

# Rethinking procedural holding through a trauma-informed lens

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## Introduction

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*"How much of what we do, or fail to do, now for children in pain will come to be seen as unwise, unacceptable, or unethical in another 40 years? (Eccleston et al., 2021, p.48)"*

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Procedural holding, the physical restraint of children during medical procedures, remains a routine practice in pediatric care. Despite increasing recognition of children's rights and the principles of trauma-informed care, restraint is still commonly used to complete procedures perceived as essential. The time has come to question current norms and consider the legacy of our actions and ask ourselves as pediatric nurses is children's compliance with medical procedures sufficient justification for force? Or should we strive for care that preserves children's dignity, autonomy, and emotional safety? This editorial challenges the status quo of holding children for medical procedures and calls for a systemic shift toward trauma-informed, ethically grounded procedural care, supported by clear policies, leadership accountability, and the voices of children and families.

### **The burden of procedural distress in pediatric care**

Most children are fearful of medical procedures, particularly from needles (McLenon & Rogers, 2019). Yet medical procedures such as blood draws, vaccinations, and cannulations are frequent and often the most distressing events experienced during childhood (Walther-Larsen et al., 2017; Wilding et al., 2021). For hospitalised children, studies indicate they may experience an average of 2.6 procedures per day, with over half reporting moderate to severe procedural pain (Walther-Larsen et al., 2017; Wilding et al., 2021). Despite the availability of simple, evidence-based interventions to manage procedural pain and distress in children, such as topical anaesthetics, distraction, and comfort positioning, these strategies are often underutilised or inconsistently applied in clinical practice (Guillari et al., 2024; Plummer et al., 2017; Wilding et al., 2021). Unaddressed procedural pain contributes to distress that has consequences that extend well beyond the moment of care. Children can experience behavioural dysregulation, which heightens the risk of procedural phobias, physical restraint, and long-term avoidance of healthcare (Lerwick, 2016; Taddio, McMurtry, et al., 2015).

### **Procedural holding: routine care, disputed meaning**

Children experiencing procedural fear and anxiety are more likely to be physically held or restrained by healthcare providers or parents (Bray et al., 2018). Procedural holding is common in clinical practice with an international survey reporting that 81% (n=687/860) of pediatric healthcare providers hold children during procedures, with parents, nurses, or both often involved (Bray et al., 2018). Despite the routine use, the majority of healthcare providers had no formal training in procedural holding and child assent, or parent consent, was often not obtained (Bray et al., 2018).

Procedural holding may occur along a spectrum of force, ranging from supportive comfort measures to forcible physical restraint (Eccleston et al., 2021). For example, positioning may promote comfort, such as a parent cradling an infant, or assisting an older child to sit upright to enhance their sense of control (Pillai Riddell et al., 2015; Plummer, 2020; Taddio, Shah, et al., 2015). These supportive holds that are consensual and collaborative differ fundamentally from restraint that overrides a child's resistance. However, inconsistent and interchangeable terminology obscures these distinctions. Terms like "holding," "safe holding," "immobilisation," "protective stabilisation," and "physical restraint" are often used without clear definition, despite referring to practices that involve varying levels of force to limit a child's movement during procedures (Østberg et al., 2024). There is also a wide array of restrictive practices evident in pediatric nursing, including swaddling, therapeutic hugging, jacket devices, limb-specific restraints, and both psychological and chemical restraint. This semantic diversity reflects a fundamental absence of consensus and contributes to confusion in how procedural holding is taught, perceived, and implemented. The added complexity of restraint being initiated by either healthcare providers or parents further challenges efforts to standardise practice (Bray et al., 2023; Østberg et al., 2024).

### **Children and family experiences of procedural holding**

Children who experience firm or forceful restraint during procedures often perceive these events as traumatic (Bray et al., 2015; Forsner et al., 2023; Plummer et al., 2021). Children have described being held down against their will, sometimes by multiple adults, eliciting feelings of panic, fear, anger, and betrayal. Many expressed a sense of invisibility and powerlessness, reporting that their voices were ignored during these experiences. For some, such encounters leave deep emotional scars, long-lasting negative memories, and a loss of trust in both parents and healthcare providers (Forsner et al., 2023). Parents also report emotional distress when asked to hold their child during medical procedures. Torn between the instinct to

protect and the perceived need to proceed, many describe feelings of guilt, helplessness, and exhaustion, particularly when restraint is involved (Hay et al.). When parents are not given a choice about their involvement, the emotional toll may intensify (Forsner et al., 2023).

