



## The Role of Paediatric Nurse to Enhance Atraumatic Care for Hospitalised Children: Literature Review

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### Abstract

**Introduction:** Children are a gift and a gift from God who will become the foundation and future of the nation. Sick children in Indonesia currently vary greatly from both acute and chronic illnesses. This literature review aims to analyse the role of paediatric nurses in atraumatic care for hospitalised children. **Methods:** Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) scheme used in this study to describe search strategy. The researcher conducted a search using electronic databases as follows Google Scholar, PubMed, Scopus, DOAJ. The PICO format was used in the literature search process for this review which includes terminology "Hospitalised Children", "Children", "Paediatric Patients", "Atraumatic Care", "Atraumatic Care Therapy", "Atraumatic Approach" led by "Paediatric nurse", "Nurse Paediatric", "Reduce Pain", "Reduce Anxiety", "Comfort", "Reduce Stress". The author conducted a search based on inclusion criteria consisting of 1. The role of Paediatric Nurses, 2. Atraumatic care in sick children, 3. Hospitalised sick children, 4. Journal articles and manuscripts. The exclusion criteria in this search are 1. Articles with a year limit of less than 2020; 2. Articles not in English. **Results:** In the process of finding journals in search engines, it was found that there were around 983 research journals related to the theme. The author determined several themes for further discussion, namely psychosocial care (the role of paediatric nurse), hospitalised children, family support management, and atraumatic care management. It is hoped that paediatric nurses can improve parenting models for hospitalised children. In both primary and secondary care, the biopsychosocial model was incorporated. In primary care, local child health teams consisting of general practitioners, paediatricians, and paediatric nurses coordinated care with community paediatricians, health visitors, and school health, social work, and mental health services. Apart from that, nurses also play a role in providing therapeutic play, which can reduce anxiety levels in children. The use of Trace Image and Coloring for Kids-Book (TICK-B), AI-based technology, especially Virtual Reality, both passive and active Ventriloquist nursing intervention, are also an alternative choice in providing nursing care. **Conclusion:** Nurses who play a role in integrated care services are provided to hospitalised children who are hospitalised.

**Keywords:** Atraumatic Care; Hospitalised Children; Paediatric Nurse

### Introduction

Children are a gift or gift from the Almighty to parents so that in this case children really need adults and the surrounding environment to fulfill all facilities to fulfill basic needs until the child learns to be

independent. Parents feel that children are the most important part of their lives so that when something happens that makes the child cry, feel sick, and any experience that disrupts the child's life, the parents also feel anxious or stressed (Hatzigianni *et al.*, 2023)

In Indonesia, the rate of hospitalization in children is estimated at 5-10% each year. The child population accounts for 5-10% of the 1.14 million or 57,000 to 114,000 children who are hospitalised each year either due to acute or chronic illnesses (Hemram, Ghosh & Annigeri, 2021).

The current health care system for children is prepared to treat both acute and chronic diseases but is still not optimal in the care and treatment process. A holistic approach to children currently prioritises aspects that use collaborative parenting, including physical health, behavior, development and the environment. This holistic approach emphasises collaboration between the family and multiple health practitioners. Children have open discussions with their families about mental health, nutrition, immunizations and parenting practices (Kyle, 2008). This integrated parenting model is a solution in the holistic childcare process. In holistic health care, the care system pays attention to all aspects of health, namely body, mind and soul. This model of care has an impact on reducing trauma in children.

Atraumatic care is a therapeutic service to minimise trauma caused by both psychological and psychological impacts due to the impact of treatment in hospitals, nursing homes or carrying out treatment at home. As a paediatric nurse, it is important to be especially alert to any situations that can cause distress and to be able to identify potential stressors. Nursing care is quite important to reduce stressors for children in environments that are exposed to hospital situations and conditions (Lee *et al.*, 2021).

Atraumatic care is provided by health workers, including nurses and doctors, who are trained to prepare children for treatment procedures that can cause pain. Utilising the Paediatric Nurse is training that consists of non-medical preparation for surgery and other medical procedures; support during medical procedures, play therapy, activities to provide support for growth and development, sibling support, advocacy for the family, special interventions in the emergency room, hospital tours before procedures are carried out. Children who experience the effects of hospitalization who are not given good atraumatic care management will have an impact on stress on the child, both physically, psychologically, and trauma for the child, family and also for health workers.

