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Pediatric Procedural Pain-How Far Have We Come? An Ethnographic Account

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Abstract

In this ethnographic study, the author explores the pediatric procedural pain management practice of healthcare providers in a non-pediatric emergency department. Data were collected for 5 months with over 100 hours of observation. Six key informants were interviewed, and 44 pediatric procedural interactions with 27 healthcare providers during the treatment of children two to eight years of age undergoing procedures were observed. Other information gathered included documents from the institution, and pain related information from the patient's medical record. Two major themes with categories are discussed, the treatment of pain, and procedural pain. The findings of this study provide insight to the everyday practice of emergency department healthcare providers for pediatric pain in a non-pediatric setting, and identify practice issues that may adversely affect the management of pediatric procedural pain, notably the non-use of pharmacological techniques for simple needle procedures and the common use of physical restraint during painful procedures.

Keywords

pediatric pain; procedural pain; pain management; emergency nurses; qualitative; ethnography; participant-observation

For the past four decades researchers have contributed to the extensive literature on pain management. An area which has gained more attention by clinicians and researchers is that of procedural pain. As a category of acute pain, children have identified diagnostic and monitoring procedures as the most feared and painful of events (Cummings, Reid, Finley, McGrath, & Ritchie, 1996; Kortessluoma & Nikkonen, 2004; Lioffi, 2002; Petovello, 2012). The most common source of procedural pain has been documented to be needle pain (Blount, Piira, & Cohen, 2003; Cohen, 2002; Ortiz, Lopez-Zarco, & Arreola-Bautista, 2012; Rogers & Ostrow, 2004; Uman, Chambers, McGrath, & Kisley, 2006).

When pediatric pain is inadequately treated, it can lead to physical and psychological consequences (American Academy of Pediatrics & American Pain Society, 2001). Multiple

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researchers have documented both the short-term and long-term effects from inadequately treated pediatric pain, especially in younger children (Blount et al., 2003; Schechter, Berde, & Yaster, 2003). Evidence suggests that early painful stimuli might permanently alter the neuronal circuits that process pain in the spinal cord.

Melzack (2001) proposed in his neuromatrix theory of pain that pain is a multidimensional experience produced by characteristic neurosignature patterns of nerve impulses generated by a widely distributed neural network. The neurosignature output pattern is determined by multiple influences that converge on the neuromatrix. The neurosignature pattern is modulated in part by sensory inputs, but also by cognitive events such as psychological distress (Melzack, 2001).

While there are a multitude of research based evidence that has examined the efficacy of using both pharmacological (Cregin et. al., 2008; D'Arcy, 2007; Meunier-Sham, & Ryan, 2003) and non-pharmacological (Carlson, Broome, & Vessey, 2000; D'Arcy, 2007; Lassetter, 2006) interventions, there remains a gap between available pediatric procedural pain management and actual practice in the ED clinical setting (MacLean, Obispo, & Young, 2007; Mathews, 2011; Ramponi, 2009).

In the US the vast majority of children are cared for in non-pediatric hospital EDs (American Academy of Pediatrics, Committee on Pediatric Emergency Medicine, 2007; Gausche-Hill, Schmitz, & Lewis, 2007). In 2007, a survey which assessed the degree of pediatric preparedness of EDs in the US showed that 89% of pediatric visits occurred in non-children's hospitals and 26% of visits occurred in rural or remote facilities (Gausche-Hill et al, 2007). Those statistics are significant as studies have continuously found pain management to be deficient in pediatric patients treated in the ED setting (Alexander & Manno, 2003; Bhargava & Young, 2007; Brown, Klein, Lewis, Johnston, & Cummings, 2003; Cimpello, Khine, & Avner, 2004; Cordell, et al., 2002; Drendel, Brousseau, & Gorelick, 2006; MacLean et al., 2007; Probst, Lyons, Leonard, & Esposito, 2005; Rupp & Delaney, 2004).

Few studies have examined pediatric procedural pain management practices in the ED setting. Of those studies located, examination of pediatric procedural pain management in the ED has been limited to emergency departments located in pediatric hospitals (Bhargava & Young, 2007; MacLean et al., 2007; Meunier-Sham & Ryan, 2003). The majority of studies conducted in the ED setting (Alexander & Manno, 2003; Cimpello et al., 2004; Fry, Holdgate, Baird, Silk, & Ahern, 1999; Johnston, Bournaki, Gagnon, Pepler, & Bourgault, 2005; Kim et al., 2003; Todd, et al., 2007; Wong, Chan, Rainer, & Ying, 2007) examined practice patterns of clinicians treatment of acute pain as a primary complaint such as abdominal pain, or fracture.