While supportive holding can offer comfort, restraint without consent or preparation may contribute to pediatric medical traumatic stress (PMTS) which is a condition characterised by avoidance, hyperarousal, and re-experiencing of distressing medical events. These psychological impacts may affect the entire family and shape future engagement with healthcare services (Shea et al., 2021). Although qualitative evidence highlights these risks, the empirical relationship between procedural holding and PMTS remains underexplored and warrants further investigation (Østberg et al., 2024).

### **Ethical considerations in procedural holding**

Procedural holding poses a profound ethical dilemma in pediatric care. While often well-intentioned to ensure safety or facilitate cooperation, any form of physical restraint can be experienced by the child as a threatening event. For healthcare providers, the decision to hold a child can create moral tension between completing a medically necessary procedure and upholding the child's autonomy and dignity (Lombart et al., 2020). This tension can conflict with pediatric nurses' core nursing values of advocacy, empowerment, and non-maleficence. Ethical tensions arise when restraint is used without adequate justification, informed consent, or exploration of less intrusive alternatives, and outside a child- and family-centred framework of care (Foster et al., 2024).

Healthcare providers right to be protected from the emotional burden of restraining children require equal consideration as they have described internal conflict, moral distress, and uncertainty when asked to hold a child against their will (da Silva et al., 2024; Karlsson et al., 2014). This burden was highlighted in a study of assistant nurses in pediatric mental health settings, who frequently support restraining youth with anorexia nervosa for nasogastric tube insertions. In acute inpatient settings where such procedures are routine, the cumulative emotional impact on assistant nurses was significant yet unacknowledged (Kodua et al., 2020). Recognising and addressing this burden to pediatric nurses is essential to reduce the risk of burnout and distress and to inform systemic changes that promote staff well-being. Ultimately, acknowledging the emotional toll on all healthcare providers is critical to fostering a trauma-informed and ethically sound culture of care (Lombart et al., 2020).

Some children carry unseen burdens with them into the treatment room, especially those with histories of abuse, neglect, or prior traumatic medical care. For these children, even well-intentioned holding can deepen psychological harm and may be experienced as a reenactment of past violations. The Australian Child Maltreatment Study (ACMS) revealed that two in five Australians have experienced multiple forms of childhood maltreatment, and one in ten report forced sexual experiences in childhood (Pacella et al., 2023). These findings underscore the complex reality pediatric nurses face, that because maltreatment is often hidden or undisclosed, they must approach each child and family with the assumption that trauma may co-exist. In acute care settings, where procedures can be invasive or distressing, the risk of re-traumatisation is heightened (Marsac et al., 2016). A universal trauma-informed approach ensures care is delivered safely, respectfully, and with an understanding of each patient's potential vulnerability (Cutuli et al., 2019).

### **Children's right to be protected from harm**

Children have a fundamental right to be protected from harm, to receive information, and to have their voices heard, rights enshrined in the United Nations Convention on the Rights of the Child (United Nations, 1989). In healthcare settings, this includes protection from unnecessary pain, trauma, and distress (Children's Hospitals Australasia, 2011). Advances in pediatric pain management reflect growing recognition of these rights. Since the 1980s, when anesthesia was routinely withheld from infants, initiatives such as Child Kind, the Comfort Promise, and Canada's national pediatric pain management standard have prioritised children's experiences of pain as a matter of ethical obligation (Anand et al., 1985; Eccleston et al., 2021).

However, the use of restraint during clinical procedures remains a global concern. Despite its potential to cause psychological harm, restraint is inconsistently reported and poorly regulated in acute pediatric settings. In Australia, national standards to minimise restrictive practices focus largely on mental health, aged care, and disability services, overlooking routine restraint in children's hospitals (Australian Commission on Safety and Quality in Health Care, 2017).

