

# Parents' Opinions towards Parental Presence During their Children's Invasive Procedures in the Paediatric Emergency Department: A Descriptive Study

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## ABSTRACT

**Background:** Invasive procedures tended to be more frightening, inducing distress and anxiety in children. Parental presence during such procedures has emerged as a crucial element in paediatric care, offering emotional support and comfort to children. **Objective:** This study aims to explore parental opinions regarding their presence during their children's invasive procedures in the Paediatric Emergency Department (PED). **Methods:** A descriptive cross-sectional study design was employed, involving 377 parents from the King Abdullah Specialised Children's Hospital (KASCH) in Riyadh. Data were collected using a structured questionnaire, the first about the parents' demographic characteristics and the second about parental opinions and expectations regarding parental presence during a child's procedure. **Results:** The mean age of the participants was 37.49±7.96. Most invasive procedures (85%) were blood sampling and peripheral venous catheterisation, while endotracheal intubation and central or arterial catheterisation were less common. Most parents (91.8%) prefer to be present for their child during invasive procedures, with 67% identifying their primary reason as the desire to support and calm their child. Furthermore, significant levels of satisfaction were reported, with 99.7% of parents 94.2% of parents reported obtaining detailed explanations of the procedures, and 77.2% reported finding the explanation very helpful. **Conclusion:** Most parents prefer to be with their children; the majority of parent opinions emphasise the positive impact on the child's well-being. Further benefits include encouraging relaxation and calm for the child, highlighting the necessity of maintaining togetherness, and preventing child separation anxiety.

**Keywords:** Invasive Procedures; Parental Presence; Paediatric Emergency Department

## INTRODUCTION

An invasive procedure was any process that deliberately and purposefully accessed the patient's body parts through an incision, whereby the skin was cut fresh, and percutaneous puncture procedures were integrated, with the inner tissues and organs accessed through the skin's needle puncture or natural orifice instrumentation (Del Castillo *et al.*, 2019). The process was performed by accredited and highly specialised healthcare professionals using instruments including catheters, endoscopes, needles, scissors, scalpels, and tubes, among other devices (Gheshlaghi *et al.*, 2021). The majority of incision procedures were painful for children, leading to their suffering. A child-centred approach is necessary for invasive operations in paediatric nursing practice in order to reduce pain levels linked to long-term traumatic reactions, tension, and anxiety symptoms (Neto *et al.*, 2025).

Invasive procedures in paediatric care tended to be more frightening, with diverse repetitive examples

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including intramuscular injection, venipuncture, and cannulation (Azak, Aksucu, & Çağlar, 2022). The management of a child with a serious medical or surgical condition is a rare occurrence during the treatment procedure in the Paediatric Emergency Department (PED) (Riche *et al.*, 2025) children and their parents displayed signs of mental and physical stress which, if not controlled effectively, caused adverse physical reactions, avoidance of therapeutic procedures, distraction of the nurse, ineffective communication, and lack of cooperation (Del Castillo *et al.*, 2019). The worry, unease, and nervousness could become excessive and overwhelming, deterring the success of treatment procedures for children undergoing invasive procedures (Werner *et al.*, 2019). Children often had elevated levels of fear during these procedures, causing high distress for prolonged durations (Gheshlaghi *et al.*, 2021). Children needed to feel cared for and accompanied by their family members, especially in their moments of pain (Çamur & Sarıkaya Karabudak, 2021).

Children undergoing the process encountered distress and anxiety for multiple reasons, including exposure to the process, change in environment, and need for intervention (Azak, Aksucu, & Çağlar, 2022). Consequently, discomfort reduction techniques were considered vital to help children go through invasive procedures (Ferraz-Torres *et al.*, 2022). Being accompanied by parents was considered among the most effective reduction techniques in encouraging children to go through the treatment (Fernández, Martín, & Herrera, 2021). The presence of family members next to the children during this intervention procedure was considered a strong support system in paediatric care (Sağlık & Çağlar, 2019). Paediatric care teams also supported parent presence and involvement in care, which helped address several issues in the rapidly evolving healthcare environment of today (Miller *et al.*, 2022). Parental presence had demonstrated favourable impacts on both parents and children, in addition to offering comfort and calm to children. While it was the child's right to have their parents present during invasive procedures, some medical professionals were less inclined to grant this request. The primary causes cited by the caregivers for this concern were the increased worry levels in parents and the children themselves. Additional factors included the length of time needed to explain the process to parents and the concern of the medical professionals about the parents' attendance during the intervention (Palomares González *et al.*, 2023).