The aim of carrying out paediatric nurses is to reduce the level of trauma in children, especially anxiety and fear in children in order to increase understanding in children. Atraumatic care is part of holistic nursing care to reduce the level of pain and motility rates in children with chronic illnesses. Based on data from the Central Statistics Agency (BPS) for 2016-2018, the number of children aged 0-4 years who were hospitalised in 2018 was 6.22%, and those aged 5-9 years were 2.89% of the total population of Indonesia. In Central Java Province, child hospitalisation is 4.1% of the population, the highest percentage of children who have been hospitalised are in urban areas compared to rural areas. Paediatric Nurse, The Role Paediatric Nurse is a model in the process of implementing atraumatic care.

### **Objective of study**

The aim of this research is to review and discuss the role of nurses in their role in carrying out atraumatic care for hospitalised children as well as to improve critical thinking in atraumatic care.

### **Methodology**

#### **Search Strategy**

This study used a method with the PRISMA scheme (Preferred, Reporting, Items for Systematic Reviews, and Meta-Analyses) to describe the search strategy, article feasibility, and included articles that will be analysed in this research. The search process is shown in the flowchart in Figure 1.

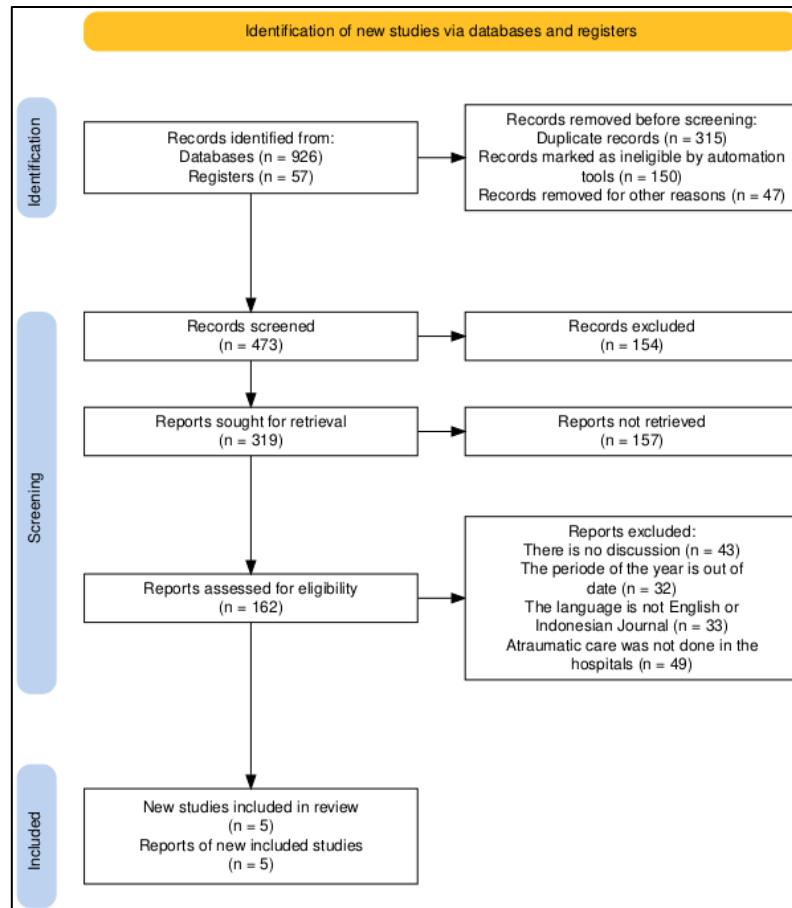


Figure 1: PRISMA Table

### Identify the Research Question

Researchers prepared research questions using the PICO format, namely Population, Intervention, Comparison, Outcome (PICO). This format is attached to Table 1. The guiding research question in this literature review is "what is the role of paediatric nurses to enhance atraumatic care for hospitalised children?".

