

Medical Play Intervention as an Atraumatic Care Approach for Hospitalized Preschool Children: A Systematic Literature Review

ABSTRACT

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Hospitalization in preschool children can cause anxiety, fear, psychological stress, and uncooperative behavior during hospital treatment. Medical play is one of the atraumatic care approaches used to reduce the negative impacts of hospitalization on children. This study aimed to analyze the effectiveness of medical play interventions as an atraumatic care approach for hospitalized preschool children. The research method used was a Systematic Literature Review following the PRISMA guidelines. Articles were searched through the PubMed, Scopus, and ScienceDirect databases using keywords related to medical play, atraumatic care, preschool children, and hospitalization. The articles included were primary studies published between 2020–2025 that met the inclusion and exclusion criteria. A total of 9 primary articles were analyzed in this study. The synthesis results showed that medical play interventions were effective in reducing anxiety, fear, hospitalization stress, and psychological trauma in preschool children. In addition, medical play also improved children's cooperative behavior during medical and nursing procedures. The forms of intervention included therapeutic play, storytelling, pretend play, and the use of toy medical equipment. The study concludes that medical play is an effective non-pharmacological intervention in the implementation of atraumatic care for hospitalized children. These findings can serve as a basis for the development of evidence-based nursing in pediatric nursing services and support the optimal implementation of atraumatic care in pediatric wards.

Keywords: *Anxiety, Atraumatic Care, Medical Play, Hospitalization, Preschool Children*

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INTRODUCTION

Hospitalization of preschool-aged children remains a significant issue in pediatric healthcare because it can have significant physical and psychological impacts. Preschool-aged children have immature adaptive abilities, making them more susceptible to anxiety, fear, stress, and trauma during hospitalization. The unfamiliar hospital environment, invasive procedures, the sounds of medical equipment, and separation from parents often cause emotional distress that impacts a child's comfort and healing process. Hospitalization can also lead to behavioral changes such as crying, refusal of medical treatment, difficulty sleeping, and even aggressive behavior toward healthcare professionals (Godino-Iáñez et al., 2020). Psychological issues during hospitalization are a global concern because they impact the quality of pediatric healthcare. Research by Lopes-Júnior et al., (2020) explains that children undergoing invasive medical procedures are at higher risk of experiencing anxiety, distress,

and fear during hospitalization. Furthermore, Dalei & Nayak, (2020) found that 75% of hospitalized preschool children experience moderate anxiety and 20% experience severe anxiety. The high prevalence of anxiety indicates that children's psychosocial needs during hospitalization are still not fully met.

In Indonesia, anxiety about hospitalization in children is still frequently encountered in pediatric practice. Children experiencing anxiety tend to exhibit uncooperative behavior, making medical procedures more difficult. This condition can prolong the duration of procedures and increase stress for both the child and the family. Sari et al., (2021) explained that most preschool children undergoing hospitalization exhibit moderate to severe anxiety due to fear of medical procedures and the unfamiliar hospital environment. This situation indicates the need for interventions that can effectively reduce the trauma of hospitalization in children. In pediatric nursing practice, the concept of atraumatic care is an important approach to minimizing the negative impact of hospitalization on children and families. Atraumatic care is a form of therapeutic care that aims to prevent or reduce physical and psychological trauma during the healthcare process. This approach emphasizes stress reduction, pain relief, family support, and the use of interventions appropriate to the child's developmental stage. Ilmiasih & Ningsih, (2022) explain that the application of atraumatic care can help reduce anxiety and increase children's comfort during hospitalization.

One form of atraumatic care intervention widely used in pediatric care is medical play, or therapeutic play. Medical play involves play activities that utilize toy medical equipment, medical dolls, storytelling, role-play, and simulated medical procedures to help children understand treatment procedures and the hospital environment. Play is an effective approach for preschoolers because they learn through concrete and symbolic activities. Rashid et al., (2021) explain that pretend medical play effectively helps children build positive experiences with healthcare, increases health knowledge, and reduces anxiety related to medical procedures.

