlessness, anger, separation from parents, adaptation to a new environment, or loss of independence (4). Untreated anxiety may result in stress, fatigue, and prolonged hospitalization (5).

According to the World Health Organization (WHO), approximately 3–10% of hospitalized children in the United States, 3–7% in Germany, and 5–10% in Canada and New Zealand experience anxiety. The Indonesian Central Statistics Agency for Mothers and Children (2024) reported a child hospitalization rate of 2.99%, an increase from 1.88% in 2022. These findings indicate

important challenges in pediatric inpatient care, particularly regarding children's psychological well-being.

Appropriate nursing strategies are required to reduce the traumatic effects of hospitalization on children. Atraumatic care aims to minimize both physical and psychological stress experienced by children and their families during hospitalization (6). The four primary principles of atraumatic care include preventing parent–child separation through family-centered care, enhancing parents' ability to care for their children, minimizing physical and psychological distress, and modifying the physical environment to provide greater support (6).

Play therapy for preschool children should be tailored to their cognitive developmental stage because they still think concretely and egocentrically (7). Preschool children are also more likely to experience anxiety when interacting with unfamiliar healthcare providers (8). Therefore, simple games involving parental participation are considered appropriate interventions for this age group. Puzzles are commonly used therapeutic play tools because they are simple and can improve children's fine motor skills, concentration, and creativity (1). However, children still require parental support during play to prevent frustration (7).

Several studies have demonstrated that puzzle play therapy effectively reduces anxiety among hospitalized preschool-aged children, including those undergoing invasive procedures (4). Before therapy, many children experienced moderate to severe anxiety; however, following therapy, more than half demonstrated mild anxiety levels (4). These findings suggest that puzzle play therapy can help children cope with hospitalization-related stress (5). Previous research has also shown that Islamic puzzle therapy is more effective in reducing anxiety among hospitalized children compared with standard interventions (5).

Parental involvement during therapy plays an important role in enhancing children's sense of security and reducing emotional distress (10). However, many therapeutic interventions still do not actively involve parents, despite evidence supporting their effectiveness. Since parental involvement is essential for children's cognitive and emotional development, further studies are recommended to implement puzzle play therapy involving parents as a form of non-invasive and family-centered pediatric care (9).

This study examines the effect of puzzle play therapy involving parents on anxiety levels among hospitalized preschool children. Previous studies have shown that this therapy can reduce anxiety from moderate or severe levels to mild levels. Parents also play an essential role in providing emotional support and a sense of security (4). Although play therapy has been widely studied, the involvement of parents as active participants during interventions has received relatively limited attention (5). Therefore, puzzle play therapy involving parents is expected to become a practical, effective, and family-centered nursing intervention for reducing anxiety among hospitalized preschool children.

METHODS

This study used a quantitative approach with a one-group pretest–posttest pre-experimental design without a control group, which allows comparison of outcomes before and after the intervention but has limited ability to establish causality (11). This design compares the conditions of respondents before and after the intervention to assess the effect of puzzle-playing therapy with parents on the anxiety of preschool children due to hospitalization (11,12). The quantitative approach was chosen because the data obtained were numerical scores of children's anxiety levels measured using the Facial Image Scale ordinal scale (13).

The research group consisted of preschool children, aged between 3 and 6 years, who were receiving treatment at Tarakan Regional General Hospital, Central

Jakarta, Indonesia (14). This group was chosen because preschool children are more prone to anxiety when in the hospital. Therefore, the use of puzzle play therapy involving family members was very appropriate. To determine the sample size, calculations indicated that at least 20 children were needed, with an additional 10% to anticipate possible absences or dropouts, resulting in a final sample of 22 participants included in the study (15). In addition, the relatively small sample size and the homogeneous clinical characteristics of the participants may limit the generalizability of the results to other hospitalized preschool children with different clinical conditions.