Table 1: PICO Format

PICO	Mesh	Database
Population	"Hospitalied Children" OR, "Children" OR, "Paediatric Patients"	Pubmed, Scopus, DOAJ, Google Scholar
Intervention	"Atraumatic Care" OR "Atraumatic Care Theraphy", "Atraumatic Approach" led by "paediatric nurse" OR "Nurse Paediatric"	
Comparison	No comparison	
Outcomes	"Redue Pain" AND "Reduce Anxiety", "Comfort", Reduce Stress"	

### Searching Literature

The author conducted a strategy in identifying references using relevant keywords and terminology that were in accordance with the research questions. In addition, the researcher conducted a search using electronic databases as follows Google Scholar, PubMed and the National Centre for Biotechnology Information, Scopus, DOAJ. The author conducted a search using keywords or terminology including "Paediatric Nurse", "Atraumatic Care" and "Hospitalised Children". In the process of searching for journal articles, the author conducted a search based on inclusion criteria consisting of 1. The role of Paediatric Nurses; 2. Atraumatic care in sick children; 3. Hospitalised sick children; 4. Journal articles and manuscripts.

The exclusion criteria in this search are 1. Articles with a year limit of less than 2020; 2. Articles not in English. There are 983 articles that were searched in this literature review process. In this study, researchers criticised 6 articles based on search results.

### **Data Extraction**

In data extraction, the author entered it into an electronic spreadsheet so that the data extraction process could be managed well. The data extraction process consists of: (1) Author; (2) year of research, (3) researcher's country of origin, (4) objectives, (5) methods, (6) results.

### **Results**

In Table 2, the author analyses the article which includes title, author's name, year, method, objectives and results. There are 5 articles reviewed by the author, including the first article entitled "The Effect of the Children and Young People's Health Partnership Model of Paediatric Integrated Care on Health Service Use and Child Health Outcomes: a pragmatic two-arm cluster randomised controlled trial"; the second article entitled " Effectiveness of pop-it therapeutic play on children's anxiety during inhalation therapy in children's wards", the third article entitled "Efficacy of Smartphone Active and Passive Virtual Reality Distraction vs Standard Care on Burn Pain Among Paediatric Patients" , the article The next theme is "The effect of non-verbal music on anxiety in hospitalised children". The fifth article is Ventriloquist intervention prepared with drama technique in reducing pain, anxiety and fear in children during invasive procedures. The sixth article is Effectiveness of art-based distraction on reducing paediatric patients' pain and anxiety during venipuncture: A randomised controlled trial

**Table 2: Article Review Table**

Author and Title	Country	Objective	Method	Result
Wolfe <i>et al.</i> , (2023) The effect of the children and young people's health partnership model of paediatric integrated care on health service use and child health outcomes: A pragmatic two-arm cluster randomised controlled trial	London, United Kingdom	Compare the impact of an integrated health-care approach that provides early intervention, care for children and young people with specific conditions, and local health clinics for general paediatric issues with that of an enhanced usual care model.	The randomised controlled trial, with the total trial population 97 970 children and 23 general practice clusters,  The CYPHP model comprised all elements of EUC (electronic decision support, a primary care hotline, health checks, self-management support and health promotion, and resilience building and mental health first aid) plus local child health clinics delivered by paediatricians and general practitioners, and a nurse-led early intervention service for children with tracer conditions (asthma, eczema, and constipation).	There is no effect, at the population level, of CYPHP versus EUC on non-elective admissions during the intervention period (adjusted mean incidence rate ratio [IRR] 1.00 [95% CI 0.91 to 1.10], $p=0.99$ ). Among children with tracer conditions, there is no difference in paediatric quality of life (PedsQL score) at 6 months (adjusted mean difference $-0.033$ [95% CI $-0.122$ to $0.055$ ], $p=0.46$ ). Quality of asthma care significantly improved among children in the CYPHP group compared with children in the EUC group. No significant improvement was seen for all other secondary outcomes.
Bawaeda, Wanda and Aprillia, (2023) Effectiveness of pop-it therapeutic play on children's anxiety during inhalation therapy in children's wards	Indonesia	to assess how well pop-it therapeutic play affects kids' anxiety levels while receiving inhalation therapy in paediatric wards.	a randomised control trial involving 66 children aged 1–12 years. The respondents were divided into intervention and control groups. The samples were selected using simple random sampling. Anxiety level was assessed using the Visual Facial Anxiety Scale.	playing pop-it effectively reduced children's anxiety levels during inhalation therapy, with a $p$ value of 0.000 ( $\alpha < 0.05$ ). Therefore, playing pop-it is the right solution for children who receive inhalation therapy and is recommended as an alternative toy in hospitals. This finding can be applied in children who receive inhalation therapy because it is easy to do, efficient and effective controlling the children's anxiety.
Xiang <i>et al.</i> (2021) Efficacy of smartphone active and passive virtual reality distraction vs standard care on burn pain among paediatric patients: A randomized clinical trial.	America	To evaluate the efficacy of a smartphone VR game on dressing pain among paediatric patients with burns.	This randomised clinical trial included children aged 6 to 17 years who seen in the outpatient clinic of a large American Burn Association–verified paediatric burn center and level I paediatric trauma center Patients self-reported pain using a visual analog scale (VAS; range, 0-100).	A total of 90 children. Most children had second-degree burns (81 [90%]). Participants in the active VR group had significantly lower reported overall pain (VAS score, 24.9 [95% CI, 12.2-37.6]) compared with participants in the standard care control group (VAS score, 47.1 [95% CI, 32.1-62.2]; $P=.02$ ). The active VR group also had a lower worst pain score (VAS score, 27.4 [95% CI, 14.7-40.1]) than both the passive VR group (VAS score, 47.9 [95% CI, 31.8-63.9]; $P=.04$ ) and the