In addition to helping children understand medical procedures, medical play also benefits their emotional development. Veraksa et al., (2025) explain that pretend play helps improve emotional regulation, coping skills, and psychological resilience in early childhood. Play activities provide opportunities for children to safely express negative emotions and help them gain a sense of control over situations previously considered frightening. Therefore, medical play has the potential to be an effective intervention to reduce fear and trauma of hospitalization in preschool children.

Various studies have shown that play interventions are effective in reducing anxiety and psychological distress in hospitalized children. Díaz-Rodríguez et al., (2021) in a systematic review found that therapeutic play can reduce anxiety, pain, and negative behavior in children during hospitalization. Research Ayaz & Doğmuş, (2025) also showed that child-centered play therapy is effective in reducing various forms of anxiety in early childhood. Furthermore, Lopes-Júnior et al., (2020) found that therapeutic play and distraction approaches can help improve children's psychological well-being during medical procedures. Although the benefits of therapeutic play have been widely studied, research related to medical play as an atraumatic care approach still has several limitations. Some studies focus only on one outcome, such as anxiety or pain, without evaluating other outcomes such as hospitalization trauma, fear, hospitalization stress, and children's cooperative behavior. Furthermore, variations in intervention methods, play media, and sample characteristics result in heterogeneity in available research results. Rashid et al., (2021) explained that most studies on medical play still use small sample sizes and diverse research designs, so a more comprehensive evidence synthesis is needed.

Previous research has focused more on general therapeutic play than on medical play, which specifically uses medical device simulations and role-plays of health procedures. However, medical play has unique characteristics because it directly introduces children to the medical procedures they will undergo. To date, there is limited research specifically synthesizing the effectiveness of medical play on reducing anxiety, hospitalization stress, fear, hospitalization trauma, and increasing cooperative behavior in hospitalized preschool children. This research gap indicates the need for studies that can provide the latest evidence regarding the effectiveness of medical play in the context of atraumatic care. Based on this description, this study aims to analyze the effectiveness of medical play interventions as

an atraumatic care approach for hospitalized preschool children. The focus of the study includes the effect of medical play on reducing anxiety, fear, hospitalization stress, hospitalization trauma, and increasing children's cooperative behavior during hospitalization. The research question in this study is "How effective is the medical play intervention as an atraumatic care approach for hospitalized preschool children?"

METHODS

This research design used a Systematic Literature Review (SLR) approach with secondary data sources obtained from primary research results on the effectiveness of medical play interventions as an atraumatic care approach for hospitalized preschool children. Articles were collected from several international scientific databases, namely PubMed, Scopus, and ScienceDirect with a publication period of 2020–2025. The search strategy was carried out using a combination of Boolean operators, namely: ("medical play" OR "therapeutic play" OR "pretend play") AND ("atraumatic care" OR "hospitalization anxiety") AND ("preschool children" OR "hospitalized children" OR "pediatric patients"). The literature search process followed the PRISMA 2020 (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure transparency, systematicity, and traceability of the article selection process (Page et al., 2021).

The inclusion criteria for this study included articles published between 2020 and 2025 in both English and Indonesian. The selected articles were primary studies with quantitative designs, such as randomized controlled trials (RCTs), quasi-experimental studies, and cohort studies, that examined the effectiveness of medical play or therapeutic play interventions for hospitalized preschool children. Included studies had to address outcomes related to reducing anxiety, fear, hospitalization stress, hospitalization trauma, or improving children's cooperative behavior during hospitalization. Articles available in full-text format and containing clear research data were considered eligible for analysis in this study.

Articles excluded from this study included systematic reviews, meta-analyses, literature reviews, editorials, and articles not available in full-text format. Qualitative research was also excluded from the analysis. Furthermore, articles that did not specifically address preschool-aged children, did not use medical play interventions, or did not address outcomes related to anxiety, hospitalization trauma, fear, and cooperative behavior in children were also excluded. These exclusions were made to ensure that the articles analyzed were directly relevant to the study's objectives.

