Assessing Knowledge Status on Comfort Positioning in Pediatric Care: A Narrative Review

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Abstract Pain prevention and comfort positioning are vital components of pediatric care, as they can help improve the experience of pediatric patients undergoing painful and/or traumatic medical procedures. A search of the literature was conducted for the purpose of assessing current best practice for comfort positioning and pain prevention in pediatric care facilities. Databases used in the search included CINAHL, US National Library of Medicine, National Institute of Health, and PubMed. The synthesis of findings from this search suggested a reaffirmation of the benefits of comfort positioning. It also suggests that pain prevention in pediatrics is extremely vital, as painful procedures without adequate comfort measures have been connected to the development of a fear of treatments and subsequently, avoidance of medical care. Outpatient clinics were observed for the purpose of assessing current practices to further assess healthcare workers' current knowledge of comfort positioning and determine next steps to further enhance pain prevention methods in pediatric care through practice standards. The observational findings highlight that there is an informal standard for comfort positioning within this hospital, despite no formal policy or practice guideline. It was observed that comfort positioning seems to be less effective for older children. Instead, they tend to prefer to be thoroughly educated on the procedure with open and honest communication to implement a feeling of having control. This suggests that comfort measures should expand beyond physical positioning, and instead expand into the way that healthcare professionals approach and speak about the procedures. These themes highlight a need to implement a set of guidelines for comfort positioning and pain prevention in pediatric facilities. Formal guidelines would encourage standardized and evidence-informed practice for pain management strategies.

INTRODUCTION

Pain prevention and comfort positioning are vital in improving the experience of pediatric patients undergoing painful or traumatic medical procedures, as they can result in trauma and many long-term effects. This can include reexperiencing the event through flashbacks, avoidance of reminders of the trauma, and hyperarousal (Lerwick, 2016). Medical trauma can result in mistrust in healthcare systems leading to less adherence to treatment in the future, and thus causing poorer health outcomes (Kassam-Adams & Butler, 2017). Avoidance of healthcare can result in the patient allowing their condition to worsen significantly before having no choice but to access care (Kassam-Adams & Butler, 2017). Mistrust in the healthcare system is a major factor in the avoidance of healthcare as an adult (Leyva et al., 2020). This illustrates the need for preventing healthcare trauma, even in early childhood, as this can have lasting effects. Healthcare avoidance can cause delays in symptom presentation and treatment. Healthcare avoidance is also associated with increased morbidity and mortality, thus yielding adverse health consequences (Leyva et al., 2020). The majority of the literature examined suggests that practices like comfort positioning and pain prevention can prevent medical trauma in the pediatric population. The purpose of this project is to assess the current knowledge of comfort positioning and pain prevention in health literature, as well as assess practices at a pediatric hospital in Nova Scotia, Canada to assess current knowledge of comfort positioning and determine next steps to encourage standard practice.

Comfort positioning is a series of measures taken to provide a sense of emotional, as well as physical, security by limiting behaviours which can worsen the experience for the patient, caregiver, and healthcare professional (Children's Hospital of Philadelphia, 2017). Comfort positioning is a way of positioning the patient so they cannot interfere with care, similar to a restraint; however, comfort positioning tends to include resources which give the sense of safety rather than immobility, and avoids the exacerbation of a situation that restraint may cause. Intense negative reactions can be distressing for the parent to watch, for the child to experience, and for the healthcare worker to facilitate or observe. Pain prevention methods in pediatric care, as outlined by the Canadian Paediatric Society (2019), involve the encouragement of minimally invasive approaches and simple strategies to improve the healthcare experience. They suggest the use of topical analgesics for procedures which are necessary but may be acutely painful, as well as combining physical, psychological, and pharmacological pain minimization strategies (Canadian Paediatric Society, 2019).

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LITERATURE REVIEW

How knowledge was assessed

To begin the assessment of current knowledge, a literature review was conducted by using various databases such as CINAHL, US National Library of Medicine, National Institute of Health, and PubMed. The general consensus supported the practice of comfort positioning as a way to prevent medical trauma in the pediatric population. The literature review served as an introduction to comfort positioning and pain prevention, as well as a precursor to the observational aspect of this narrative review to assess the current knowledge of pain prevention in a tertiary care centre.