Preschool children aged 3–6 years undergoing hospitalization must be conscious (compos mentis), in a state of despair, and have been hospitalized for at least 24 hours (7,16). Children suffering from severe medical conditions, disorders affecting upper limb movement, chronic pain, burns that affect over 10% of their body, or those with altered levels of consciousness are excluded from the criteria for inclusion. The study took place in the pediatric inpatient ward at the Hospital located in Central Jakarta, and it was conducted between August and November 2025. Age, gender, experiences of hospitalization, and the severity of the illness were potential confounding variables; the independent variable was the puzzle therapy conducted with parents, while the dependent variable was the anxiety scores of preschool children during their hospitalization (17,18).

To measure children's nonverbal anxiety, this study used the Facial Image Scale (FIS), which ranges from 0 to 5, along with a questionnaire on respondent characteristics. The research process began with a pretest using the FIS., As an application of Family-Centered Care (FCC), puzzle-playing therapy with parental involvement was conducted for approximately 15 minutes per session over two consecutive days (19). The intervention took place during daytime hours when the child was awake and in a stable condition to ensure optimal participation (20). The intervention was conducted by the researcher using standardized puzzle toys that met the Indonesian National Standard (SNI). The same type of puzzle was used for all participants to ensure consistency. Children were encouraged to engage in puzzle play together with their parents at the bedside. Parents were instructed to actively accompany and assist the child, including providing encouragement and helping when needed. The researcher supervised each session to ensure consistent implementation across all participants (6,21). After the intervention, a posttest was conducted using the FIS to assess changes in the children's anxiety levels (22).

The Facial Image Scale (FIS) demonstrates significant construct validity, as it corresponds well with the nonverbal signs of anxiety observed in preschool-aged children. Furthermore, it exhibits satisfactory content and criterion validity, achieving a score of 0.7 (16,19). This instrument demonstrates strong reliability, as evidenced by a Cronbach's alpha score of 0.82, signifying effective measurement consistency (19).

Data analysis was carried out in several stages, including editing, coding, data entry, processing, and cleaning to ensure data accuracy (23). Univariate analysis was used to describe the characteristics of the respondents and anxiety scores, while bivariate analysis used the Wilcoxon Signed Rank test to assess differences in anxiety before and after the intervention because the data were ordinal and paired. This study has obtained ethical approval from the Tarakan Regional General Hospital Health Research Ethics Committee with number 048/KEPK/RSUDT/2025 and applies the principles of respect for individuals, beneficence, justice, and confidentiality through informed consent, non-invasive intervention, equal treatment, and protection of respondent data confidentiality (23).

RESULTS AND DISCUSSION

This study involved 22 hospitalized preschool-aged children at Tarakan Regional General Hospital, Central Jakarta, Indonesia. The characteristics examined among the participants included age, gender, previous

hospitalization experience, illness severity, and children's anxiety levels before and after puzzle-playing therapy involving their parents, as presented below.

Table 1. Distribution of Average Age of Preschool Children (N=22)

Variable	Mean	Median	SD	Min-Max
Age	4,18	4	0,91	3-6

Table 1 indicates that the mean age of preschool children was 4.18 years, with a median of 4 years and a standard deviation of 0.96 years. This demonstrates that all participants were between the ages of three and six years. Preschoolers are rapidly developing their physical, cognitive, verbal, motor, social, and emotional skills. They are currently in the preoperational stage of development, balancing initiative with remorse (9). These developmental characteristics make preschool-aged children ideal candidates for play-based therapy. Prior studies have demonstrated that puzzle play therapy can effectively reduce anxiety in children aged 3 to 6, implying that this age group is suitable for therapeutic intervention (5).

Table 2 indicates that the distribution of respondents by gender was even, comprising 11 boys and 11 girls, each representing 50%. During preschool years, a child's development is affected by both biological and environmental factors; therefore, emotional reactions to hospitalization can vary between boys and girls. Variations in how individuals interact and express emotions can influence children's anxiety while they are hospitalized (24).