Medical play defined as a therapeutic play intervention that uses toy medical devices, medical dolls, storytelling, role play, or simulations of medical procedures to help children understand health care procedures; Atraumatic care is a nursing service approach that aims to minimize physical and psychological trauma in children during hospitalization; Hospitalization anxiety interpreted as an emotional response in the form of anxiety, fear and distress experienced by children due to the hospital environment and medical procedures; Cooperative behavior is the child's ability to cooperate during medical or nursing procedures without excessive resistance.

Hospitalization trauma is a negative psychological impact resulting from the experience of hospitalization, which is shown through fear, distress, refusal of treatment, or changes in the child's behavior during treatment.

The article selection process was conducted using the PRISMA 2020 flowchart, which includes the identification, screening, eligibility, and inclusion stages. The quality of research articles was assessed using the Critical Appraisal Skills Programme (CASP) Checklist for Quantitative Studies to assess methodological validity, clarity of research objectives, design accuracy, and the relevance of research results (Moola et al., 2020).

Data from articles meeting the inclusion criteria were analyzed descriptively and narratively using the thematic narrative synthesis method. The analysis was conducted by grouping the study results based on the type of medical play intervention and the main outcomes, such as anxiety, fear, hospitalization stress, hospitalization trauma, and children's cooperative behavior. Findings from each study were compared to identify similarities, differences, and consistency of results across studies. This

approach was used to synthesize evidence regarding the effectiveness of medical play as an atraumatic care approach for hospitalized preschool children.