Little is known about how pediatric procedural pain is managed by healthcare providers in a non-pediatric emergency department unit. Therefore, one of the purposes of this study was to explore and describe the ways healthcare providers evaluated and treated pediatric procedural pain in a non-pediatric emergency department. This report is part of a larger ethnographic study on pediatric pain management in the non-pediatric ED.

Method

Ethnography was selected because the method is a systematic attempt to learn cultural meanings and motives which lie at the base of social actions. Ethnography is the study of culture where the intention is to collect data from real life situations undistorted by the researcher (Pole & Morrison, 2003) this provides detailed, descriptive data that can be used as background information for understanding human behavior by practicing nurses and clinicians (Aamodt, 1982). This focused ethnography was structured around a distinct problem; pediatric procedural pain management practices and the problem was examined within a specific context; the non-pediatric ED (Roper & Shapira, 2000). Approval to conduct the study was obtained from the institutional review boards of Rutgers, the State University of New Jersey and the hospital where the ED was located.

Participant Observation

The research was centered on healthcare providers' treatment of children 2 to 8-years of age undergoing procedures in the ED. The majority of data collection was through participant observation. Over 100 hours of observation were completed in a suburban based ED located in Central New Jersey. Observation sessions in the ED varied from 4 to 7 hours three times per week at varying times and days during the study period. A majority of observations were conducted in the prompt care area of the ED as children visited this area of the ED in a more predictable pattern. Field notes were written within 24 hours of the observation. The collection of data took place over a 5 month period to achieve repetition of data, achieve theoretical saturation, and to ensure a full accurate description of the phenomenon under study.

Interviews

Key informants consisted of six participants (five nurses and one emergency technician). All could speak, read, and understand English. There were five females and one male whose ages ranged from 31 to 55-years-old (mean = 46). Key informants helped to explain subtleties of the ED culture and provided insight into their role in the management of procedural related pain in children.

Semi-structured interviews were scheduled with all key informants. The focus of the interview was to openly discuss the management of procedural related pain of children in the emergency department. The preliminary semi-structured interview questions were used during the first interview, for subsequent interviews, the question format was expanded based on information gained during observations, and content discussed in previous interviews. Informal conversations with key informants and participant nurses, technicians, advanced practice registered nurses (APRNs), physician assistants (PAs), and physicians during the observation period were used to extend the observational data and to clarify the meaning subjects themselves attributed to a situation. Informal questions focused on thoughts about procedure related pain in children, the influence of participants having children, interpretations of children's behavior and feelings of how the overall procedure transpired. Informal questions added to observations and served to confirm what was observed. Informal conversations were incorporated into observation field notes.

Documents

Information was gathered from the child's electronic emergency chart related to pain documentation, pain assessment, type of pain scale utilized, procedures performed, type and amount of analgesic prescribed and administered, and notes specific to the child's pain experiences. The researcher reviewed charts while patients were in the ED; no retrospective chart review was conducted. The review of documentation during a patient's stay confirmed or clarified discrepancies between what was done versus what was documented by participants. Other documents included hospital and ED policies regarding the assessment and management of pain in children to understand if patterns of behavior related to procedure related pain were guided by institutional policy or individual practices.

Analysis

Data analysis occurred simultaneously and continuously with data collection. The process of data analysis followed the procedure developed by Leininger and McFarland (2006) which provided for a four sequenced phase of analysis. Ethnographic analysis was inductive and iterative it involved building on ideas throughout the study, and searching through collected field notes to discover the cultural patterns of the social situation.

The 44 individual case studies were entered into a Microsoft Excel Spread Sheet where the age, chief complaint, pain scale score, and comments and behaviors of the parent, nurse, technician, APRNs, PAs, and physician were broken down, coded, and analyzed. The codes for analyzing behaviors were developed both inductively and deductively guided by the Davis observation code (Walters, Prideaux, Worley, Greenhill, & Rolfe, 2009), the Proximal-distal model of children's coping and distress during painful medical procedures (Blount, Bunke, & Zaff, 2000), Comfort theory and practice (Kolcaba, 2003) as well as readings from the nursing, dentistry, and medical literature (Abbe et al., 2007; Ramponi, 2009; Schechter, 1989).