### Significance of the Study

The presence of parents during invasive treatments made children feel less alone, causing their dread to subside. During invasive procedures, parents provided diversions by using soothing voices, touch, or embraces. The children further claimed that no distraction provided by a nurse could offer them as much comfort as that provided by their parents (Handayani & Daulima, 2020). Recently, parents played an essential role in the Paediatric Emergency Department (PED) and expressed a desire to be present when Invasive Procedures (IP) were performed. Parental presence during the medical processes of invasive procedures among child patients had been significantly endorsed by healthcare professionals, being considered vital for positive paediatric family-centred care (Palomares González *et al.*, 2023).

Allowing a child's parents to accompany them to invasive procedures or resuscitation has grown increasingly common in recent years. Previous studies showed that most parents preferred to stay in the emergency department with their children (Palomares González *et al.*, 2023). Several studies indicated that parental attendance during injections and other medical procedures could have benefits, such as minimising parental discomfort, boosting parent satisfaction, and avoiding child separation anxiety. Additionally, healthcare practitioners believed that having family members improved their communication and encouraged family education (Vanhoy *et al.*, 2019). Previous studies have also provided important insights into the emotional effects on parents when holding their children during medical procedures (McGrath *et al.*, 2002; Brenner, 2013; Hay *et al.*, 2025), however, there is limited understanding of the specific roles' parents assume in such situations.

Additionally, Rattanawong, Prasopkittikun, and Srichantaranit (2021) noted that numerous research studies highly recommended focusing on empirically created criteria for parental presence during paediatric invasive procedures to successfully enhance the advantages of parental attendance during invasive procedures. According to Al-Eissa *et al.* (2015), it was also advisable to promote parents' understanding of their entitlement to remain with their children. Furthermore, there were currently insufficient studies to assess parents' thoughts

and opinions on their presence during invasive operations. Thus, the current study's goal was to figure out parents' opinions based on their presence during invasive procedures in the paediatric emergency department.

### **Aim of the Study**

To assess parents' opinions towards parental presence during their children's invasive procedures in the paediatric emergency department.

## **METHODOLOGY**

### **Study Area/Setting**

The emergency department of King Abdullah Specialised Children's Hospital (KASCH) in the Riyadh region, Saudi Arabia. KASCH is the top paediatric primary hospital in the Kingdom, providing exceptional care to all children. The paediatric emergency department has a Triage Area, an Urgent Care Unit, spaces for Paediatric Rapid Assessment and Management (PRAM), a Resuscitation Unit, an Acute Care Unit, and a Clinical Decision Unit (CDU).

### **Study Subjects**

**Inclusion criteria:** All parents, regardless of age or nationality, accompany their children to the KASCH and are admitted to emergency departments, where their children will undergo invasive procedures. Parents were excluded from the study if they were emotionally disturbed.

### **Study Design**

Descriptive cross-sectional study design.

### **Sample Size**

The sample size was estimated using a computerised sample size calculator, based on the total number of children presenting to the Paediatric Emergency Department (PED) at King Abdullah Specialized Children's Hospital (KASCH), and calculated using the following assumptions: The margin of error is 5% with a 95% confidence level. The sample size was 377 parents.

### **Sampling Technique**

The sample was selected using convenience sampling for parents.

### **Data Collection Methods, Instruments Used, Measurements**

Researchers developed a parental opinion scale based on the relevant literature (Çamur & Sarıkaya Karabudak, 2021). It is divided into two sections: the first has seven questions about the parents' demographic characteristics, such as age, level of education, and place of residence. Section 2 includes 14 questions about parental opinions and expectations regarding parental presence during a child's procedure, the tool covered variables such as child diagnosis, parental presence during invasive paediatric procedures (yes, no), the type of invasive procedures performed (ten invasive procedures, which the researchers divided into less and more invasive), as well as a question concerning if parental attendance is permitted (yes, no) Also addressed is the parent's preference to be involved or not (yes, no), as well as the parent's receipt of an explanation from the doctor or staff (yes, no). Furthermore, a Likert scale was used in 5 questions to determine and analyse their expectations and opinions, as well as the parent's satisfaction (Very helpful, Somewhat helpful, No effect, Somewhat harmful, Very harmful) and anxiety level before, during, and after the invasive procedure as "Please rate your anxiety before the invasive procedure: (Not anxious, Minimally anxious, Moderately anxious, Very anxious, Extremely anxious) and how they perceived the presence during the procedure (Very helpful, Somewhat helpful, No effect, Somewhat harmful, Very harmful). Following completion of the questionnaire, the researchers included one open question in which participants will be able to write free-text comments inspired by the sentence: "Please share your opinions or observations about the presence of parents with their children during invasive procedures. The validity of the scale was evaluated by three professional staff members and five parents." A preliminary investigation including 10% of the subjects was conducted to evaluate the reliability of all study questionnaires; the data from these participants would not be incorporated into the study's analysis. The Cronbach's alpha reliability, as determined by the researchers, was 0.75.