RESULTS

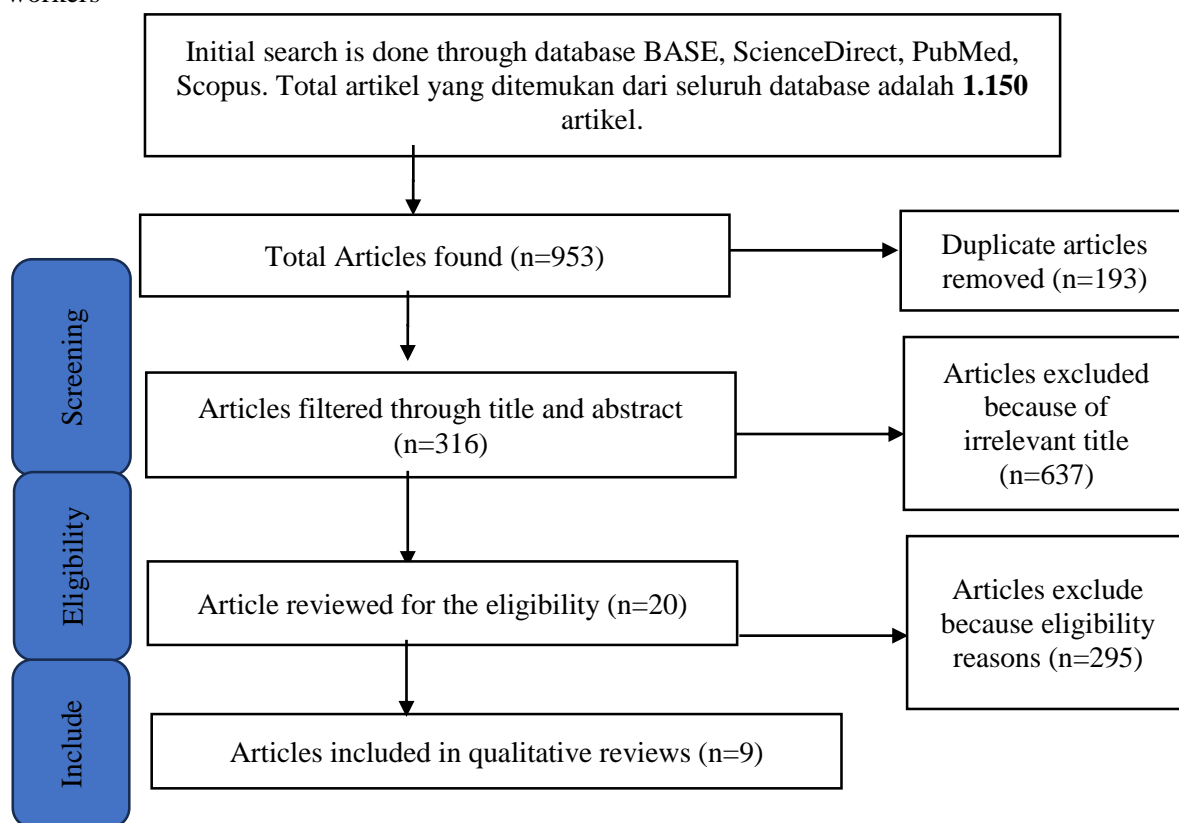
A primary article search was conducted through three online databases: PubMed, Scopus, and ScienceDirect, resulting in a total of 245 articles. After the duplication process, 168 unique articles remained. The title and abstract screening process yielded 34 articles relevant to the research topic. Eligibility was then assessed based on full text and quality using the CASP Checklist for Quantitative Studies. The assessment results indicated that 9 articles met all inclusion criteria and were included in the final review. The 9 selected articles came from various countries, including Turkey, India, Iran, Hong Kong, Italy, and Indonesia. The research designs used included randomized controlled trials (RCTs), quasi-experimental studies, pilot studies, and comparative studies, with sample sizes ranging from 20 to 304 respondents. The study population included preschool-aged children and hospitalized children undergoing various medical procedures in hospitals. All studies evaluated the effectiveness of medical play, therapeutic play, storytelling, pretend play, and nurse-led play interventions on various psychological outcomes in children, such as anxiety, fear, hospitalization distress, psychological trauma, and cooperative behavior during treatment. Overall, all articles showed consistent results indicating that medical play interventions had a positive impact on the emotional and behavioral well-being of hospitalized children.

The Effect of Medical Play on Reducing Anxiety and Fear. Most studies show that medical play and therapeutic play are effective in reducing anxiety and fear in hospitalized preschool children. Research by Li et al., (2016) showed that hospital play interventions can reduce anxiety and negative emotions in children during hospitalization. Similar results were found by Dalei & Nayak, (2020), who showed a significant decrease in anxiety levels in hospitalized children after being given play therapy and art therapy. Furthermore, research by Çelik & Şahiner, (2024) showed that therapeutic play before surgery effectively reduced preoperative anxiety and fear in preschool children. Research by Kiliç Çetin & Coşkun Şimşek, (2025) also found that therapeutic play in children undergoing high-flow nasal cannula oxygen therapy significantly reduced fear, anxiety, and behavioral distress. Overall, most of the studies in this review indicate that therapeutic play interventions help children adapt to the hospital environment and reduce the perceived threat of medical procedures.

The Effect of Medical Play on Hospitalization Trauma and Psychological Distress. Several studies have shown that medical play plays a crucial role in reducing hospitalization trauma and psychological distress in children. Research by Delvecchio et al., (2019) demonstrated that pretend play helps improve children's coping and reduces psychological stress resulting from hospitalization. Similar results were found in research by Yildirim et al., (2024), which showed that the use of play medical devices effectively reduced children's trauma and anxiety regarding hospital procedures. Furthermore, research by Zengin et al., (2020) demonstrated that therapeutic play in children after liver transplantation reduced emotional distress and fear during treatment. Research by Koukourikos et al., (2015) also demonstrated that therapeutic play helps children reduce hospitalization trauma by increasing their sense of security and adaptability to the hospital environment. These findings suggest that medical play not only reduces anxiety but also helps improve children's overall psychological well-being during hospitalization.