Interview transcripts were transcribed verbatim by the researcher. The researcher then reviewed the transcripts and audio recordings line by line for accuracy. Interview transcripts were then entered into the Ethnograph version 6.0 database software program (Seidel, 1998). Transcripts were constantly compared against each other to look for patterns of similarities and differences. Data were simultaneously coded and analyzed as it was collected. ED observational field notes, transcribed formal interviews, informal conversations, documents, and reflexive journals were used as the basis of analysis.

Findings

Treatment of Pain

Healthcare providers used a combination of pharmacological therapy, and nonpharmacological therapy to manage a child during procedures. The following case study exemplifies the treatment of child who presented to the ED in need of sutures to the head.

Case: A 3- year-old is brought to the ED for a laceration on the chin. The boy clings to his mom as they walk into the prompt care area. The mom sits in the chair with the boy on her lap. The PA approaches the mother, "We are going to start this,

[lidocaine, epinephrine, and tetracaine] L.E.T. to help with the pain. Can I look?" The PA stands to the left and attempts to examine the injury. The mother attempts to distract the boy with his Lightning McQueen toy matchbox car, but the boy turns his head to the right, in the opposite direction and starts to cry. As we walk away from the mother and boy the PA says, "He's going to fight, this will not be good." After 3 doses of L.E.T., I walked into the room with the PA to observe the sutures on the chin laceration. The technician was in the room and the boy was placed on the stretcher.

The technician started to wrap the boy in a sheet. The technician took a folded sheet placed it behind the boy and brought the sides toward the front and folded it over the boy's body. She tucked the loose side pieces under the boy's sides. The boy was crying before, but started screaming and fighting, pushing up on his legs to break free from the sheet. The mom backs away from the stretcher while the staff attempts to secure the child, mom threw her arms up in the air while standing off to the side and looking at her son, "You just tell me what you want me to do." The technician in a calm and flat voice said, "I will hold his head, you hold his body." The nurse enters from the doorway, "You need help?" The PA and tech look at him, "YES.". The nurse comes in and takes a bed sheet and folds it over and over and places it underneath the child's head, but the sheet is too thick. So the nurse removes the sheet unfolds it once or twice and reinserts the sheet under the child's shoulders. The head is now slightly hyper-extended. The PA moves to the right side of the stretcher she takes a piece of gauze and applies direct pressure on the chin laceration. She says to the mom, "It's numb, you see how it's white, the medicine is working." The nurse holds the boy's head midline. The tech is to the left of the stretcher holding down the boy's pelvis, and the mom holds his feet. The boy continues to thrash around the stretcher. The PA is preparing the suture material and says, "That's good, hopefully he'll tire out before I get there." "That's wishful thinking" retorts the nurse. The boy continues screaming and fighting, "NOOOOOOO! NOOOOOOO! STOP IT!" His body is the color of a cherry. He starts to gag on his on saliva and mucus. The nurse continues to hold the boys head midline and stable and in a moderate voice he says, "It's alright buddy, just calm down, calm down." The PA stands there waiting for an opportune time to insert the first stitch, but the boy violently fights back against the restraint. The nurse and PA are making small talk with the mother, the boy continues to scream. The PA says, "If you just kept still, and stop moving things would go faster, and of course you don't understand that concept." The boy starts to cough in the PA's face, she backs away slightly every now and then. "He'll be tired tonight" said the nurse.

"Don't let him go, get Bacitracin and a band-aid," directed the PA. Once the ointment and band-aid were on the staff released the boy from his restraints, "Donne, Donne," he reached for his mother and she reached for him. His entire body and head were bright red. His mother went to wipe his tears and push his hair away from his face. His blonde hair contrasted with the bright redness of his skin. He stopped crying, his mom "Shhhh, shhhh" in gentle tones "all done." The boy did not cry anymore he looked behind him, above him, to the side of him, and maintained a watchful eye that no one was approaching him anymore. The procedure start time 19:10. Procedure end time 19:44. (Field Notes,04/18).

