



THE EFFECT OF SQUISHY PLAY THERAPY ON REDUCING ANXIETY IN TODDLERS DURING HOSPITALIZATION

Shelsa Mutiara Sukma, Siti Arifah*

Nursing Study Program, Faculty of Health Sciences, Universitas Muhammadiyah Surakarta, Jl. A. Yani, Mendungan, Pabelan, Sukoharjo, Central Java 57162 Indonesia

*siti_arifah@ums.ac.id

ABSTRACT

Hospitalization often triggers anxiety in children, characterized by reactions such as crying, fussiness, and restlessness, which vary among individuals. Play therapy can play an important role in distracting children from the pain or discomfort they experience. This study aims to examine the effect of squishy play therapy on reducing anxiety in toddlers during hospitalization. This was a quasi-experimental study with a one-group pretest-posttest design. This study involved purposive sampling techniques to recruit 15 children. Data were collected using a demographic questionnaire (age, gender, length of stay, and hospitalization history) and the Face Anxiety Scale (FAS). The collection process involved direct observation of anxiety levels before (pre-test) and after (post-test) the squishy play therapy intervention. Data analysis was performed using the Wilcoxon test, with the processing involving editing, coding, scoring, data entry, cleaning, and tabulating. The findings showed that the application of squishy play therapy resulted in a significant reduction in anxiety, with a p-value of 0.001 ($p < 0.05$). Thus, this intervention is proven to be effective in reducing anxiety in toddlers during hospitalization. This study is expected to contribute to the development of nursing practice through the use of squishy play therapy as an innovative non-pharmacological strategy that can be applied to improve the well-being of children in a hospital setting.

Keywords: anxiety; hospitalization; play therapy; squishy; toddler

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INTRODUCTION

Hospitalization in children can be seen as a source of increased stress, anxiety, and feelings of disappointment and sadness in children. This is due to the child's experience of undergoing various exhausting medical and therapeutic processes in the hospital. In addition, stress in children is caused by the process of adapting to a new environment, separation from their old environment and parents, as well as exposure to medical procedures and strangers during hospitalization (Hariyadi, 2019). Children who have undergone hospital treatment often show different emotional responses compared to those who have never had a similar experience. This is due to the formation of perceptions of the hospital environment influenced by past memories, where the situation can be considered a moment of tension, threat, or even leave deep trauma in their minds (Suraya et al., 2025).

Based on World Health Organization data, approximately 3–10% of children in the United States, including toddlers, preschoolers, and school-age children, undergo hospital treatment. Meanwhile, in Germany, approximately 3–7% of toddlers and 5–10% of preschoolers undergo hospitalization. The outpatient rate for toddlers shows a decrease compared to two years prior, from 47.15%. Based on regional classification, the data shows that the outpatient rate for toddlers is higher in urban areas (47.03%) than in rural areas (42.55%). The data also shows that male toddlers have a higher outpatient percentage (46.18%) than female toddlers (44.20%). In addition, the data shows that the rate of outpatient care for toddlers increases in line with the improvement in family economic status (Badan Pusat Statistik, 2023). The average number of respondents who were hospitalized at the

PKU Muhammadiyah Delanggu Hospital with a medical diagnosis of ISPA (Upper Respiratory Tract Infection). Based on the 2023 Indonesian Health Survey, 41% of toddlers had URTI based on diagnosis and symptoms, meaning that around 41 out of 100 children in Central Java had experienced URTI in the last month based on diagnostic criteria and symptoms (Kemenkes RI, 2023). Child development in the toddler phase refers to progress in cognitive, physical, language, motor, social, and emotional areas, which occurs from early childhood to around the age of eight. Various studies have confirmed that these early stages of life play a crucial role in shaping optimal child growth and development. During this period, the main neural networks are formed, which then become the foundation for an individual's physical health, learning ability, productivity, and social well-being throughout their life (World Health Organization, 2019).

Anxiety is a common human response to danger that involves thoughts, feelings, and actions. Anxiety can become excessive or abnormal when these feelings exceed happy experiences, interfere with daily activities, or cause severe emotional distress (Rohmah et al., 2025). The anxiety experienced by children during their hospital stay is influenced by several key factors, such as changes in their health condition and environment that differ from their daily routine, their limited ability to manage stress, and various events that cause emotional distress (Sari & Arifah, 2017). If this anxiety is not addressed promptly, especially that arising from nursing interventions, it may lead to the child's refusal of subsequent medical procedures. Therefore, to reduce anxiety levels associated with hospitalization, a non-pharmacological approach in the form of media or therapy that is effective in calming children is needed, so that they can be more cooperative with the nursing actions provided. One option that has proven to be effective is play therapy (Diansari et al., 2024).