To address this gap, initiatives such as the iSUPPORT rights-based standards advocate for ethical, trauma-informed practice through transparent documentation, clear definitions of holding types, and clinical decision-making that allows for pause and reflection when children are distressed (Bray, Appleton, et al., 2019). Complementary frameworks, such as the clinical holding decision tool by Page and Warren (2019), guide professionals to assess the

appropriateness and necessity of holding. Broad adoption of these tools requires investment in education, culture change, and system-level support.

### **Cultural challenges and clinical realities**

Decision making in procedural holding is shaped by the interaction of clinical urgency, organisational expectations, and resource limitations. Time constraints, staff shortages, and insufficient training often contribute to the routine use of physical restraint, even when clinicians recognise its potential psychological harm (Bray et al., 2019). Although healthcare providers recognise that preparation, trust-building, and child-centred communication can reduce the need for restraint, these practices are often overlooked in busy clinical settings, where the perceived urgency of procedures overrides concerns about child distress (Bray et al., 2019). This mindset warrants critical reflection. While procedures may be needed, they are not always urgent, and not all are truly essential in that moment.

Pediatric nurses are uniquely positioned to advocate for alternative approaches to restraining, including comfort positioning, the involvement of child life specialists, procedural delays, or the use of sedation (Plummer, 2016). However, the consistent implementation of trauma informed care depends on access to appropriate resources, designated space for preparation, and strong leadership support. Age related factors also influence practice, with younger children (0-6 years) more likely to experience restraint as healthcare providers report greater comfort in overriding their resistance compared to older children (Bray et al., 2015).

A recent scoping review highlights a critical gap. While some interventions show potential to reduce restraint, few are designed to prevent it, and the evidence base is largely composed of descriptive and cross sectional studies (Østberg et al., 2024). Future research must prioritise the development and evaluation of targeted interventions, using restraint occurrence as a measurable and adverse outcome. Without organisational investment and systemic change, clinical practices will continue to reflect the status quo (Østberg et al., 2024).

Cultural safety in organisations must underpin all procedural care, yet there is limited research on how families' cultural beliefs influence clinical holding. Ethical tensions may arise when family or clinician beliefs about authority or physical intervention conflict with trauma-informed or rights-based approaches. In some cultures, restraint may be seen as protective, in others, as punitive or harmful. Without explicit cultural consideration, procedural holding risks marginalising or retraumatising children and families. Healthcare systems must foster

culturally responsive dialogue, ensuring all involved understand their rights, feel safe to speak up, and can access appropriate support (Lerwick, 2016).

### **Recommendations for trauma-informed procedural care**

Trauma-informed procedural care offers an ethical, evidence-based alternative to practices that may cause unnecessary distress. It recognises that children and families can experience aspects of healthcare as traumatic and seeks to minimise harm through preparation, empathy, and supportive environments (Cutuli et al., 2019; Marsac et al., 2016; Plummer et al., 2021). A trauma-informed approach not only protects children and families from harm but also supports the wellbeing of healthcare providers. Regular exposure to others' distress increases the risk of secondary traumatic stress and burnout in healthcare providers (Berring et al., 2024). Achieving this requires training healthcare providers in trauma-informed procedural care, partnering with families, and embedding calm, coordinated, and child-centred care as standard practice. Policies must reinforce this shift by mandating training, requiring the reporting of restraint incidents, and recognising complaints related to procedural care as adverse events. Health services must also engage children and families in co-designing care environments that prioritise psychological as well as physical safety (Simons et al., 2022).

In the clinical environment trauma-informed procedural care begins before the procedure by providing honest, age-appropriate communication to reduce the child's anxiety (Moss et al., 2019; Stock et al., 2012). Preparing the clinical environment and team, and involving parents as active partners, further reduces the perception of procedural threat (McCarthy et al., 2013; Plummer et al., 2021; Svendsen et al., 2017). During procedures, the use of comfort positioning, distraction, and topical anaesthetics has been shown to lower pain and distress and reduce the likelihood of resistance and restraint (McCarthy et al., 2013; Taddio, McMurtry, et al., 2015). After procedures, reinforcing children's coping efforts, allowing recovery time, and debriefing supports emotional regulation and resilience which is key to shaping positive future healthcare experiences (Noel et al., 2015). With a trauma-informed approach, procedural care doesn't have to be painful, instead offering a safe, empowering, and collaborative experience for everyone involved.