The Influence of Medical Play on Children's Cooperative Behavior. Several studies in this review indicate that medical play can improve children's cooperative behavior during medical and nursing procedures. Research by Abdi et al., (2025) showed that play therapy and storytelling helped improve children's cooperation during medical procedures in the hospital. Children who received play interventions tended to be calmer and more cooperative with healthcare workers than those in the control group. Similar results were found by Benazeera & Aranha, (2025), who showed that nurse-led play interventions effectively improved children's cooperative behavior during invasive procedures. Furthermore, Li et al., (2016) also reported that hospital play interventions helped improve children's behavior during treatment and their ability to follow healthcare workers' instructions. Overall, the research results indicate that medical play has a positive impact on children's adaptation during

hospitalization, making nursing care more effective and comfortable for both children and healthcare workers



Picture 1. PRISMA flow chart diagram

Table 1. Critical appraisal skills program of the article

Primary Article	1	2	3	4	5	6	7	8	9	10	11	Total
Li et al. (2016)	2	2	2	2	2	2	2	2	2	2	2	22
Abdi et al. (2025)	2	2	2	2	2	2	2	2	2	2	2	22
Dalei & Nayak (2019)	2	2	2	2	2	2	2	2	2	2	2	22
Benazeera & Aranha (2025)	2	2	2	2	2	2	2	2	2	2	2	22
Delvecchio et al. (2019)	2	2	2	2	2	2	2	2	2	2	2	22
Çelik & Şahiner (2024)	2	2	2	2	2	2	2	2	2	2	2	22
Kiliç Çetin & Coşkun Şimşek (2025)	2	2	2	2	2	2	2	2	2	2	2	22
Yıldırım, Sevinç Akin, & Akin (2024)	2	2	2	2	2	2	2	2	2	2	2	22
Zengin, Yayan, & Düken (2020)	2	2	2	2	2	2	2	2	2	2	2	22
Li et al. (2016)	2	2	2	2	2	2	2	2	2	2	2	22
Abdi et al. (2025)	2	2	2	2	2	2	2	2	2	2	2	22

Question Description:

1.Does this research address a clear and focused issue?; 2.Were research subjects recruited in an acceptable manner?; 3.Is exposure measured accurately to minimize bias?; 4.Are outcomes measured accurately to minimize bias?; 5.Have the authors identified all important confounding factors?; 6.Have these confounding factors been taken into account in the study design and/or analysis?; 7.Was follow-up of research subjects carried out sufficiently comprehensively?; 8.Is the follow-up period long enough to assess the research results?; 9.Do you believe the results of this study?;10.Can the results of this study be applied to local populations?; 11.Are the results of this study consistent with other available evidence?. Evaluation Criteria: No (No) = 0; Unclear = 1;Yes = 2.