## Data Management and Analysis Plan

The data was analysed and processed using SPSS software version 22. For continuous variables, the mean, standard deviation, and frequency will be used. Categorical variables were assessed using frequency. The Chi-square test was used to investigate differences in the opinions of respondents toward their child's procedures based on the parameters that were selected. If the *P*-value was less than 0.05, the findings were considered statistically significant.

## Ethical Consideration

The research obtained ethical clearance from the Ethics Committee, King Abdullah International Medical Research Centre (KAIMRC), Saudi Arabia with Reference Number RYD-23-419812-202744 on 23<sup>rd</sup> December, 2023.

## RESULTS

Table 1 highlights that nearly two-thirds of the participants were female. Nearly 43.5% of them were between the ages of 31 and 40, with a mean age of  $37.49 \pm 7.96$ . The majority of the parents were Saudis (97.6%). Nearly half of them were unemployed and 43.5% of them held a bachelor's degree.

**Table 1: Parents' Demographic Characteristics**

Variable	Frequency	Percentage
Gender		
Female	284	75.3%
Male	93	24.7%
Age		
18-30	72	19.1%
31-40	164	43.5%
41-50	115	30.5%
51-60	26	6.9%
Mean	37.49+ 7.96	
Nationality		
Saudi	368	97.6%
Non-Saudi	9	2.4%
Education Level		
High school	120	31.8%
Diploma	44	11.7%
Bachelor	164	43.5%
Higher education	49	13%
Occupation		
Employed	181	48.0%
Unemployed	196	52.0%
Residence		
Riyadh	368	97.6%
Jeddah	5	1.3%
Alhasa	2	0.5%
Dammam	2	0.5%

According to table 2, the most common invasive procedure was blood sampling and peripheral venous catheterisation (85%), while endotracheal intubation (0.5%) and central or arterial catheterisation (0.8%) were less common.

**Table 2: The Frequency Distribution of the Invasive Procedure During Parental Presence**

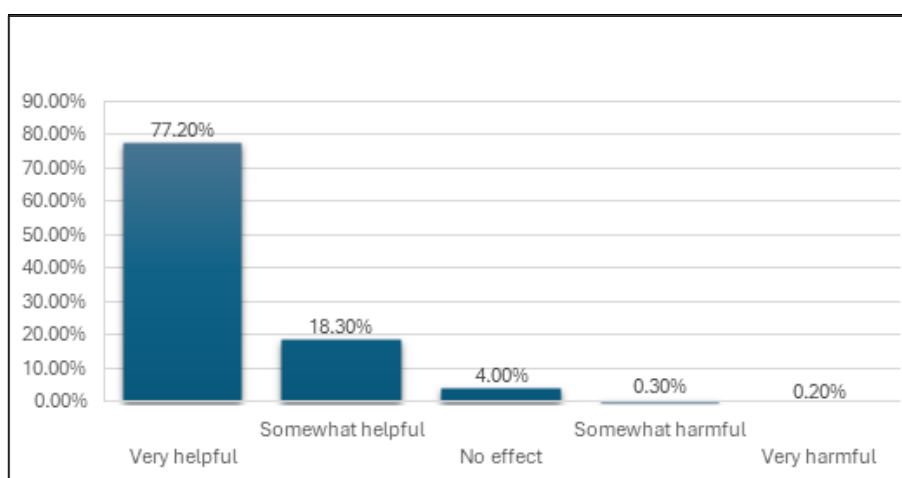
Variable	Frequency	Percentage
<b>Less Invasive Procedure</b>		
Blood Sampling and Peripheral Vanous Catheterization	323	85.7%
Bladder Catheterisation	12	3.2%
Oro-Nasogastric Catheterisation	5	1.3%
Wound Suturing	15	4.0%
<b>More Invasive Procedure</b>		
Lumber Puncture	5	1.3%
Central or Arterial Catheterisation	3	0.8%
Skeletal Traction	6	1.6%
Endotracheal Intubation	2	0.5%
CPR Manoeuvres	6	1.6%