### **Call to action**

The long-standing evidence of the psychological and emotional harm caused by physically restraining children during medical procedures underscores the urgent need for change.

Trauma-informed care offers a dual benefit by being responsive to known histories of maltreatment and serves as a preventative approach when such histories are undisclosed. The growing international consensus and standards against the use of restraint provide a framework for holding healthcare organisations accountable. However, the effectiveness of these standards hinges on their implementation. Without clear, empowering mentorship and education for frontline nurses, standards risk becoming performative and fail to shift practice. Sustainable change requires not only policy but also the practical support that enables nurses to confidently deliver trauma-informed, restraint-free care.

## References

- Berring, L. L., Holm, T., Hansen, J. P., Delcomyn, C. L., Søndergaard, R., & Hvidhjelm, J. (2024). Implementing trauma-informed care-settings, definitions, interventions, measures, and implementation across settings: A scoping review. *Healthcare (Basel)*, 12(9). <https://doi.org/10.3390/healthcare12090908>
- Bray, L., Carter, B., Ford, K., Dickinson, A., Water, T., & Blake, L. (2018). Holding children for procedures: An international survey of health professionals. *Journal of Child Health Care*, 22(2), 205-215. <https://doi.org/10.1177/1367493517752499>
- Bray, L., Carter, B., Kiernan, J., Horowicz, E., Dixon, K., Ridley, J., . . . Robichaud, F. (2023). Developing rights-based standards for children having tests, treatments, examinations and interventions: Using a collaborative, multi-phased, multi-method and multi-stakeholder approach to build consensus. *European Journal of Pediatrics*, 182(10), 4707-4721. <https://doi.org/10.1007/s00431-023-05131-9>
- Bray, L., Ford, K., Dickinson, A., Water, T., Snodin, J., & Carter, B. (2019). A qualitative study of health professionals' views on the holding of children for clinical procedures: Constructing a balanced approach. *Journal of Child Health Care*, 23(1), 160-171. <https://doi.org/10.1177/1367493518785777>
- Bray, L., Snodin, J., & Carter, B. (2015). Holding and restraining children for clinical procedures within an acute care setting: An ethical consideration of the evidence. *Nursing Inquiry*, 22(2), 157-167. <https://doi.org/https://doi.org/10.1111/nin.12074>
- Cutuli, J. J., Alderfer, M. A., & Marsac, M. L. (2019). Introduction to the special issue: Trauma-informed care for children and families. *Psychol Serv*, 16(1), 1-6. <https://doi.org/10.1037/ser0000330>
- da Silva, R. A., Tordivelli, R. S., Garcia de Avila, M. A., Bray, L., Ferraz de Almeida, G. M., Francisco, J. C., & Gaíva, M. A. M. (2024). Holding and restraining children for clinical procedures: A scoping review of health professional reported and observed practice. *J Child Health Care*, 13674935241248677. <https://doi.org/10.1177/13674935241248677>
- Eccleston, C., Fisher, E., Howard, R. F., Slater, R., Forgeron, P., Palermo, T. M., . . . Wood, C. (2021). Delivering transformative action in pediatric pain: A lancet child & adolescent health commission. *Lancet Child Adolesc Health*, 5(1), 47-87. [https://doi.org/10.1016/s2352-4642\(20\)30277-7](https://doi.org/10.1016/s2352-4642(20)30277-7)