				standard care group (VAS score, 48.8 [95% CI, 31.1-64.4]; $P = .03$ ).
Hakim <i>et al.</i> (2023) The effect of non-verbal music on anxiety in hospitalized children	Iran	This study aimed to determine the effect of non-verbal music on anxiety in hospitalised children.	In this study, 52 hospitalised children aged 6 to 12 years were randomly divided into Test and control groups. Research data collection tools included the Spielberger questionnaire to assess the level of anxiety in children.	The trend of changes in anxiety score was measured for three consecutive days and vital signs except body temperature decreased significantly in the test group ( $P \leq 0.01$ ).
Tuncay & Sarman (2024) Ventriloquist intervention prepared with drama technique in reducing pain, anxiety and fear in children during invasive procedures	Eastern Turkey	This study aimed to investigate the effects of a ventriloquist nursing intervention, incorporating drama techniques, on pain, anxiety, and fear experienced by children aged 5 to 10 years undergoing painful medical procedures.	This study randomised controlled trial. This study involving a total of 72 children. Pain, anxiety, and fear levels were assessed before, during, and after intravenous cannula insertion.	Children in the ventriloquist group ultimately showed reduced levels of discomfort, anxiety, and fear in the post-procedure period as compared to the control group ( $p < 0.05$ ). (Tuncay & Sarman, 2024)
Suleman <i>et al.</i> (2022) Effectiveness of art-based distraction on reducing paediatric patients' pain and anxiety during venipuncture: A randomized controlled trial	Germany	This study evaluates the effectiveness of TICK-B in reducing the level of pain and anxiety of children during venipuncture procedures. We hypothesised that children who receive TICK-B would have considerably lower levels of pain and anxiety.	In this parallel randomised control trial, children aged 6–12 years were randomly allocated to either an intervention or a control group.	The patients in the intervention group had a substantially lower mean value of pain and anxiety—as rated by children, their parents, and an observer nurse—compared to the control patients (Suleman <i>et al.</i> , 2022).

## Discussion

Professionals who have received specialised training to help children and their families deal with the stress of hospitalization are frequently included in the health care team in other countries. For instance, Paediatric Nurses in the US are experts in paediatric diagnosis and offer patients and families tailored support, education, and preparation based on their understanding of procedures, child development, and family systems (Turner, 2018). A specially trained person known as a Paediatric Nurse offers programs that prepare kids for potentially painful procedures like surgery and hospital stays. As a part of the multidisciplinary team, the Paediatric Nurse collaborates with the parents and healthcare practitioner to create an environment that supports the child's health. When it comes to giving hospitalised children atraumatic care.