Play therapy serves as an effective tool for reducing anxiety levels in children. By engaging in play activities, children can be freed from the stress and tension they are experiencing, as their attention is diverted from painful sensations through engaging games, creating a more comfortable and enjoyable atmosphere (Gunasyah et al., 2024). In a hospital setting, play has several important roles, such as helping children adapt to unfamiliar environments and conditions, improving their decision-making and emotional control skills, reducing stress and anxiety levels, minimizing pain perception, and introducing children to the goals and processes of treatment during their care (Sari & Arifah, 2017). The principles of play therapy emphasize that activities must be in line with ongoing medical therapy and treatment, not overly taxing the child's energy, and prioritizing safety. Furthermore, this therapy needs to be tailored to the child's age group and involve the active participation of parents (Ginanjari et al., 2023). One form of play therapy that is suitable for children during hospitalization is using squishies, which are soft objects that are popular as toys and are made of soft polyurethane foam and specially designed. These objects have a soft texture, are resistant to damage, and reduce the risk of being swallowed by children. Additionally, squishies are elastic, so they can gradually return to their original shape after being squeezed or pressed (Maharani et al., 2025). Squishies act as a medium that helps children stay calm through stimulation of the nerves in the hands that are directly connected to the brain (Widiarti et al., 2021).

Research conducted by Rohmah et al.(2025) revealed that the application of play therapy with squishy toys had a significant impact on reducing anxiety levels in preschool-aged children, between 3 and 6 years old, who were undergoing hospitalization. The average anxiety score of the children decreased from 2.54 before the intervention to 1.56 after the therapy was administered, with the Wilcoxon test showing a p-value of 0.000 ($p < 0.05$). This therapy, which was conducted twice a day for three days, was considered effective, practical in its implementation, and capable of producing a relaxing effect through sensory stimulation in children. Furthermore, research by Diansari et al.(2024) showed that the use of play therapy with puzzles successfully reduced anxiety levels in toddlers, aged 1 to 3 years, who were treated at Dr. Moewardi Regional General Hospital. In a case study of two subjects, there was a decrease in anxiety scores after the intervention, with one child changing from the moderate anxiety category to non-anxious, while the other decreased

from mild anxiety to very non-anxious, based on measurements using the Faces Image Scale (FIS). This indicates that puzzle play therapy is effective as a distraction method that helps children become calmer, more cooperative, and reduces anxiety responses during the hospital treatment process. Based on the above data, the effect of squishy play therapy on toddlers is not yet known. Therefore, the author is interested in conducting research related to "The Effect of Squishy Play Therapy on Reducing Anxiety in Toddlers During Hospitalization". The purpose of this study is to determine the effect of squishy play therapy on reducing anxiety due to hospitalization in toddlers at PKU Muhammadiyah Delanggu Hospital.

METHOD

This study applied a quasi-experimental approach with a pretest-posttest design in one group. This study was conducted in 2025 in the children's ward at PKU Muhammadiyah Delanggu Hospital. The independent variable was squishy play therapy, and the dependent variable was the level of anxiety in toddlers during hospitalization. Purposive sampling was used to find the respondents. Fifteen (15) children were involved in this study based on the following inclusion criteria: (1) Pediatric patients aged one to three years, (2) Patients hospitalized in the pediatric ward for a minimum of 3 days, (3) parents can communicate in Bahasa. In this study, the FAS (Face Anxiety Scale) was used as an instrument to evaluate the anxiety levels of the participants. The scale ranges from 0 to 5, interpreted as follows: score 0 (No anxiety), score 1 (Mild anxiety), score 2 (Mild to moderate anxiety), score 3 (Moderate anxiety), score 4 (Moderate to high anxiety), score 5 (High anxiety). This instrument was previously validated by McMurtry et al. (2010) with a construct validity value of $r = 0.78$ ($p < 0.001$) and a test-retest reliability coefficient of $r = 0.77$. The researchers also used a demographic data questionnaire to obtain information on the name, age, gender, medical diagnosis, length of stay, history of hospitalization, guardian, age, and education of the parents. Data analysis was performed using SPSS 23 for Windows software and the Wilcoxon Signed Rank Test to determine the effect of squishy play therapy on reducing children's anxiety levels. This research was approved by the Research Ethics Committee of Muhammadiyah University Surakarta with ethical approval number 1418/KEPK-FIK/VII/2025.