For the assessment of knowledge in a Halifax hospital, data were collected through observation and, in some cases, family or patient interviews. Data was observed – with verbal consent from the family, staff, and patients – in the following units: Ear Nose and Throat (ENT) Clinic, Orthopedic Clinic, Hematology/ Oncology Clinic, and Pediatric Assessment Clinic. A day for observation in the Dentistry Clinic was not possible due to scheduling conflicts, but the nurse educator was interviewed regarding the typical measures used. Observations were made regarding the patient's age, the procedure being done, the location in the Health Centre, the position of the patient during the procedure, the level of caregiver involvement, any prior educating, and the use of Child Life services if applicable. All interviews were conducted during routine appointments in the ENT clinic. The families were interviewed about past procedures, as most of the children had chronic illnesses and had undergone many procedures over the past few years. The family and patients were asked what they found helpful or unhelpful from the staff, in terms of minimizing pain and encouraging as much comfort as possible. Interview transcripts were compiled, and identifying factors were removed to anonymize the data.

Findings of comfort positioning and pain prevention in existing literature

The literature found regarding comfort positioning suggests a reaffirmation of the benefits of comfort positioning. A study by Skaljic et al. (2020) involved pediatric patients on a dermatology unit. This study found that various methods of comfort positioning were shown to reduce patient stress and improve cooperation. A similar study by Piazza et al. (2019) focused on pediatric patients in need of blood draws and pain management methods used by phlebotomists. The most frequently used measures were verbal communication (explanations, reassurance, etc.), comfort positioning, and other means of distraction. This also tends to create a sense of familiarity and security, as opposed to restraints which may have the opposite effect. Piazza et al. (2019) used a survey style questionnaire to get patient/family feedback on comfort positioning used and found these measures greatly improved patient satisfaction. Improvement of patient satisfaction can re-establish the patient's trust in the healthcare system and prevent future health issues related to avoidance of healthcare.

The literature also suggested that pain prevention in pediatric care is extremely vital as childhood medical-related pain has been connected to the patient developing a fear of treatments, and thus an avoidance of future medical care (Ali et al., 2016). Unfortunately, a significant knowledge-practice gap exists wherein evidence-based interventions to manage such pain and distress are under-utilized (Shave et al., 2018). A study by King et al. (2011) highlights that chronic pain is a significant problem within pediatric medicine; however, the prevention and treatment of pain in pediatric patients is often inadequate and infrequent (Friedrichsdorf & Goubert, 2019). Friedrichsdorf & Goubert (2019) advocate for the prevention and treatment of pain in children with recommended analgesic starting doses.

Observations of comfort positioning and pain prevention in the Halifax hospital Pediatric Assessment Centre (COVID-19 Testing Facility)

In the Pediatric Assessment Centre (PAC), nasopharyngeal swabs on children aged 6 months to 12 years were observed. For these procedures, they first assessed if the patient can independently tolerate the swab. Then, they placed the child on the caregiver's lap so the caregiver could hold their child. Children who needed positioning were typically under 6 years old, so they were on their caregiver's lap. The caregiver hugged the child with one arm so that they were keeping both the child's arms down and out of the way. Their other hand was used to hold the child's head still. Older children did not require positioning during this round of observation and tolerated the procedure well. Caregivers were instructed on how to position their child, and the nurse would explain the procedure in age-appropriate terms (using phrases like "I am going to tickle your nose", "I need to get some boogers from you", etc.). If the comfort position did not work, the next step would be to have the patient remain in the caregiver's lap, but have a nurse perform the hold. If this was unsuccessful, they would have 1-2 additional nurses assist with the hold and have the parents comfort the child after the procedure.

Hematology/Oncology Clinic

In this clinic, Port-A-Cath accesses in children ages 4-6 years were observed. In one procedure, the caregiver was sitting behind the patient in bed with the patient in their lap, as per comfort positioning. Additionally, the caregiver put their legs over the child's legs for safety. In another procedure, the caregiver was beside the bed on a chair holding the child's hand. Topical anesthetic was used in most cases and some patients preferred distraction methods such as chewing gum, watching videos on the iPad, and more.