According to Table 3, the majority of parents (91.8%) want to be there for their children during invasive procedures, with 67% expressing the desire to assist and calm them. In contrast, 8.2% of parents choose not to be there because they cannot tolerate the procedure. Furthermore, 91.5% of parents demonstrate a desire to be actively involved in the procedure, with nearly all of them (99.7%) satisfied with their level of involvement. Furthermore, most parents (96.3%) received an explanation of the procedure, whereas 3.7% did not.

**Table 3: Parental Opinion During Invasive Procedure**

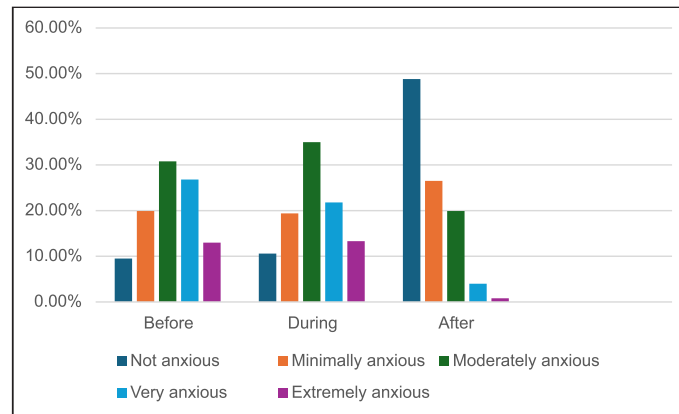
Variable	Frequency	Percentage
<b>Do parents prefer being with their child during an invasive procedure?</b>		
Yes	346	91.8%
No	31	8.2%
<b>If yes, why (N= 346)</b>		
To support and calm my child	232	67%
I want to be available for my child	69	0.8%
It is my right to be with my child	48	1.6%
Doctor asks me	49	0.5%
<b>If no, why (N= 31)</b>		
I do not want to be there	2	0.5%
I can't tolerate	24	77.4%
I already have anxiety	1	0.3%
<b>Do the parents prefer to be involved?</b>		
Yes	345	91.5%
No	32	8.5%
<b>Are the patents satisfied?</b>		
Yes	376	99.7%
No	1	0.3%
<b>Do parents receive any explanations?</b>		
Yes	363	96.3%
No	14	3.7%

Figure 1 depicts statistics on feedback regarding the perceived importance of an explanation. The majority of respondents (77.2%) found the explanation very helpful, with 18.3% finding it somewhat helpful. Similarly, 4% said the explanation had no effect, 0.3% said it was harmful, and 0.2% said it was extremely harmful.



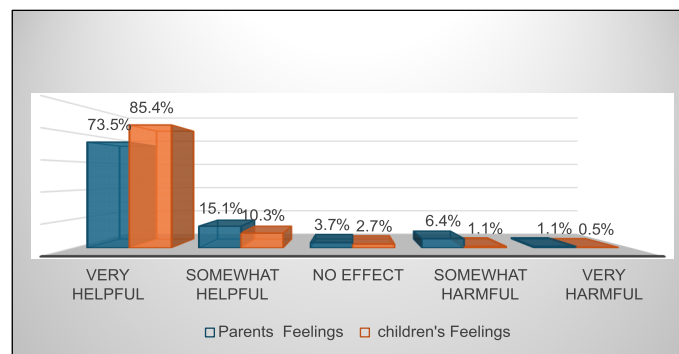
**Figure 1: Explanation Rate from the Doctor or the Staff**

Figure 2 represents parental anxiety levels prior to, during, and following the procedure. Prior to the procedure, 30.8% identified as moderately anxious, and 13% experienced extreme anxiety. During the procedure, the proportion of parents experiencing moderate anxiety grew dramatically to 35%. Following the procedure, anxiety was significantly reduced, with 48.8% of parents expressing no anxiety.