RESULT

Based on Table 1, it shows that the majority of respondents were female (53.3%) and the number of male respondents was (46.7%). The age group with the most respondents was 3 years old (46.7%) with an age range of 1-3 years. The most common length of hospitalization is 2 days (66.7%). The most common hospitalization history experienced by respondents is 2 times (46.7%).

Table 1
Demographic Data of Respondents (n = 15)

Characteristics	f	%
Gender		
Male	7	46.7
Female	8	53.3
Age (in years)		
1	4	26.7
2	4	26.7
3	7	46.7
Length of Hospitalization		
1 day	3	20.0
2 days	10	66.7
3 days	2	13.3
Hospitalization History		
1 time	4	26.7
2 times	7	46.7
3 times	3	20.0
4 times	1	6.7

Table 2.
Anxiety levels of children (n = 15)

Anxiety Level	Before		After	
	f	%	f	%
No Anxiety	0	0	4	26.7
Mild Anxiety	0	0	5	33.3
Mild to Moderate Anxiety	0	0	4	26.7
Moderate Anxiety	6	40.0	2	13.3
Moderate to High Anxiety	6	40.0	0	0
High Anxiety	4	20.0	0	0

Based on the data presented in Table 2, before the intervention was implemented, 40% of children were in the moderate anxiety category, 40% of children were in the moderate-high anxiety category, and 20% of children experienced high anxiety. These findings indicate that the anxiety levels in children generally ranged from moderate to high before the intervention was carried out. After the intervention was implemented, the research results showed a decrease in anxiety in the majority of respondents. Specifically, 26.7% of children no longer showed symptoms of anxiety, 33.3% were in the mild category, 26.7% were in the mild-moderate category, and only 13.3% still experienced moderate anxiety. Overall, the data reflects a significant decrease in children's anxiety levels after the intervention was administered.

Table 3.
The Effect of Squishy Play Therapy on Reducing Anxiety in Toddlers During Hospitalization

Variable	Z	p-value	Description
Anxiety Level After - Before	-3.355	.001	Significant

Based on the data presented in Table 3, the results of the Wilcoxon Signed Rank Test show a Z value of -3.355 with a p-value of 0.001, which is less than 0.05. These findings indicate a significant difference between the anxiety levels of children before and after the intervention. These results confirm that the intervention implemented has a real impact in reducing anxiety in children undergoing hospitalization, so that the observed changes cannot be considered mere coincidence, but rather a direct effect of the intervention.

DISCUSSION

The results of the study show that the number of female respondents was slightly higher than male respondents, although the difference was not too large. The characteristics of the respondents in this study can be said to be fairly balanced between males and females, so that gender differences did not dominate significantly in the study sample. Based on age, the majority of respondents were 3 years old, who in terms of cognitive and emotional development were already more capable of responding to their environment, including hospitalization and play therapy interventions. The relatively even age distribution between 1 and 3 years old indicates that this study covers a representative range of toddler ages. Specifically, younger children tend to show higher levels of anxiety, especially those who have never been hospitalized before (Pujianti et al., 2025).

The findings from the application of play therapy show that most respondents were undergoing hospitalization on the second day. In this study, children who were hospitalized on the first and second days generally showed moderate to high levels of anxiety, as seen in their behavior, such as crying and whining. Furthermore, the duration of hospitalization was found to have a significant association with the intensity of anxiety in children undergoing hospitalization (Patantan et al., 2022). Most of the respondents in this study were not patients who were hospitalized for the first time, so they already had previous experience with hospital care. These experiences can influence children's emotional responses, particularly their anxiety levels, which may result in better adaptation or the opposite, depending on the nature of their previous hospitalization experiences. In general, children who have never been hospitalized tend to show lower anxiety levels than those who have had such experiences (Abdi et al., 2025).