Ear Nose and Throat Clinic

In the Ear Nose and Throat (ENT) Clinic routine appointments involving otoscopes and nose/throat exams for trajectory of pre-existing ENT conditions for children ages 3-8 years were observed. In these assessments, the methods of comfort positioning were the same for many different assessments. The first step was to have the patient sit on the caregiver's lap. The caregiver used one hand to stabilize patient's head, and the other hand to hold the patient's arms down. After one appointment, the parents were interviewed and since both their children underwent many frequent procedures in the last several years, they were accustomed to different tactics of positioning and knowledgeable as to what was most helpful. Upon being asked what made the procedures more comfortable and the caregiver said they appreciated the nurses doing the positioning and letting them comfort their child afterwards, as positioning can be traumatic for the caregivers as well. Patients who were interviewed stated things like "I appreciated being told 'this likely will hurt but I will be here for you to help any way I can.', instead of saying it will not hurt when they know it will hurt". They also stated appreciating receiving education prior to the procedure, so they feel like they "have a sense of understanding of control."

Orthopedic Clinic

In this clinic, Peripherally Inserted Central Cather (PICC) line removals were observed. During this procedure, the patient was sat on another nurse's lap with PICC arm stabilized and the other arm held down. In this case, the caregiver opted to not be involved in positioning, instead providing comfort after the procedure. The patient was shown how a PICC line will be removed on a doll and then was offered the chance to take the doll's "PICC line" out. This was to give the child some understanding of the procedure to limit

fear. Cast removals were also observed in this clinic. In this procedure, the patients were offered earmuffs to mute the noise of the cast cutter. The patient was sitting on the edge of the bed with casted arm on a pillow. The caregiver was beside the bed providing emotional support and holding other hand.

Dentistry clinic

In this clinic, observation was not possible due to scheduling conflicts; however, the nurse educator was contacted and was available for interview on positioning used in the clinic. They mentioned that typical positioning included having the patient sit facing their caregiver, then lean back and lay their head into the working space for the dentistry staff.

Limitations

The main limitation for this project was the lack of diversity in the age of the children. Many of the children observed were under the age of 12, because the older children generally did not require positioning. This results in many of the comfort measures listed being catered to children who are young enough to still feel comforted by their caregiver's embrace. Many of the comfort measures surround being held by the parents, but for an older child to be held down, this may feel more restraining than comforting. The lack of older children undergoing observed procedures for the duration of this project limits this project from providing care guidelines for positioning an older child and could be a direction for future studies.

Another limitation was the hesitancy to interview families following a traumatic procedure. The interviews were limited to one clinic and may not have applicable information to other clinics in the Health Centre. A future project which should include patient and family input and may benefit from a survey style questionnaire that could be done at home by the patient and family. This procedure would allow patients and family to answer the questionnaire in the comfort of their own home.

The final limitation noted for this review was the limited timeframe, and thus limited number of units observed. Future studies may benefit from assessing more units to access a larger sample population, and consequently observe a wider variety of practices.

Discussion of current practices

The observational findings in this study suggest that there is a standard for comfort positioning within this hospital, despite the absence of a formal policy or practice guideline. The literature review and observational findings led to the establishment of practice guidelines for the Health Centre that are awaiting approval and implementation. Overall, a central theme noted was that comfort positioning is effective for younger children but may be less effective for children over the age of six, as they were observed to refuse comfort positioning methods, and instead preferred to be thoroughly educated on the procedure. One patient even stated they felt it gave them a "sense of understanding or control". This suggests that comfort measures should expand beyond physical positioning and be incorporated into the way healthcare professionals approach and speak about the procedures with children 12 and older.

Implementation of new comfort measures practice guidelines

The observational findings in this study suggest that there is a standard for comfort positioning within this hospital despite the absence of a formal policy or practice guideline. The literature review and observational findings led to the implementation of practice guidelines for the Health Centre. We used the existing practices (such as: placing the patient in the caregiver's lap, having the care giver "hug" the child to hold them still, having the caregiver hold the head still if the procedure involved the face, and other previously mentioned observations) as a template for formal guidelines and supplemented the guidelines with existing literature from other hospitals and what their standards are. These guidelines are now publicly accessible and can be used to support change and implement guidelines in other establishments. These guidelines can also be used to support future pain management policies. Furthermore, the discussion of comfort positioning is now used for the training of all clinical staff at this hospital, and these guidelines can help assist this training. All these uses will ultimately contribute to minimizing pain and encouraging comfort in painful procedures.