Pharmacological—All participants identified pharmacological treatments such as the use of opioids, oral and topical analgesics as the gold standard for the management of procedural pain. The use of the L.E.T mixture gel was the most regularly used treatment prior to suturing any individual, young child or adult, who presented to the emergency department. Graham summed up the use of L.E.T gel application:

You see that we are big time in with the cuts and everything, we're using the L.E.T gel application. Is that as effective as a straight Lidocaine injection? Probably not. We try to kind of wing it, I mean cause you can see it working, the skin starts blanching, so you kind of can see it visually happening. You have no sure shot way of knowing if it's the whole area affected by the L.E.T gel... I think you could say about pediatric either [they're] going to be pain tolerant or you're not because there are some children who go through the procedure magnificently, they don't shed a tear, they don't squiggle, they don't worm, we don't have to restrain. Then others it's just a hot mess (laughing) from start to finish, so I think pain medicating is rough.

The use of L.E.T. gel was understood as a given treatment for a patient who presented to the emergency department with a laceration. No participants were observed to use pharmacological interventions during the implementation of needle work that involved IV insertion, or blood work.

Non-Pharmacological—To participants, non-pharmacological treatments were viewed as comfort measures. For them, comfort measures addressed the physical or psychological needs of the patient through an appropriate and timely intervention that projected caring and empathy. The implementation of comfort measures was intermittently observed in the care of children during procedures. Key informants identified that the goals of comfort measures were to make the experience more tolerable.

(Lizza) Because children don't understand, they're immature their brains, they don't understand what we're doing or why...anything that you can do to make that a pleasurable, ah, a tolerable experience, because I don't think coming to a hospital is pleasurable for anybody, but tolerable to a child so that they're not so frightened that they know it's a safe place, that they know they can go to again if they get sick, that the staff is going to treat him nice.

(Graham) I think their comfort matters. I mean do I see a difference in their pain scale? No, but if they're comfortable they're more willing to go through the experience where as opposed to not fighting it tooth and nail from start to end. I mean you could some how, just find one connection, you know I think you're starting to get them into a comfort zone, they're not going to be overly comfortable because they are out of their area, but I think you can see them being more at ease, they're more willing to allow you into their world, into their personal space whatever that is, that arms length distance, you can get into their personal space more easily.

When speaking to the participants, they prided themselves on the fact that they had stuffed bears that they could give to children; however the distribution of bears was highly

dependent on who was scheduled to work that day. Certain providers were more apt to give a stuffed bear as a comfort measure, while other providers did not give anything. Rewards were used rather infrequently, while there was an entire room filled with stuffed bears, the bears were not given out on any regular basis.

We have them, nobody gives them out, I mean this back room is just like filled with them. It's not easy being in an emergency room especially for a kid you don't understand what's going on, all these big people doing stuff and there's no payoff. I think as a kid and it's all about getting something that you enjoy even a little teddy bear or book or something it kind of lessens in their mind the whole experience, the traumatic experience of coming to an emergency room.(Graham)

The Rule of Efficient Delivery—For participants, the rule of efficient delivery was a favored technique to decrease psychological trauma, and discomfort for the child. The idea was to perform an invasive activity with speed and efficiency to completeness. This was best illustrated by the following participant:

(Ginelle)To get it done with as quickly as possible and without causing too much stress to the child and the parent, to be quick and accurate. You want to be quick because you don't want them to be stressed for a long time and usually once it's over they are okay with it, and then of course you want to be accurate because you don't want to stick them twice. Whatever it is that you are doing, you want to do it quickly to get it over with, so that the anxiety will be reduced. So get it done, get it done right the first time, and get it done quickly so that they can get over that trauma.

The rule of efficient delivery was considered such an important aspect to managing a child's procedural pain that one participant adopted a special term for the technique and referred to it as the "gone in 60 seconds rule" a pun of the fast paced car movie with Nicholas Cage. One key informant described the technique:

The biggest stress of a child is being held; believe it or not it's not so much the needle stick, sure it hurt's for the 10 seconds that you're going in to draw blood or put an IV in, the younger ones they stress about being held down the most. So I have a gone in 60 seconds rule for I would say 6 to almost 14 because they stress about the needles. You have everything ready, you come in, you don't say too much, well we need to take the little blood here, needles in and out, and you're gone in 60 seconds before they've had time to think about it, to stress about it or cry about it, so I have a gone in 60 seconds rule.

Procedural Pain

On the ED, the most common procedural related pain included the application of sutures, venipuncture, and peripheral intravenous catheterization. The management of children during pain related procedures differed from pain related to disease and other etiology in two ways; that is, the use of physically restrictive devices and the use of experts.