The results of the study before play therapy showed that 60% of children were in the moderate to high anxiety category. Anxiety in children is usually caused by changes in the environment, the child's age, and hospitalization history. This study showed that 20% of children had high anxiety, characterized by loud crying, 40% of children had moderate to high anxiety, characterized by whining, and 40% of children had moderate anxiety, characterized by fussiness. Factors such as age, gender, length of hospitalization, and previous treatment history affect the level of anxiety in children. Drastic environmental changes during the period of hospital care often trigger anxiety in children. In the context of this study, one-year-old children tended to show more intense levels of anxiety than three-year-olds. Conversely, three-year-olds, especially girls, were generally better able to establish effective therapeutic communication. The results of this study indicate that the age of the child and previous hospitalization history are the main variables that significantly affect the degree of anxiety during treatment. These findings are in line with the study Suraya et al. (2025), which states that younger preschoolers and those who have never been hospitalized tend to experience moderate to severe anxiety.

After play therapy with squishies, the results showed that 60% of children were in the no anxiety to mild anxiety category. Most children experienced a decrease in anxiety levels, with 26.7% of children no longer showing anxiety, as indicated by smiling or laughing lightly, 33.3% of children were in the mild anxiety category, as indicated by children becoming interested in the game and starting to cooperate, and 26.7% of children were in the mild to moderate anxiety category, where children showed flat expressions and did not show signs of fussiness or crying. Only 13.3% of children remained in the moderate anxiety category, characterized by continued fussiness. After play therapy with squishy toys, the children showed a more relaxed state, marked by behavioral changes such as becoming calmer, reduced whining, no longer crying loudly, and increased cooperative behavior during treatment. This condition may occur because squeezing squishy toys provides sensory and tactile stimulation that is calming, thereby helping to reduce the emotional tension experienced by children during hospitalization. These findings are in line with research conducted by Pratiwi & Arifah (2025), which shows that play therapy is effective in reducing anxiety levels in preschool children during hospitalization. The results of the study revealed that the application of balloon rocket play therapy had a significant impact on reducing anxiety in children hospitalized, with a statistical significance value of $p < 0.001$. These findings reinforce the evidence that play therapy involving fun activities and distraction techniques can help children divert their attention from fear, pain, and psychological pressure caused by the hospital environment.

The significant decrease in anxiety levels in the post-test in this study is in line with the findings of Pujiati et al. (2021), which concluded that intervention through play activities or play therapy is effective in reducing children's anxiety during hospitalization. In this study, play therapy served as a non-pharmacological approach that helped children shift their focus away from the stressors of the hospital environment, increase their sense of comfort, and improve their emotional responses during treatment. Statistical analysis in this study using the Wilcoxon test showed that play therapy with squishy media had a significant impact on reducing children's anxiety before and after the intervention, with a Z value of -3.355 and a p-value = 0.001 ($p < 0.05$). This negative Z-value further strengthens the evidence that anxiety scores decreased after the intervention. Therefore, play therapy using squishy toys has been proven to be an effective non-pharmacological strategy for reducing anxiety due to hospitalization in toddlers in the Hamka Room of PKU Muhammadiyah Delanggu Hospital. These findings are consistent with the results of Andriastuti et al. (2025), which reported that medical play can reduce anxiety in preschool children. Additionally, the study by Harnilawati & Asrianto (2021), found that play therapy was able to reduce anxiety in preschool children at the Haji Provincial General Hospital in South Sulawesi, with a p-value of 0.000.

This study shows that these findings reinforce the principle of atraumatic care, which emphasizes the application of interventions to minimize psychological trauma in children during hospital care.

Squishy play therapy has been proven effective in reducing anxiety, improving children's motor skills, supporting emotional regulation, and creating feelings of safety and comfort, thereby facilitating children's adaptation to the unfamiliar hospital environment. Empirical evidence indicates a decrease in anxiety levels in toddlers after the therapy. Therefore, this intervention should be recommended as a viable non-pharmacological approach. Nurses can apply squishy play therapy as a tool to reduce children's anxiety during the hospital care process.

CONCLUSION

Squishy play therapy has been proven to have a significant effect on reducing anxiety levels in toddlers during hospitalization. The provision of squishy play therapy has been proven to reduce anxiety levels in children, as indicated by the difference in anxiety scores before and after the play therapy intervention was administered, with a significant Wilcoxon test result $p\text{-value} = 0.001$ ($p < 0.05$). These findings contribute significantly to the development of pediatric nursing and developmental psychology, particularly in enriching safe and easily applied non-pharmacological therapy methods to address hospitalization stress in young children. By integrating sensory play elements such as squishies, this study opens up opportunities for more humane healthcare innovations, reducing dependence on medication and improving the quality of life for young patients.

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