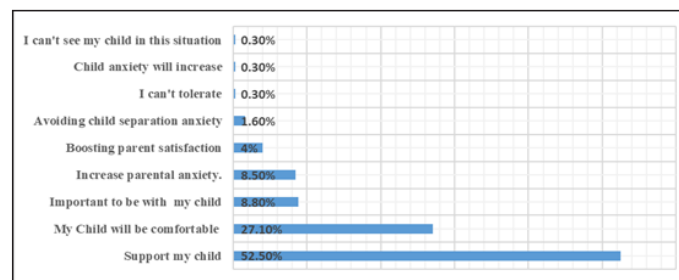
**Figure 2: Parental Anxiety Levels**

Figure 3 highlights that most parents view the scenario as highly beneficial, with 73.5% considering it very helpful and an additional 15.1% finding it somewhat helpful. Reports of negative or harmful effects are minimal, with only 1.1% describing the scenario as very harmful. Responses regarding children's feelings are even very helpful, with 85.4% identifying the scenario as very helpful. Negative impacts on children are negligible, with just 0.5% perceiving the scenario as very harmful.



**Figure 3: Parents' and Children's Feelings Following the Invasive Procedure**

Figure 4 demonstrates that most respondents, 52.5%, believe it has a beneficial impact on the child's well-being. Other advantages include increased child comfort and calm (27.1%) and improved parent satisfaction (4%). Furthermore, 8.8% of respondents emphasise the importance of family unity, while 1.6% emphasise the benefits of preventing separation anxiety in children. In contrast, negative reactions are low; the predominant issue was an increase in parent anxiety (8.5%), with only a small number of respondents concerned about the situation being intolerable (0.3%) or perhaps raising children's anxiety (0.3%).



**Figure 4: The Opinions of Parents on their Presence with their Children During Invasive Procedures**

Table 4 shows that there was no significant difference between parental preferences for being there with their children during invasive procedures and their satisfaction with it. While the results demonstrated that, there was a statistically significant difference in anxiety level after attending the invasive procedure.



**Table 4: Relationship between Parental Preference for Presence During Their Child's Invasive Procedures and Their Levels of Satisfaction and Anxiety**

Items	Parental Preference			
Satisfaction	Yes		No	
	no	%	no	%
Satisfy	344	91.2	32	8.5
No satisfy	1	0.3	0	0
Test	Chi-square = 0.09		p= 0.76	
Anxiety level				
Not anxious	178	51	6	18.8
Minimally anxious	94	27.2	6	18.8
Moderately anxious	62	18	13	40
Very anxious,	10	2.9	5	15.6
Extremely anxious	1	0.3	2	6.3
Chi-square Test = 39.82			p= 0.000	

## DISCUSSION

There is ongoing debate surrounding parental presence during invasive paediatric procedures, and limited research has explored its positive effects (Hashavya *et al.*, 2023). Therefore, the current study focuses on assessing parents' opinions towards parental presence during their children's invasive procedures in the paediatric emergency department. The current study found that almost two-thirds of the participants were women, with an average age of 37.49. Most of the parents were Saudis. Almost half of them were unemployed, and roughly half held a bachelor's degree. Similarly, Al-Eissa *et al.* (2015) conducted a study in Saudi Arabia on parental attendance during invasive operations in the emergency department, discovering that the majority of participants were female and under the age of 30. About half had more than a high school graduation and were employed.

The present study concluded that the most common invasive procedures done were blood sample and peripheral venous catheterisation, while endotracheal intubation and central or arterial catheterisation were less common. These results are consistent with the findings of Palomares González *et al.* (2023) and Al-Eissa *et al.* (2015). According to the current data, most parents want to be present for their child during invasive operations, with more than two-thirds referring to assisting and calming as the primary reason for staying with their children. This finding was consistent with those obtained by O'Connell *et al.* (2017), who reported in their study about family presence during trauma resuscitation: family members' attitudes, behaviours, and experiences that parents prefer to be present in the resuscitation room and during invasive procedures. Giving parents the option to stay boosted their comfort during invasive procedures. On the same line, Hashavya *et al.* (2023) in their study highlighted that from the perspective of the medical professionals, the presence of parents was very or extremely useful in helping the process go well. Likewise, most parents said it was very or extremely useful in controlling the conduct of the child. Furthermore, Ferreira *et al.* (2025), in their qualitative study, explain that the family's preference to be with or not with the child anytime under all circumstances is demonstrated by their riskiness, choice, beliefs, and resolution, which are driven by their want to care for the child and satisfy their moral obligation.