Author (Year)	Country	Sample	P (Population)	I (Intervention)	C (Comparison)	O (Outcome)
Li et al. (2016)	Hong Kong	304 children aged 3–12 years	Children who are hospitalized	Hospital play intervention dan medical play	Usual care	Decreased anxiety, negative emotions, and more cooperative behavior
Abdi et al. (2025)	Iran	75 children aged 3–10 years	Hospitalized children	Play therapy dan storytelling	Control group	Decreased anxiety and increased cooperation during treatment
Dalei & Nayak (2019)	India	60 preschool children	Preschooler hospitalized	Play therapy	Art therapy	Decrease in emergency hospitalizations
Benazeera & Aranha (2025)	India	120 children	Children who are hospitalized	Nurse-led play intervention	Standard care	Reduction of anxiety, fear, and distress of hospitalization
Delvecchio et al. (2019)	Italy	100 children	Children with hospitalization experience	Pretend play assessment	Non-hospitalized children	Reducing psychological stress and increasing children's coping
Çelik & Şahiner (2024)	Türkiye	37 children aged 3–6 years	Preoperative preschool children	Therapeutic play	Routine care	Reduction of fear and preoperative anxiety
Kilic Cetin & Coskun Simsek (2025)	Türkiye	Hospitalized children	Children with HFNC actions	Therapeutic play	Standard care	Decreased fear, anxiety, and behavioral distress
Yildirim, Sevinç Akin, & Akin (2024)	Türkiye	Hospitalized children	Children who are hospitalized	Medical play using toy medical equipment	Routine care	Reduction of anxiety and trauma towards medical procedures
Rich, Yayan, & Duke (2020)	Türkiye	65 children	Child after liver transplant	Therapeutic play/play therapy	Pre-intervention condition	Reduction of fear, anxiety, and distress of hospitalization
Li et al. (2016)	Hong Kong	304 children aged 3–12 years	Children who are hospitalized	Hospital play intervention dan medical play	Usual care	Decreased anxiety, negative emotions, and more cooperative behavior
Abdi et al. (2025)	Iran	75 children aged 3–10 years	Hospitalized children	Play therapy dan storytelling	Control group	Decreased anxiety and increased cooperation during treatment

DISCUSSION

The Effect of Medical Play on Reducing Anxiety in Hospitalized Children. Hospitalization in preschool-aged children often causes anxiety due to the unfamiliar hospital environment, invasive procedures, and separation from family. These conditions can affect the child's emotional response during treatment. Within the concept of atraumatic care, medical play is used as a therapeutic approach to reduce psychological distress through developmentally appropriate play activities. The results of this article synthesis indicate that most studies report medical play as effective in reducing anxiety in hospitalized children. Research by Li et al., (2016) demonstrated that hospital play intervention significantly reduced anxiety and negative emotions compared to the usual care group. Children who received play intervention also exhibited calmer behavior and were more cooperative during medical procedures.

These findings align with research by He et al., (2021) which found that therapeutic play before surgical procedures significantly reduced children's preoperative anxiety. The study explained that simulating medical procedures through play helps children understand the actions to be performed, thereby reducing fear of uncertainty. These findings support cognitive appraisal theory, which explains that an individual's perception of threat is influenced by their ability to understand the situation at hand. When children understand medical procedures through play, the perception of threat decreases, resulting in lower anxiety levels. Research by Çelik & Şahiner, (2024)) also showed that therapeutic play effectively reduced fear and preoperative anxiety in children aged 3–6 years before surgery. Children who underwent simulated medical procedures through play showed lower anxiety scores than the control group. Play activities help children gain a sense of control over the hospitalization experience, which was previously considered frightening. These findings reinforce Erikson's developmental theory of the initiative versus guilt stage, where preschoolers need exploratory activities to build self-confidence and the ability to control their surroundings.

Research by Dalei & Nayak, (2020) shows that play therapy is effective in reducing hospitalization anxiety in preschool children. Children who received play therapy experienced a significant reduction in anxiety after the intervention. This study explains that play activities provide a positive distraction that helps children divert their attention from fear of medical procedures and the hospital environment. These findings are supported by Aryani & Zaly, (2021) who found that coloring play therapy is effective in reducing hospitalization anxiety in preschool children. Play activities help children express emotions more adaptively, thereby reducing psychological stress. The results of research by Abdi et al., (2025) show that play therapy and storytelling are both effective in reducing anxiety in children hospitalized, but storytelling has a greater effect than play therapy in some age groups. This difference is likely influenced by children's cognitive development. School-age children have better verbal and imaginative abilities, making it easier to understand the storytelling approach than concrete play. Furthermore, research by Musviro et al., (2023) also found that storytelling therapy can improve children's emotional comfort during hospitalization.