### The Role of Paediatric Nurse

Paediatric nurses give nursing care to children who is hospitalised both short or long time. They have some roles also to in reducing trauma and anxiety during medical procedures, they employ developmentally appropriate strategies, like as therapeutic play (Bezuidenhout *et al.*, 2021). It has been demonstrated that paediatric nurse participation in paediatric sexual assault forensic examinations (P-SAFEs) improves collaboration, lowers stress levels for patients and their families, and lessens re-traumatization. Their primary responsibilities include preparation, rapport-building, and procedural assistance (Schmitz *et al.*, 2021).

In atraumatic care, parental involvement is also crucial, since parents offer comfort measures, distraction strategies, and emotional support. Paediatric patients' whole experience can be greatly enhanced by the inclusion of paediatric nurse services in healthcare institutions, guaranteeing their emotional and1. Preparation and Education: Providing age-appropriate information to help children understand medical procedures and reduce fear. Hospitalised children receive psychological support from child life professionals through therapeutic play, education, and teamwork with the medical staff (Romito *et al.*, 2021)

Emotional Support: Offering coping strategies and emotional reassurance to alleviate anxiety and distress. Hospital pre-admission tours and information programs, outpatient consultations with families, advocacy for the child and family, therapeutic play, activities to support normal growth and development, sibling support, non-medical preparation for tests, surgeries, and other medical procedures, and assistance during medical procedures are all among the services offered by a paediatric nurse. The paediatric nurse aims to improve and foster the child's comprehension and cooperation while reducing the child's fear and anxiety. The paediatric nurse takes into account the needs of siblings or other kids who might be impacted by the trauma or illness of the child. The paediatric nurse organises unique entertainment and activities to create an evening that is both engaging and inspiring. One of the best resources is the paediatric nurse.

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Distraction techniques have proven to be quite successful in lowering children's reported and observed pain and distress in clinic, emergency department (ED), and inpatient settings. It has been discovered that the development of virtual reality, Internet technology, and electronic and digital gadgets can effectively divert attention from pain. Additionally, Paediatric Nurses can provide comfort kits with age-appropriate distractions like bubbles, pop-up and sound books, light-up toys, and other visual or aural aids for use in treatment areas. It has also been demonstrated that using distraction strategies can effectively reduce a parent's anxiety and discomfort during an intrusive operation. Child life experts are capable of offering patients and caregivers guidance and support before to, during, and after treatment, as well as developmentally appropriate non-pharmacologic pain management (Romito *et al.*, 2021)

### **Hospitalised Children**

Hospitalization is needed for children with chronic illnesses because children with chronic illnesses need help in the treatment process, especially assistance. Some children need assistance to help with the treatment process at home. Adolescent children who have limited mobility need help to be able to carry out home care. Children who are at home can use wheelchairs or strollers for transportation for daily activities. If a child is on bed rest, a comfortable bed can be chosen, especially one that minimises pressure on the body (Loureiro, Antunes and Charepe, 2021).

As a crucial component of a child life program, preparing children for hospitalization, clinic visits, surgeries, and diagnostic and/or therapeutic procedures is crucial. According to estimates, between 50% and 75% of kids experience severe anxiety and fear prior to surgery; age, temperament, baseline anxiety, previous medical experiences, and caregiver anxiety are known risk factors. One Anxiety in children during the perioperative period is linked to poor behavioral and clinical recovery following surgery, including higher analgesic needs and a longer recovery period. In addition to lowering emergence, preparation might lessen anxiety and discomfort before to surgery and/or during mask induction (Romito *et al.*, 2021)

Children who are admitted to the hospital generally have a hard time and incur psychological stress as a result. To lessen the detrimental effects on hospitalised children, nurses should plan a number of crucial actions. Art therapy is one of the evidence-based strategies used to lessen the effects of anxiety brought on by hospitalization. Other strategies include offering mental, physical, social, and emotional support (Mahato *et al.*, 2022).