According to the current study, most parents express a desire to participate actively in the procedure. This finding is consistent with the study by Ventura Expósito *et al.* (2024) on paediatric resuscitation, parental presence, and provider perspectives, which found that families who were given the opportunity to be present experienced less complicated grief and valued the chance to be involved. Additionally, Lindsay, Hudgins and Patel (2024) found that having parents around was better for the family and oneself.

The survey indicated that nearly all parents were satisfied with their degree of involvement. However, the results of the present study indicated that there was no discernible difference between the satisfaction of parents and their desires to be there with their children during invasive operations. This conclusion is in contrast to the findings of Hashavya *et al.* (2023), who found that parents who attended the invasive procedures reported feeling very or extremely satisfied, as opposed to those who did not ( $p < 0.0001$ ). Additionally, Mark (2021) contradicts the results in his recent work about family presence during paediatric resuscitation and invasive procedures: parental experience. An Integrative Review: An integrative analysis of studies found that parental

satisfaction with paediatric resuscitation and invasive treatments was unrelated to their personal attendance proportional to the urgency of the child's condition.

The current study indicated that parental anxiety levels tend to peak during the procedure, with the majority experiencing moderate to extremely high levels of anxiety. However, a significant decrease in anxiety occurs after the procedure, as reflected in the high proportion of parents reporting no anxiety. In addition to the findings, the study by Hashavya *et al.* (2023) showed that there was a statistically significant difference in the participants' anxiety levels following the procedure. A comparable study reported that more than half of the parents experienced no anxiety after attending the procedures, aligning with the present study's findings. Moreover, a significant difference was observed in the anxiety levels between parents who attended the invasive procedures and those who did not attend.

These results are consistent with the findings of O'Connell *et al.* (2017), Mark (2021), and Guzzetta (2016). They indicated that being present reduces the parents' procedural anxiety and dread, and three months later, they have no bad recollections and "would do it again". Furthermore, Sağlık and Çağlar (2019) discovered that children of parents with high trait anxiety levels experienced more pre-procedural discomfort and trait anxiety levels.

The current study concluded that parental presence during invasive procedures has a positive impact on the child's well-being, with nearly half of respondents emphasizing this. Other benefits include fostering comfort and calmness for the child and increasing parental satisfaction. Furthermore, parental replies emphasised the importance of preserving togetherness. These findings were consistent with practically all recent studies that investigated the influence of parental presence during invasive procedures on children's health and well-being, such as those conducted by O'Connell *et al.* (2017); Mark (2021); Guzzetta (2016); Hashavya *et al.* (2023); Neto *et al.* (2025).

### **Limitation**

Despite the useful insights provided by this study, a few limitations should be noted. First, the study's narrow focus on the King Abdullah Specialised Children's Hospital Emergency Department in Riyadh limits the results' applicability to other healthcare settings and cultural situations. Second, the cross-sectional design precludes the evaluation of longitudinal changes in parental attitudes and experiences.

### **CONCLUSION**

The study provides valuable insights into the importance of parental presence in paediatric healthcare settings, showing that most parents prefer to be with their children and find their presence very helpful. The majority of parents' opinions emphasise the positive impact on the child's well-being. Further benefits include encouraging relaxation and calm for the child, increasing parent satisfaction, highlighting the necessity of maintaining togetherness, and preventing child separation anxiety. There was a statistically significant difference in anxiety levels after attending the invasive procedure.

Additional studies that are significant to the clinical practice of paediatric nurses. Future research endeavours could strengthen the robustness and application of findings linked to parental presence during paediatric invasive procedures, resulting in enhanced patient-centred care practices, which may include the role of paediatric nurses in critical care units when parents are present and nurses' and doctors' perspectives on family members participating in invasive procedures on hospitalised children, and examine children's anxiety levels throughout invasive treatments while their parents are around.

### **Recommendation**

Replication studies entail boosting the sample size and expanding to other areas in all paediatric units. Stratified random sampling must be employed to minimise selection biases and improve representativeness. Furthermore, the study highlights the need for intervention-based studies to examine the impact of parental presence on clinical outcomes and procedural efficiency. It emphasises the importance of customised techniques to support both children and parents during invasive procedures. Healthcare professionals can improve treatment outcomes by creating supportive environments that emphasise family-centered care.