The Effect of Medical Play on Fear and Trauma of Hospitalization. Fear and trauma from hospitalization are psychological impacts that often arise during hospitalization. Fear is usually related to invasive procedures, pain, and the use of previously unseen medical equipment. Synthesis results indicate that therapeutic play is effective in reducing fear and emotional trauma in hospitalized children. Research by Kiliç Çetin & Coşkun Şimşek, (2025) found that therapeutic play can reduce fear, anxiety, and behavioral distress in children undergoing high-flow nasal cannula oxygen therapy. Children who were given play media such as amigurumi toys and illustration cards showed more stable emotional responses than the control group. These findings align with research by Kırkan & Kahraman, (2023)), which showed that using a toy nebulizer and toy mask before nebulization significantly reduced children's fear and anxiety. Children who are familiar with medical equipment through play adapt more easily to actual medical procedures. This supports the desensitization theory, which explains that gradual exposure to frightening stimuli can gradually reduce fear responses. Thus, medical play helps children develop positive experiences with medical equipment and procedures.

Research by Yildirim et al., (2024) also shows that toys made from medical materials effectively reduce anxiety and trauma related to medical procedures. Children become more familiar with medical

equipment because they have seen and played with them before the procedure. This finding is supported by Veraksa et al., (2025) who explain that pretend play and symbolic play help improve emotional regulation and reduce fear in preschool-aged children. Play provides opportunities for children to express negative emotions safely and in a controlled manner. Research by Zengin et al., (2020) shows that therapeutic play in children after liver transplantation can significantly reduce fear and distress of hospitalization. Children undergoing complex medical procedures require greater emotional support due to the higher risk of psychological trauma. Play activities help children express negative emotions and improve their ability to adapt to the hospital environment. These findings are reinforced by Topal et al., (2025) who found that therapeutic play-based interventions can improve the psychosocial well-being of preschool children after experiencing traumatic experiences.

The Influence of Medical Play on Children's Cooperative Behavior. In addition to reducing anxiety and fear, medical play also increases children's cooperative behavior during medical procedures. Hospitalized children often exhibit behaviors of refusing treatment, crying, or rebelling due to fear of the medical procedures. The results of this study indicate that medical play helps children understand procedures, making it easier for them to cooperate with healthcare professionals. Research by Li et al., (2016) showed that children who received hospital play intervention exhibited more cooperative behavior than those in the usual care group. These findings are supported by Benazeera & Aranha, (2025) who demonstrated that nurse-led play interventions can reduce medical fear and increase cooperation during intravenous procedures. Children who were given picture books and board games before the procedure showed calmer and less rebellious behavior during the procedure. The study explained that play interventions help build children's trust in healthcare professionals, making them more receptive to nursing interventions.

Research by Delvecchio et al., (2019)) found that pretend play improves coping strategies in hospitalized children. Children who are able to express emotions through play demonstrate better adaptation skills during treatment. These findings are supported by Nazari et al., (2025) who explain that play therapy helps children build better communication with healthcare professionals and caregivers during hospitalization. Thus, medical play not only serves as a temporary distraction but also helps improve children's coping and adaptation skills to the hospitalization experience. Research by also showed that play therapy effectively improved cooperative behavior in children aged 4–6 years during hospitalization. Children who received play interventions showed lower levels of resistance to nursing interventions compared to those who did not receive the intervention. This suggests that medical play can improve the effectiveness of nursing services by allowing medical procedures to be performed more smoothly and with minimal behavioral barriers.

Strength of Evidence, Heterogeneity, and Methodological Limitations. The findings synthesized in this systematic literature review generally support the effectiveness of medical play interventions in reducing anxiety, fear, hospitalization-related distress, and improving cooperative behavior among hospitalized preschool children. The consistency of positive findings across most included studies strengthens the overall evidence supporting the use of medical play as an atraumatic care strategy. Studies conducted in different countries and clinical settings reported similar beneficial outcomes, suggesting that medical play may be applicable across diverse pediatric healthcare contexts (Li et al., 2016; Çelik & Şahiner, 2024; Yildirim et al., 2024; Abdi et al., 2025). Despite these positive findings, considerable heterogeneity was observed among the included studies. Variations existed in the type of intervention, including therapeutic play, storytelling, pretend play, nurse-led play interventions, and medical toy simulations. Differences were also identified in sample characteristics, hospital settings, intervention duration, and outcome measurement instruments. Such variability may contribute to differences in the magnitude of intervention effects and limits direct comparisons across studies (Zengin et al., 2020; Yildirim et al., 2024; Abdi et al., 2025).