- Forsner, M., Cyrén, M., Gerdin, A., & Rullander, A.-C. (2023). It hurts to get forced: Children's narratives about restraint during medical procedures. *Pediatric and Neonatal Pain*, 5(4), 110-118. <https://doi.org/https://doi.org/10.1002/pne2.12093>
- Foster, M., Blamires, J., Moir, C., Jones, V., Shrestha-Ranjit, J., Fenton, B., & Dickinson, A. (2024). Children and young people's participation in decision-making within healthcare organisations in new zealand: An integrative review. *Journal of Child Health Care*, 28(3), 675-692. <https://doi.org/10.1177/13674935231153430>
- Guillari, A., Giordano, V., Catone, M., Gallucci, M., & Rea, T. (2024). Non-pharmacological interventions to reduce procedural needle pain in children (6-12 years): A systematic review. *J Pediatr Nurs*, 78, e102-e116. <https://doi.org/10.1016/j.pedn.2024.06.025>
- Hay, S., Kinney, S., Richards, S., Newall, F., Hawley, M., & O'Neill, J. Parents' experiences of holding their child for healthcare procedures: A qualitative exploratory study. *Journal of Advanced Nursing*, n/a(n/a). <https://doi.org/https://doi.org/10.1111/jan.16935>
- Karlsson, K., Rydström, I., Enskär, K., & Englund, A. C. (2014). Nurses' perspectives on supporting children during needle-related medical procedures. *Int J Qual Stud Health Well-being*, 9, 23063. <https://doi.org/10.3402/qhw.v9.23063>
- Kodua, M., Mackenzie, J.-M., & Smyth, N. (2020). Nursing assistants' experiences of administering manual restraint for compulsory nasogastric feeding of young persons with anorexia nervosa. *International journal of mental health nursing*, 29(6), 1181-1191. <https://doi.org/10.1111/inm.12758>
- Lerwick, J. L. (2016). Minimizing pediatric healthcare-induced anxiety and trauma. *World J Clin Pediatr*, 5(2), 143-150. <https://doi.org/10.5409/wjcp.v5.i2.143>
- Lombart, B., De Stefano, C., Dupont, D., Nadji, L., & Galinski, M. (2020). Caregivers blinded by the care: A qualitative study of physical restraint in pediatric care. *Nurs Ethics*, 27(1), 230-246. <https://doi.org/10.1177/0969733019833128>
- Marsac, M. L., Kassam-Adams, N., Hildenbrand, A. K., Nicholls, E., Winston, F. K., Leff, S. S., & Fein, J. (2016). Implementing a trauma-informed approach in pediatric health care networks. *170*, 70-77. <https://doi.org/10.1001/jamapediatrics.2015.2206>
- McCarthy, M., Glick, R., Green, J., Plummer, K., Peters, K., Johnsey, L., & Deluca, C. (2013). Comfort first: An evaluation of a procedural pain management programme for children with cancer. *Psychooncology*, 22(4), 775-782. <https://doi.org/10.1002/pon.3061>
- McLenon, J., & Rogers, M. A. M. (2019). The fear of needles: A systematic review and meta-analysis. *Journal of Advanced Nursing*, 75(1), 30-42. <https://doi.org/https://doi.org/10.1111/jan.13818>
- Moss, K. M., Healy, K. L., Ziviani, J., Newcombe, P., Cobham, V. E., McCutcheon, H., . . . Kenardy, J. (2019). Trauma-informed care in practice: Observed use of psychosocial care practices with children and families in a large pediatric hospital. *Psychol Serv*, 16(1), 16-28. <https://doi.org/10.1037/ser0000270>
- Noel, M., Palermo, T. M., Chambers, C. T., Taddio, A., & Hermann, C. (2015). Remembering the pain of childhood: Applying a developmental perspective to the study of pain memories. *Pain*, 156(1), 31-34. <https://doi.org/10.1016/j.pain.0000000000000001>
- Østberg, M. K., Hougaard, P. F., Kynø, N. M., & Svendsen, E. J. (2024). The use and prevention of procedural restraint in children – a scoping review. *Journal of Pediatric Nursing*, 79, e110-e118. <https://doi.org/https://doi.org/10.1016/j.pedn.2024.10.006>