Incidence and impact of pediatric medical trauma stress

Current literature suggests that pain prevention and comfort positioning are vital to preventing medical trauma which can result in many negative long-term effects. Kassam-Adams and Butler (2017) define pediatric medical traumatic stress (PMTS) as "psychological and physiological distress responses related to their medical event and subsequent medical treatment experiences—which can lead to symptoms of posttraumatic stress disorder (PTSD) and suboptimal health outcomes". These reactions can include reexperiencing, avoidance of reminders of the trauma, hyperarousal, and more (Lerwick, 2016). Painful or frightening experiences in care can be psychologically traumatizing for pediatric patients. Trauma symptoms related to medical events are often associated with poorer health outcomes including decreased adherence to treatment or poorer health-related quality of life for up to two years posttreatment (Kassam-Adams & Butler, 2017). An additional systematic review by Price et al. (2016) extracts literature around PMTS and suggests that it is involved in many pediatric medical cases, across a wide variety of illnesses and acuity. This suggests that PMTS is not localized to one type of care intervention but present throughout. Lerwick (2016) also found that a variety of episodes of care – including preventive clinic visits, acute care, medical procedures, and hospitalization – can all be just as traumatizing for pediatric patients for a variety of reasons. Restraint, painful procedures, unknown environments, panicked looks from healthcare professionals and parents, expressions of grief without explanation, and so many more factors can all contribute to the experience leaving a negative memory in the pediatric patient's mind.

These traumatic events and negative memories have many long-term effects as well. Adams & Butler (2017) highlight in their article that medical trauma can result in mistrust in healthcare systems leading to less adherence to treatment in the future, and thus causing poorer health outcomes. This underscores how vital it is to maximize patient satisfaction whenever possible. Avoidance of healthcare can result in the patient allowing their condition to worsen significantly before having no choice but to access care. Leyva et al. (2020) performed a data analysis on the reasonings for medical care avoidance in older adults. They found that mistrust in the healthcare system was a catalyst in the avoidance of healthcare as an adult. This illustrates the need for preventing healthcare trauma, even in early childhood, as this can have lasting effects. Healthcare avoidance can cause delays in symptom presentation and treatment and is associated with increased morbidity and mortality, thus yielding adverse health consequences (Leyva et al., 2020).

Specific challenges in pediatric care

The main challenge within pediatric care is the involvement of the family and involving them in care. Painful or stressful events can result in high levels of post-traumatic stress among not only the

patients, but the family as well. This highlights the importance of family-centered care and considering the effect that treatment may have on the family. Viewing a loved one experience a traumatic event may also result in stress. Family-centered care can also ensure the child has adequate supports post-treatment to help them heal. The National Child Traumatic Stress Network (2017) outlines the many barriers to healing from trauma including: financial or economic struggles, scheduling conflicts (school), lack of access to transportation, or lack of access to childcare. They also indicate that family engagement can help significantly improve the likelihood of success in trauma treatment. Similarly, having the parent be a person of comfort following a painful procedure can have a similar effect. Therefore, engaging the family, whenever possible, in their child's care can ultimately benefit the patient and improve their experience.

Further complicating this aspect of pediatric care are the restrictions involved with the COVID-19 pandemic. Nova Scotia Health Authority (2021) has established restrictions on who can accompany a patient into their care. If procedures are reoccurring, the patient may have gotten used to specific person joining them. With these restrictions, significant changes to routine may also be a factor of stress with medical procedures. Additionally, if a patient feels secure with both parents but is only allowed one support person, they may feel distressed and focused on the caregiver that cannot join them. Younger kids who may not understand the implications of the pandemic and the reasoning behind the restrictions may also feel confused which can add further stress (Virani et al., 2020).

CONCLUSIONS

Pain prevention is a vital aspect of pediatric care, involving many aspects, including comfort positioning which had been observed in this study to increase patient satisfaction. Comfort positioning should include the way that healthcare professionals approach and speak about the procedures. These procedures play a vital role in preventing significant trauma for both the patient and their families, which can result in several negative long-term effects. These all help improve healthcare experiences, not only for the patient, but also for their family or accompanying caregivers as well as healthcare providers.

Implementing these measures and creating a formal practice guideline can help improve patient satisfaction and reduce medical trauma in pediatric care. Continuing to use existing pain prevention methods, and to create a focus of trauma prevention in pediatric care, can help prevent negative associated health risks and future healthcare avoidance.

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Conflicts of interest

This author declares no conflicts of interest

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