Several methodological limitations were also identified within the reviewed studies. Although some studies employed randomized controlled trial designs, others used quasi-experimental approaches or smaller sample sizes, which may increase the risk of bias and limit the generalizability of findings. Furthermore, outcome measures were not standardized across studies, making comparisons between studies more challenging. Most studies focused on short-term outcomes during hospitalization, while

evidence regarding the long-term psychological impact of medical play remains limited. These methodological issues should be considered when interpreting the findings of this review and are consistent with recommendations for critical appraisal in evidence synthesis studies (Moola et al., 2020; Page et al., 2021). Future research should employ multicenter randomized controlled trials with larger sample sizes, standardized intervention protocols, and validated outcome measures. Longitudinal follow-up studies are also needed to evaluate the sustainability of the psychological benefits of medical play interventions beyond the hospitalization period.

Clinical Implications in the Implementation of Atraumatic Care. The synthesis of various studies shows that medical play is an effective non-pharmacological intervention in reducing anxiety, fear, and trauma from hospitalization, as well as increasing children's cooperative behavior during treatment. This intervention is relatively simple, safe, and easy to implement in pediatric nursing services. Therefore, medical play can be incorporated into routine atraumatic care practices in pediatric wards. Clinically, hospitals need to provide therapeutic play media such as medical dolls, toy medical equipment, interactive storybooks, and children's playrooms to support pediatric-friendly hospital services. Pediatric nurses also need training in therapeutic play to ensure interventions are tailored to the child's developmental stage. Research by Godino-Iáñez et al., (2020) shows that therapeutic play has a positive impact on children's behavior, anxiety, and hospitalization experiences, and is therefore recommended as part of evidence-based pediatric nursing practice.

Furthermore, family involvement during medical play needs to be increased, as parental emotional support has been shown to strengthen the effectiveness of interventions. Research by Rodrigues et al., (2017) showed that family-centered therapeutic play helps improve children's sense of security and emotional adaptation during hospitalization. Children accompanied by their parents during play showed a greater reduction in anxiety than children without family support. This study has several limitations. Some articles used small samples and were conducted in only one hospital, thus limiting the generalizability of the results. Variations in intervention types, play duration, and measurement instruments also contributed to heterogeneity in the results. Therefore, further research is recommended using randomized controlled trials with larger sample sizes and a specific focus on preschool-aged children. Evaluation of the long-term effects of medical play on post-hospitalization psychological trauma is also needed to more comprehensively demonstrate the effectiveness of the intervention.

CONCLUSION

The results of the Systematic Literature Review indicate that medical play intervention is effective as an atraumatic care approach for hospitalized preschool children. Medical play has been shown to reduce anxiety, fear, hospitalization stress, and psychological trauma, as well as increase children's cooperative behavior during hospitalization. These findings suggest that a play approach can help children understand medical procedures and improve coping skills during hospitalization. The implications of this study indicate that medical play can be implemented as a non-pharmacological nursing intervention in pediatric services to support the implementation of atraumatic care. Hospitals and healthcare professionals need to provide therapeutic play media and improve nurses' competencies in implementing therapeutic play for hospitalized children. This study has limitations in the form of variations in research design, type of intervention, and sample size in the synthesized articles, resulting in heterogeneity in the results. Therefore, further research is recommended to use a research design with more standardized methods and a larger sample size to obtain stronger evidence regarding the effectiveness of medical play for hospitalized children.

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