## Conflict of Interest

The authors declare that they have no competing interests.

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## REFERENCES

- Al-Eissa, M., Saleheen, H., Yousif, A., Al-Manea, S., Al-Hijali, B., & Khan, A. (2015). Parental presence during resuscitation and invasive procedures in the emergency department: Saudi Parents' Perspectives. *Journal of Nursing and Care*, 4(278), 2167-1168. <https://doi.org/10.4172/2167-1168.1000278>
- Azak, M., Aksucu, G., & Çağlar, S. (2022). The effect of parental presence on pain levels of children during invasive procedures: A systematic review. *Pain Management Nursing*, 23(5), 682-688. <https://doi.org/10.1016/j.pmn.2022.03.011>
- Brenner, M. (2013). A need to protect parents' experiences of the practice of restricting a child for a clinical procedure in hospital. *Issues in Comprehensive Paediatric Nursing*, 36(1-2), 5-16. <https://doi.org/10.3109/01460862.2013.768312>
- Çamur, Z., & Sarıkaya Karabudak, S. (2021). The effect of parental participation in the care of hospitalized children on parent satisfaction and parent and child anxiety: Randomized controlled trial. *International Journal of Nursing Practice*, 27(5). <https://doi.org/10.1111/ijn.12910>
- Del Castillo, B. T., Torres, J. A. P., Sánchez, L. M., Castellanos, M. E., Fernández, L. E., Sánchez, M. I. G., & Fernández, R. R. (2019). Reducing the pain in invasive procedures during paediatric hospital admissions: Fiction, reality or virtual reality? *Anales de Pediatría (English Edition)*, 91(2), 80–87. <https://doi.org/10.1016/j.anpede.2018.10.007>
- Fernández, E. D. M., Martín, G. M., & Herrera, M. J. (2021). Family witnessed resuscitation and invasive procedures: Patient and family opinions. *Nursing Ethics*, 28(5), 645-655. <https://doi.org/10.1177/0969733020968171>
- Ferraz-Torres, M., San Martín-Rodríguez, L., García-Vivar, C., Soto-Ruiz, N., & Escalada-Hernández, P. (2022). Passive or interactive virtual reality? The effectiveness for pain and anxiety reduction in paediatric patients. *Virtual Reality*, 26(4), 1307-1316. <https://doi.org/10.1007/s10055-022-00633-7>
- Ferreira, C. A. G., de Araújo Püschel, V. A., Balieiro, M. M. F. G., & Mandetta, M. A. (2025). Family experience in making the decision to be present with the child during invasive procedures and/or cardiopulmonary resuscitation: A qualitative systematic review. *Journal of Emergency Nursing*. <https://doi.org/10.1016/j.jen.2025.04.011>
- Gheshlaghi, P. A., Farahani, Z. B., Anboohi, S. Z., Nasiri, M., Ziapour, A., & Garosi, V. H. (2021). Effect of family presence on pain and anxiety levels among patients during invasive nursing procedures in an emergency department at a public hospital in Western Iran. *African Journal of Emergency Medicine*, 11(1), 31-36. <https://doi.org/10.1016/j.afjem.2020.11.003>
- Guzzetta, C. (2016). Family Presence During Resuscitation and Invasive Procedures. *Critical Care Nurse*, 36(1). <https://doi-org.sdl.idm.oclc.org/10.4037/ccn2016980>
- Handayani, A., & Daulima, N. H. C. (2020). Parental presence in the implementation of atraumatic care during children's hospitalization. *Paediatric Reports*, 12(Suppl 1). <https://doi.org/10.4081/pr.2020.8693>
- Hashavya, S., Pines-Shwartz, N., Guzner, N., Ohana Sarna Cahan, L., & Gross, I. (2023). The impact of parental presence on invasive procedures in the paediatric emergency department: A prospective study. *Journal of Clinical Medicine*, 12(17). <https://doi-org.sdl.idm.oclc.org/10.3390/jcm12175527>