Previous studies have reported that girls tend to have higher anxiety when facing medical procedures, while preschoolers' anxiety is generally triggered by separation from parents, unfamiliar environments, loss of control, and medical procedures (16). The balanced distribution of respondents enables a more objective analysis of anxiety based on gender.

Table 2. Distribution of Respondent Characteristics by Gender, Hospitalization Experience, and Disease Severity in the Inpatient Ward

Respondent Characteristics	Frequency (f)	Percentage (%)
Gender		
Male	11	50%
Female	11	50%
Hospitalization Experience		
Yes	14	63.6
Not yet	8	36,4
Disease Severity Level		
Outpatient Care	0	0
Mild (without comorbidities)	22	100
Moderate (with comorbidities)	0	0
Severe (Intensive Care)	0	0
Total	22	100

Most respondents, namely 14 children (63.6%), had been hospitalized before. Preschool children who are hospitalized may experience stress and anxiety due to the new environment and lack of activities (7). This is especially true because children are still in the preoperational stage and think egocentrically (17).

Children who have been hospitalized before do not always show better adaptation, as they are still prone to anxiety in the form of restlessness or fear, as well as separation anxiety, fear of injury, and loss of control (7). In addition, parental anxiety and family support during treatment also affect children's anxiety during hospitalization (21).

Most children treated in the Inpatient Ward had mild disease severity (severity level I). This indicates that all respondents were in a relatively stable clinical condition and had no significant problems or comorbidities. They also did not require intensive care (25). Because respondents did not have significant clinical disorders, diseases such as acute gastroenteritis, acute fever, bronchitis, uncomplicated typhus, minor fractures, and bronchiolitis were classified as mild severity.

Table 3. Distribution of Average Pre-test and Post-test Scores (n=22)

Variable	Mean	Median	SD	Min-Max
Pre-test	3,68	4	0,78	2-5
Post-test	0,82	1	0,80	0-2

Before puzzle therapy, the children's average score was 3.69 (median 4; range 2–5), indicating a decrease in anxiety levels after the intervention. However, after the intervention, the average score dropped to 0.82 (median 1; range 0–2), indicating a clear decrease in anxiety. Preschool children experience anxiety as an emotional response to new environments, such as hospitals. Their reaction is influenced by their cognitive inability to understand medical procedures and changes in circumstances during hospitalization (16). Previous research suggests that puzzle therapy may help reduce anxiety in preschool children, with anxiety levels decreasing and significant changes between before and after the intervention (5).

Table 4. Wilcoxon Test Results for Knowledge Before and After the Test

	Median (minimum - maximum)	Average±s.b	P-value
Pre-test	4 (2-5)	3.68 ± 0.78	< 0.001
Post-test	2 (0-2)	0.82 ± 0.80	

The Wilcoxon test results showed a statistically significant difference in anxiety levels before and after the intervention, with the median score decreasing from 4 to 1 ($p < 0.001$). These findings suggest that puzzle-playing therapy with parental involvement was associated with a reduction in anxiety among preschool children during hospitalization. Preschool children often experience anxiety because they are unfamiliar with the hospital environment, separated from their parents, and lack the cognitive ability to understand medical procedures (17). Previous studies have shown that puzzle play therapy reduces anxiety in children (16). Parental involvement, which provides a sense of security, and puzzle activities that distract children, influence the success of this intervention (21,26).

However, this study used a one-group pretest–posttest design without a control group, which limits the ability to establish a causal relationship between the intervention and the observed reduction in anxiety. Therefore, the findings should be interpreted with caution, as other factors may have influenced the results.