- Pacella, R., Nation, A., Mathews, B., Scott, J. G., Higgins, D. J., Haslam, D. M., . . . Monks, C. (2023). Child maltreatment and health service use: Findings of the Australian child maltreatment study. *Medical Journal of Australia*, *218*(S6), S40-S46. <https://doi.org/https://doi.org/10.5694/mja2.51892>
- Pillai Riddell, R. R., Racine, N. M., Gennis, H. G., Turcotte, K., Uman, L. S., Horton, R. E., . . . Lisi, D. M. (2015). Non-pharmacological management of infant and young child procedural pain. *Cochrane Database Syst Rev*, *2015*(12), Cd006275. <https://doi.org/10.1002/14651858.CD006275.pub3>
- Plummer, K. (2016, May 2016). *Procedural pain management clinical practice guideline*. The Royal Children's Hospital. Retrieved 1st of June from [http://www.rch.org.au/rchcpg/hospital\\_clinical\\_guideline\\_index/Procedural\\_Pain\\_Management](http://www.rch.org.au/rchcpg/hospital_clinical_guideline_index/Procedural_Pain_Management)
- Plummer, K. (2020). *Procedural pain management*. eviQ Education.
- Plummer, K., McCarthy, M., McKenzie, I., Newall, F., & Manias, E. (2017). Pain assessment and management in pediatric oncology: A cross-sectional audit. *Journal of Clinical Nursing*, *26*(19-20), 2995-3006. <https://doi.org/10.1111/jocn.13643>
- Plummer, K., McCarthy, M., McKenzie, I., Newall, F., & Manias, E. (2021). Experiences of pain in hospitalized children during hematopoietic stem cell transplantation therapy. *Qualitative Health Research*, *31*(12), 2247–2259. <https://doi.org/10.1177/10497323211034161>
- Shea, T., Athanasakos, E., Cleeve, S., Croft, N., & Gibbs, D. (2021). Pediatric medical traumatic stress. *The Journal of Child Life: Psychosocial Theory and Practice*, *2*. <https://doi.org/10.55591/001c.22525>
- Simons, M., Kimble, R., & Tyack, Z. (2022). Understanding the meaning of trauma-informed care for burns health care professionals in a pediatric hospital: A qualitative study using interpretive phenomenological analysis. *Burns*, *48*(6), 1462-1471. <https://doi.org/https://doi.org/10.1016/j.burns.2021.10.015>
- Stock, A., Hill, A., & Babl, F. E. (2012). Practical communication guide for pediatric procedures. *Emergency Medicine Australasia*, *24*, 641-646.
- Svendsen, E. J., Pedersen, R., Moen, A., & Bjørk, I. T. (2017). Exploring perspectives on restraint during medical procedures in pediatric care: A qualitative interview study with nurses and physicians. *Int J Qual Stud Health Well-being*, *12*(1), 1363623. <https://doi.org/10.1080/17482631.2017.1363623>
- Taddio, A., McMurtry, C. M., Shah, V., Riddell, R. P., Chambers, C. T., Noel, M., . . . Adults. (2015). Reducing pain during vaccine injections: Clinical practice guideline. *Canadian Medical Association Journal*. <https://doi.org/10.1503/cmaj.150391>
- Taddio, A., Shah, V., McMurtry, C. M., MacDonald, N. E., Ipp, M., Riddell, R. P., . . . Chambers, C. T. (2015). Procedural and physical interventions for vaccine injections: Systematic review of randomized controlled trials and quasi-randomized controlled trials. *Clin J Pain*, *31*(10 Suppl), S20-37. <https://doi.org/10.1097/ajp.0000000000000264>
- Walther-Larsen, S., Pedersen, M. T., Friis, S. M., Aagaard, G. B., Rømsing, J., Jeppesen, E. M., & Friedrichsdorf, S. J. (2017). Pain prevalence in hospitalized children: A prospective cross-sectional survey in four Danish university hospitals. *Acta Anaesthesiologica Scandinavica*, *61*(3), 328-337. <https://doi.org/https://doi.org/10.1111/aas.12846>

Wilding, J., Scott, H., Suwalska, V., Geddes, Z., Venegas, C. L., Long, D., . . . Harrison, D. (2021). A quality improvement project on pain management at a tertiary pediatric hospital. *Canadian Journal of Nursing Research*, 08445621211047716. <https://doi.org/10.1177/08445621211047716>