- Hay, S., Kinney, S., Richards, S., Newall, F., Hawley, M., & O'Neill, J. (2025). Parents' Experiences of holding their child for healthcare procedures: A qualitative exploratory study. *Journal of Advanced Nursing*. <https://doi.org/10.1111/jan.16935>
- Lindsay, J., Hudgins, A., & Patel, S. (2024). paediatric resuscitation, parental presence, and provider perspective. *Dimensions of Critical Care Nursing*, 43(6), 328-332. <https://doi.org/10.1097/DCC.0000000000000666>
- Mark, K. (2021). Family presence during paediatric resuscitation and invasive procedures: the parental experience: An integrative review: an integrative review. *Scandinavian Journal of Caring Sciences*, 35(1), 20-36. <https://doi.org/10.1111/scs.12829>
- McGrath, P., Forrester, K., Fox-Young, S., & Huff, N. (2002). "Holding the child down" for treatment in paediatric haematology: the ethical, legal and practice implications. *Journal of Law and Medicine*, 10(1), 84-96. Retrieved from: <https://europepmc.org/article/med/12242887>, Accessed on 12<sup>th</sup> May, 2023.
- Miller, L., Richard, M., Krmpotic, K., Kennedy, A., Seabrook, J., Slumkoski, C., ... & Foster, J. (2022). Parental presence at the bedside of critically ill children in the paediatric intensive care unit: A scoping review. *European Journal of Paediatrics*, 1-9. <https://doi-org.sdl.idm.oclc.org/10.1007/s00431-021-04279-6>
- Neto, J., Fernandes, R., Andrade, L., Fernandes, I., Martins, T., do Céu Barbieri-Figueiredo, M., ... & Lima, L. (2025). Invasive procedures and atraumatic care in paediatric nursing practice: nurses' perceptions. *Frontiers in Paediatrics*, 13. <https://doi.org/10.3389/fped.2025.1543138>
- O'Connell, K., Fritzeen, J., Guzzetta, C. E., Clark, A. P., Lloyd, C., Scott, S. H., ... & Kreling, B. (2017). Family presence during trauma resuscitation: family members' attitudes, behaviors, and experiences. *American Journal of Critical Care*, 26(3), 229-239. <https://doi.org/10.4037/ajcc2017503>
- Palomares González, L., Hernández Caravaca, I., Gómez García, C. I., & Sánchez-Solís de Querol, M. (2023). Presencia de los padres durante procedimientos pediátricos invasivos: ¿De qué depende?. [Parental presence during invasive paediatric procedures: What does it depend on?] *Revista Latino-Americana de Enfermagem*, 31. <https://doi.org/10.1590/1518-8345.6101.3827>
- Rattanawong, J., Prasopkittikun, T., & Srichantaranit, A. (2021). Parents' and Nurses' Attitudes towards Parental Presence during Paediatric Invasive Procedures. *Journal of Thailand Nursing and Midwifery Council*, 36(2), 93-109. Retrieved from: <https://he02.tci-thaijo.org/index.php/TJONC/article/view/247359>. Accessed on 15<sup>th</sup> March, 2023.
- Riche, E., Morand, A., Fruscione, S., Michel, F., Boutin, A., Bremond, V., ... & Minodier, P. (2025). From paediatric emergency department to paediatric intensive care unit: A retrospective study in a French Tertiary University hospital. *Archives de Pédiatrie*, 32(2), 126-131. <https://doi.org/10.1016/j.arcped.2024.12.005>
- Sağlık, D. S., & Çağlar, S. (2019). The effect of parental presence on pain and anxiety levels during invasive procedures in the paediatric emergency department. *Journal of Emergency Nursing*, 45(3), 278-285. <https://doi.org/10.1016/j.jen.2018.07.003>
- Vanhoy, M. A., Horgan, A., Stapleton, S. J., Valdez, A. M., Bradford, J. Y., Killian, M., ... & Gates, L. (2019). Clinical practice guideline: Family presence. *Journal of Emergency Nursing*, 45(1). <https://doi.org/10.1016/j.jen.2018.11.012>
- Ventura Expósito, L., Arreciado Marañón, A., Gomà Tous, M., Ferrerons Sánchez, M., & Zuriguel-Pérez, E. (2024). Nurses' views on the presence of family members during invasive procedures in hospitalised children: A questionnaire survey. *Journal of Clinical Nursing*, 33(10), 3979-3990. <https://doi.org/10.1111/jocn.17062>
- Werner, O., El Louali, F., Fouilloux, V., Amedro, P., & Ovaert, C. (2019). Parental anxiety before invasive cardiac procedure in children with congenital heart disease: Contributing factors and consequences. *Congenital Heart Disease*, 14(5), 778-784. <https://doi.org/10.1111/chd.12777>