CONCLUSION

The study participants primarily consisted of preschool children aged three to six years, with a relatively balanced gender distribution. Most participants had previous hospitalization experience. The study demonstrated that puzzle-playing therapy involving parental assistance during hospitalization significantly reduced anxiety levels among preschool children. Comparison of anxiety levels before and after the intervention revealed a statistically significant anxiety reduction, indicating the effectiveness of the intervention. These findings emphasize the effectiveness of puzzle-playing therapy involving parental participation as a non-pharmacological approach for reducing anxiety among hospitalized preschool children. Further research is recommended to increase the sample size, include a broader age range, and examine additional variables such as duration of hospitalization, family support, and type of medical treatment to strengthen the evidence regarding the intervention’s effectiveness.

ACKNOWLEDGMENT

The researchers would like to express their sincere gratitude to the hospital where the study was conducted for granting permission and providing facilities throughout the research process. The researchers also extend their appreciation to all respondents and parents who participated in this study, as well as to all individuals who contributed to the successful implementation of the research.

REFERENCES

1 Yulianto A, Idayati I, Sari SA. Bermain (Puzzle) Terhadap Kecemasan Anak Usia Prasekolah Yang Mengalami Hospitalisasi. *Jurnal Wacana Kesehatan* 2021; 6: 39. doi: 10.52822/jwk.v6i1.172

2 Johnson AA, Berry A, Bradley M, Daniell JA, Lugo C, Schaum-Comegys K *et al.* Examining the Effects of Music-Based Interventions on Pain and Anxiety in Hospitalized Children: An Integrative Review. *J Pediatr Nurs* 2021; 60: 71–76. doi:10.1016/j.pedn.2021.02.007

3 Abdi F, Karamoozian A, Lotfilou M, Gholami F, Shaterian N, Niasar AA *et al.* Effect of play therapy and storytelling on the anxiety level of hospitalized children: a randomized controlled trial. *BMC Complement Med Ther* 2025; 25. doi:10.1186/s12906-025-04767-4.

4 Islamiyah I, Dwi Novianti A, Anhusadar L. Pengaruh Terapi Bermain Puzzel untuk Penurunan Kecemasan Hospitalisasi pada Anak Usia Prasekolah. *Murhum : Jurnal Pendidikan Anak Usia Dini* 2024; 5: 87–98. doi:10.37985/murhum.v5i1.409

5 Sapardi VS, Andayani RP, Ubaidillah. Pengaruh Terapi Bermain Puzzle Islami Terhadap Kecemasan Pada Anak Usia Pra Sekolah Dengan Hospitalisasi. 2024. doi: 10.36984/jkm.v4i2.240

6 Fitriani D, Hendrawati S, Nur Asriyani Maryam N, Studi Ners Fakultas Keperawatan P, Padjadjaran U, Keperawatan Anak Fakultas Keperawatan D. Penerapan Prinsip Atraumatic Care dan Family Centered Care pada Anak dengan Hemangioma di Ruang Rawat Inap Non Intensif: Studi Kasus. 2023 doi:10.55681/sentri.v2i9.1432.

7 Potter PA, Perry AG, Stockert PA, Hall AM. *Fundamentals of Nursing*. 11th ed. Elsevier: St. Louis, Missouri 63043, 2023.

8 Hockenberry MJ, Gibbs KD, Duffy EA. *Wong's Essentials of Pediatric Nursing (12th ed.)*. Elsevier, 2025.

9 Deswita, Fajria L, Fitridilla. *Tahap Perkembangan Anak & Stimulasi Perkembangan Pada Anak Yang Perlu Diketahui Ibu Yang Mempunyai Anak Usia Prasekolah*. 2023.

10 Santoso APA, Agustin CA, Azzahra FB, Efani H, Correia TA, Safitri ZH. Konsep pelayanan keperawatan komplementer alternatif dengan pendekatan teori Dorothea Orem. *Journal Complementary of Health (JCoHealth)* 2022; 2: 85–87. https://doi.org/10.36086/jch.v2i2

11 Adiputra IMS, Trisnadewi NW, Oktaviani NPW, Munthe SA, Hulu VT, Budiastutik I *et al.* *Metodologi Penelitian Kesehatan*. 1st ed. Yayasan Kita Menulis: Indonesia, 2021.