Restraints—Unlike positioning where a child's comfort assumed primacy, the goal of restraint was to safely allow for ease and accessibility to the area in need of attention or repair. The use of physical restraint was used for children who were considered unable to keep still, too young to understand any explanation, and for children who were considered inconsolable and combative. Physical restraint provided the healthcare provider with control over the situation to maintain the child in a safe position in order to conduct an invasive procedure. Some of the younger children were referred to by the staff as, "small and mighty". The staff power required to restrain a young child ranged from two to three people. Holding down a child or physical restraint was a standard procedural technique used in the ED. For participants it was seen as a necessary component of care.

(Graham) For the most part most of them [parents] understand, it has to be done, and if we hold them down they're gonna get a better result. Some of the mothers or fathers they don't understand the screaming escalates and they think it's from what we're doing, but really it's from the child or anybody in general being restrained and can't move, and it escalates which in turn gets the kid even more riled up.

(Ginelle) With regard to the younger children 2, I mean you really can't tell them too much. I'm sure some of them understand but at that age they're just screaming so it's just better to get it done.

While the practice of restraint was commonly used in the department for the care of children during procedures, participants did not document the use of any restraints. As part of the socialization process of the researcher a mini-orientation informational session designed for students, interns, and temporary staff, both written and verbal information were provided regarding the policy of restraint use in the institution. The following definition was from the orientation information guide:

A restraint is defined as any manual method of physically restricting a person's freedom of movement, or normal access to his or her body, material, or equipment, attached or adjacent to the patient's body that he/she cannot easily remove.

In the ED, white linens would be wrapped around the child and tucked under the child's body to use as a counter weight. The use of either or both, parents and healthcare providers to hold the head, legs, and feet were common practice. Certain cases required the use of three people to assist in the restraint of a child. Depending on the severity of the injury, a child could be restrained in a position for less than a minute or as long as 40 minutes. One of the informants illustrated the challenges to using restraints on children:

(Lain) I think it's more traumatizing and it does induce pain because the patient is moving about trying to get loose, screaming, hollering, contracting muscles. Let me give you an example before I became a nurse my child, my oldest one, needed stitches and they put him in a papoose, that was traumatizing for me as a parent. I mean now that I'm a nurse I understand why, but it is traumatizing for both parties, because the parent is saying oh my god my child's in pain I can't do anything for them, and the little person is also like you're suppose to help me.

The frequency of using physically restrictive devices during suturing was considered routine and common place that participants took for granted the need to effectively prepare the family for the procedure. The following example best illustrates this dynamic:

A 2-year-old is brought in for a 2.5 centimeter laceration to the right forehead. The mother approaches the work station and speaks with the PA about getting her child a drink.

PA: Well, if we are going to tie her down she might get upset and make herself nauseous. The mother's eyes widen and her mouth opens as she turns away and says, "tied down?" She lifts her hand to her head in disbelief. The PA rises out of the chair and walks quickly toward the patient room to clarify for the parents and family what was meant by tie down. (Field Note, 06/11)

Experts Performing Invasive Procedures—Emergency nurses, and technicians varied in their degree of experience and comfort performing invasive procedures on young children. For instances where a procedure was needed and the emergency nurse or technician felt limited in their ability or was uncomfortable to perform the task an expert was called in to assist with the situation.

For participants who were considered experts, there was an increased pressure to succeed in the task. This was illustrated best by this informant:

I think I do a pretty good job. I usually only have to stick'em once, umm luckily have had the experience under my belt that I don't get intimidated by a child. I've put an IV in a 2 day old already in the foot cause I had too, and I felt a lot of pressure because I knew the kid needed IV antibiotics and they came and got me and I was like, oh I got to get this line in, you know I felt the pressure of it this has to get in this kid, this isn't an option for me so there's stress and pressure. (Lizza)

Participants who dealt with children on a regular basis in the department were sought out by their peers and the constant referral to attend to children developed their pediatric skills further. Reliance on the use of experts by some participants perpetuated the lack of comfort and general uneasiness of working with children.

I just think once you become seasoned and start becoming good and caring about your job...if you care about what you do...its gonna show in every aspect of how you treat a patient especially a pediatric patient. I mean you have to have really good skills, you have to be a people person, you have to know intuitively what to do in a baffling situation. It just comes to you without having to look for it. Your first response is the right one...it's not something you have to think 2 + 2 is 4 it's not like that, it's you see something and you become it...It's very fluid, I mean you become very fluid in what you do, and I think after awhile you just intuitively know what to do...I mean sometimes there's no time to think, some people have to think about things, and there's people I imagine you see that have to think too much. (Graham)

The management of pediatric procedural pain is a complex process. It requires the utilization of limited resources in the ED that include time and personnel. In their position statement on

pediatric procedural pain management, the Emergency Nurses Association advocates for pediatric procedures to be performed by healthcare providers with sufficient technical expertise to minimize pain to the greatest extent possible (Emergency Nurses Association, 2010).