### **Family Support Management**

For nurses, family center care are viewed as a difficult treatment strategy, but there are advantages, such as better health care satisfaction and a more comfortable and welcoming environment for the kid and family. Although it is recognised as a crucial tool, its definition is ambiguous, and it is used in several nations under various names. There appear to be some gaps in its applicability, particularly with regard to the efficient action of nurses the lack of support (Loureiro, Antunes and Charepe, 2021)

Family-centered care is one of the tenets of atraumatic care. Family-centered care encourages parents to be present and involved in their children's care around-the-clock. A better understanding of diseases, improved coordination of care and follow-up visit planning, increased patient and family satisfaction, improved communication between health professionals and families, improved patient safety, and increased job satisfaction among healthcare professionals are just a few advantages of family-centered care during hospitalization (Handayani and Daulima, 2020)

### **Atraumatic Care Management**

In order to reduce the physical and psychological suffering that children endure during medical operations, atraumatic care is an essential component of paediatric healthcare. Paediatric Nurse employ techniques to support this kind of care. The usefulness of Paediatric Nurse in delivering atraumatic treatment is examined in this review of the literature, with a focus on current research conducted between 2021 and 2024 and their effects on patient outcomes.



Although it was shown that over two-thirds of the nurses were adequately knowledgeable about the implementation of atraumatic care, hospitalised children appear to have an unfavourable attitude about its use. Given that there is a positive relationship between nurses' knowledge and attitudes about providing atraumatic care, it is possible to improve nurses' positive attitudes by raising their level of understanding about this practice (Mahato *et al.*, 2022).

Tennis distraction, which includes play therapy, music therapy, and the use of tablets or other digital devices to help children feel less stressed, can be used in the treatment of hospitalised children. According to the study's findings, children's anxiety and fear levels throughout the inspection procedure were lowered when an entertainer clown arrived at the hospital. As a Paediatric Nurse unit, it contributes to the process of getting kids ready for hospitalization and using hospital diversion strategies (Schmitz *et al.*, 2021).

To lessen anxiety in medical settings, Paediatric Nurses offer children and families tailored, practical assistance through instruction, therapeutic play, and medical procedure preparation. The skills and training of Paediatric Nurse are applicable to community organizations that support children's health and well-being to help them cope with stress and trauma in settings like hospices, schools, specialised camps, and funeral homes, even though they usually work in hospital settings. Paediatric Nurse are always pushed to be creative in order to fulfil the ever-evolving requirements of a wide range of children and their families, as seen by descriptions of their everyday practices. Paediatric Nurse need to work with a range of medical specialists and figure out how to use evidence-based, developmentally appropriate (Claridge *et al.*, 2020).

In addition to being a crucial component of a child life program, preparing kids for hospital stays, clinic visits, surgeries, and diagnostic and/or therapeutic procedures is crucial. Between 50% and 75% of kids are thought to experience severe dread and anxiety prior to surgery; age, temperament, baseline anxiety, previous medical experiences, and caregiver anxiety are known risk factors. One Anxiety in the perioperative setting in children is linked to poor behavioral and clinical recovery following surgery, including higher analgesic needs and postponed recovery room departure. In addition to lowering emergence, preparation might lessen anxiety and discomfort before to surgery and/or during mask induction (Romito *et al.*, 2021).

## Conclusion

Based on five journals that discuss the role of nurses in providing atraumatic care to children. Nurses play a role in Integrated care services are provided to children and adolescents who are hospitalised. It is hoped that paediatric nurses can improve parenting models for hospitalised children. The CYPHP intervention was founded on health-system strengthening, which was developed in collaboration with policymakers, clinicians, and service consumers to develop an intervention logic model. In both primary and secondary care, the biopsychosocial model was incorporated. In primary care, local child health teams consisting of general practitioners, paediatricians, and paediatric nurses coordinated care with community paediatricians, health visitors, and school health, social work, and mental health services. Apart from that, nurses also play a role in providing therapeutic play, which can reduce anxiety levels in children. The use of AI-based technology, especially Virtual Reality, both passive and active, is also an alternative choice in providing nursing care in the process of providing atraumatic care to hospitalised children. Nurses also play a role in providing interventions called Trace Image and Coloring for Kids-Book (TICK-B) in providing atraumatic care. Ventriloquist nursing intervention, incorporating drama techniques in the process of treating pain is also an alternative in the process of providing atraumatic care to paediatric patients.

## Conflict of Interest

The authors declare that they have no conflict of interests.

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