12 Purwanza SW, Wardhana A, Mufidah A, Renggo YR, Hudang AK, Setiawan J *et al.* *Metodologi Penelitian Kuantitatif, Kualitatif, dan Kombinasi*. Media Sains Indonesia dan Penulis: Indonesian, 2022. https://doi.org/10.36086/jch.v2i2

13 Anggreni D. *Buku Ajar Metodologi Penelitian Kesehatan*. E 610.7. STIKes Majapahit Mojokerto., 2022. Available on https://digilib.mahardika.ac.id/index.php?p=show_detail&id=3524.

14 Hardani, Aulia Hikmatul N, Andriani H, Fardani Asri R, Ustiawaty J, Utami Fatmi E *et al. Metode Penelitian Kualitatif dan Kuantitatif*. 2020. Avilable on http://webs.ucm.es/info/biomol2/Tema.

15 Triana NY, Haniyah S, Khabibah U. Efektivitas Audiovisual Film Kartun dengan Storytelling Terhadap Nyeri Prosedur Invasif Anak Pra Sekolah. 2024; : 7. doi: 10.52488/jnh.v9i4.439

16 Oktaviana D, Immawati I, Nurhayati S. Implementasi Terapi Bermain Edukasi (Puzzle)

pada Anak Usia Prasekolah yang Mengalami Kecemasan Akibat Hospitalisasi. *Jurnal Cendikia Muda* 2025; 5: 216–224.

17 Babullah R. Teori Perkembangan Kognitif Jean Piaget dan Penerapannya dalam Pembelajaran. *Epistemic: Jurnal Ilmiah Pendidikan* 2022; 1: 131–152. https://doi.org/10.70287/epistemic.v1i2.10

18 Saputro H, Farzin I. *Anak Sakit Wajib Bermain di Rumah Sakit: Penerapan Terapi Bermain Anak Sakit; Proses, Manfaat dan Pelaksanaannya*. Forum Ilmiah Kesehatan (FORIKES): Ponorogo, Indoensian, 2017.

19 Suhartini S, Wahyudi G, Raharjo R, Lailaturohmah L, Khasanah N, Toaha A. *Asuhan Keperawatan Anak*. CV. Dewa Publishing, 2023.

20 Ikhsan M, Hartati S, Gowi A, Maharani R, Hasnani F, Basri M *et al. Buku Ajar Keperawatan Anak*. CV. Science Techno Direct: Pangkalpinang, 2024.

21 Abiyyu R. *Pengaruh Distraksi Virtual Reality (VR) melalui Video Animasi Kartun terhadap Kecemasan dan Nyeri Anak saat Prosedur Pemasangan Infus di Ruang Rawat Inap Anak Rumah Sakit dr. Reksodiwiryo Kota Padang*. 2025; 32.

22 Sahir SH. *Metolodologi Penelitian (T. Koryati, Ed.; 1 ed). Jawa Timur: KBM Indonesia*. Penerbit Kbm Indonesia, 2021.

23 Wulandini P, Kartika IR, Sartika W, Febrianita Y. *Keperawatan Dasar Anak: Permainan Tradisional untuk Meningkatkan Motorik dan Manajemen Nyeri pada Anak Penyakit Kronis*. Tahta Media Group: Solo, Indonesia, 2023.

24 Menkes. Peraturan Menteri Kesehatan Nomor 26 Tahun 2021 tentang Pedoman Indonesian Case Base Groups (INA-CBG) dalam Pelaksanaan Jaminan Kesehatan. Kementerian Kesehatan Republik Indonesia, 2021.

25 Marbun RA, Sihombing F, Randa YD, Wilandika A, Sopaliu DW, Nirwan *et al. Buku Ajar Keperawatan Anak*. 1st ed. CV. Eureka Media Aksara, 2025.