Discussion

As previously mentioned, this study is unique in that it describes the practices of healthcare providers in a non-pediatric ED, more specifically, how they managed pediatric procedural pain. No other study has examined pediatric pain in a non-pediatric emergency department from this perspective. This study provides a window into the care of children during painful procedures in the ED setting.

In this study, participants did not use standardized assessment or measurement tools for procedural pain, and participants did not measure pain intensity related to common diagnostic or therapeutic procedures of children in the ED. While participants were aware that a procedure would inflict a certain degree of pain that consideration did not alter the manner care was delivered.

While there has been some improvement toward the treatment of pediatric pain with the use of topical anesthetics prior to sutures, there is still a need to improve pain management practices for the more common needle procedures. Position statements and clinical practice recommendations have been published to guide healthcare providers specific to procedural pain, and needle-related procedures (Czarnecki, et al., 2011; Emergency Nurses Association, 2010; Lee, Yamada, Kyololo, Shorkey, & Stevens, 2014). In this study, participants placed a high degree of priority to the treatment of the sensory aspects of pain especially for children who required sutures. In contrast, no standardized approach was used to address the situational cognitive, behavioral, and emotional factors that intensified a child's perception of procedural pain.

Pain has been identified as both sensory and emotional therefore healthcare providers should manage children's pain addressing both aspects. The need to incorporate a pharmacological approach with a non-pharmacological approach is a necessary component of managing pediatric patients during painful procedures in the ED, provided with this evidence, the goal of treatment for pediatric pain should not be an "ouchless experience" that addresses only one aspect of pain, but to provide the most comfort possible.

From a nursing perspective, the concern should be on the best way to approach and integrate strategies to relieve pain from invasive procedures in the ED setting for young children. The finding regarding the frequent use of physical restraint on children during painful procedures should sensitize nurses to further study this phenomenon during common treatments for minor procedures in the ED setting.

Physical restraint was a frequent practice used by participants in this study; however, there was a lack of empirical research on the use of those practices in the ED setting. In this study, it was observed that nurses and assistive personnel were mainly responsible for the implementation of this task.

A recommendation of this study is that providers who participate in those activities be formally trained. Curriculum development should include ethical considerations, legal responsibility, local laws and professional organization practice statements that address restraint, applicable de-escalation techniques, safe methods of how to appropriately hold and restrain children, and documentation requirements (Mohr et al., 2003).

Limitations

The first limitation of this study is that data are representative of the practices of one ED unit in one geographic region of the U.S. in a suburban region and as such may not be generalized to all non-pediatric EDs in all areas of the country. The practice of healthcare providers surrounding procedures reflects that of a general community emergency room center and may not be generalized to hospitals with pediatric specialty staff.

Not all healthcare providers who worked in the ED unit during the study period consented to participate. The sample only contained those ED providers motivated enough to allow the researcher to observe their practice. Participation and selection of participants was confined mainly to the time of the prompt care hours 9 a.m. to- 1 a.m., therefore representativeness of the data is limited as the population represents a select group of providers and the patients who presented to the ED during those time frames.

In this study participants were not blinded to the purpose of the observation and thus may have influenced their responses and practices in the assessment and treatment of pediatric pain. The final limitation of this study is that of researcher bias. The researcher as an instrument for data collection, interpretation of findings, and descriptions of findings is subject to some degree of bias. Bias in observation may have included overlooked or missed behaviors, sensitization and de-sensitization to practices over time.

Conclusion

The findings of this study provide a picture of how providers in this ED setting assess and manage pediatric pain. Understanding the manner that care is delivered may be useful to those professionals in the organization planning to design and implement change for improved pediatric pain management practices. The findings point to the need for pediatric procedural pain to be considered a priority in order to develop initiatives, educational programs, and policies geared to addressing those issues. This study reinforces the disparity between the availability of interventions for pediatric procedural pain and the actual practices of those interventions in the ED setting. Further research is needed to address the effect of restraint use on children during painful procedures in the ED and their families.

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