

Commentary

Revisiting the Pieces of Hurt pain assessment tool – do the pieces matter?

Jenessa Thirion, Mary Ann O’Riordan, and Anne Stormorken

Background

Children admitted to the hospital undergo many painful diagnostic and therapeutic procedures. Additionally, the disease process necessitating hospitalization may cause pain. Evaluation of pain in the pediatric patient is more complex than in the adult patient, and special considerations must be made when assessing pain in a child (Srouji et al., 2010). These considerations include age, sex, developmental stages and cognitive abilities, cultural background, socioeconomic status, coping styles and previous painful experiences (Cheng et al., 2003; Srouji et al., 2010). Addressing these differences during pediatric pain assessment has led to the development of a number of pain scales, including observational, behavioral, physiological and self-report scales. For young children it can be very difficult to express and quantify their pain due to their cognitive ability, vocabulary and past pain experiences (Oakes, 2011). Rating pain is more complicated for children under the age of 6 years; when young children are given a self-reporting tool they tend to answer one of the two extreme ends (e.g. pain score of 0 or 10) of the pain scale, instead of the central scores (Goodenough et al., 1997; Oakes, 2011). Preschool children do not have the cognitive ability to cope with more than four choices and become confused when offered a larger range (Goodenough et al., 1997). One pain measurement scale that addresses these concerns is the Pieces of Hurt Tool, formerly known as the Poker Chip Tool (Hester, 1979; Hester et al., 1990). Targeting preschool-aged children, it is a simple

self-report tool that identifies the presence and intensity of pain (Hester, 1979).

The Pieces of Hurt Tool

The current version of the Pieces of Hurt Tool is comprised of four red poker chips. This tool has undergone comprehensive psychometric testing by various investigators and has demonstrated strong convergent and discriminant validity (Rømsing et al., 1996, Stinson et al., 2006).

The Pieces of Hurt Tool has been used to assess pain in children ranging from 3 to 18 years of age (Stinson et al., 2006) in a variety of pediatric clinical environments including pediatric postoperative, postprocedural, hematology/oncology clinics and intensive care units (Stinson et al., 2006). It is one of the only tools used in preschool children with established reliability and validity for acute procedural and postoperative pain (Stinson et al., 2006). This pain scale has even been recommended by the Task Force on Acute Pain of the International Association for the Study of Pain (IASP) for children 4 years and above, due to its wide use and comprehensive validation (Suraseranivongse et al., 2005).

Versions of the Pieces of Hurt Tool

There are a number of different instructions for the Pieces of Hurt Tool. The original description instructs the patient as follows: “I want to talk with you about the hurt you may be having right now, and ask do you have any pain right now?” If the child says no, zero is recorded for the amount of

pain experienced. If the child responds yes, he is given four poker chips. The child is then told “these are pieces of hurt - one chip is a little hurt, and four chips are the most hurt you could ever have. Do you have one, two, three or four pieces of hurt?” (Hester, 1979). Alternatively, health care professionals may align the chips in front of the child on a flat surface and explain, using simple terms, that the chips are pieces of hurt. The child is asked “how many pieces of hurt do you have right now?” (Srouji et al., 2010). Other authors have gone into more detail about what each chip represents, “One chip indicates a little hurt, two chips symbolize a little more, three chips represent even more hurt and four chips are the most hurt the child has ever experienced” (Cheng et al., 2003). Another adapted version of the Pieces of Hurt Tool consists of one white chip which represents no pain and four red chips which represent a pain level of 1 to 4 (Rømsing et al., 1996). Lastly, the Multiple Size Poker Chip Tool uses chips of increasing size to evaluate the amount of pain perceived by the child (St-Laurent-Gagnon et al., 1999).

The Pieces of Hurt Tool in clinical use

Although there have been many variations to the administration of the Pieces of Hurt Tool, all published studies have relied on poker chips as the objects of hurt. In busy clinical settings, however, poker chips may not be readily available and it is inferred that other objects are used instead. These objects may include round plastic, disposable or edible objects to represent pieces of hurt, none of which have been studied extensively.

Another concern that has been raised is that many self-report pain scales are used in children as young as 3 years of age, but there is sparse or absent evidence to support the validity of this assessment approach for 3- to 4-year-olds (von Baeyer et al., 2013). The Pieces of Hurt Tool has been used in children as young as 3 years of age; however validation studies only included a limited number of 4-year-olds and mainly focused on 5- and 6-year-olds (Huguet et al., 2010; von Baeyer et al., 2013).

In light of the current lack of evidence supporting these common clinical uses of the Pieces of Hurt Tool, we set out to examine whether any differences emerge in children’s responses to this tool based on the use of alternative objects in place of poker chips. We also assessed the measure’s performance in 3- to 4-year-olds. We carried out a small study with 38 postoperative inpatients aged 3 to 5 years. A detailed report of the study is available from the first author. We asked children to rate their pain twice: once using the original Pieces of Hurt Tool (using standard poker chips), and again using either stars or triangles made of foam. The order was randomized. Pain intensity scores using the original tool were strongly associated with scores from the alternate shapes (Goodman-Kruskal gamma = 0.85). Specifically, scores on the first and second forms differed by 1 point or less (out of 5) in 87% of cases (See Table 1). Stars did not differ from triangles in their association with the original tool, and there were no significant differences attributed to age. The second self-report score was usually lower than the first one, regardless of age or test form. We tentatively concluded that the alternate shapes, stars and triangles, could be used interchangeably with poker chips.

Conclusions

The results of our small study indicate that a variety of shapes and objects could be used interchangeably with poker chips to administer the Pieces of Hurt Tool. Although this was a very limited study and cannot be taken as definitive evidence, it offers some support for a flexible approach to utilizing the Pieces of Hurt Tool to understand the pain experiences of young children. Thus clinicians can take advantage of the developmental appropriateness of the Pieces of Hurt Tool to quantify the pain experiences of preschool-aged children without being constrained by the necessity to rely solely on specific objects (i.e. poker chips) that may not be available in clinical settings.

Table 1
 Agreement between standard administration of the Pieces of Hurt Tool and modified administration with stars or triangles

Rating on 2 nd administration (using stars or triangles)	Rating on 1 st administration (standard administration)						Total
	0	1	2	3	4		
0	3	0	0	0	0	0	3
1	1	9	1	0	1	1	12
2	0	4	2	0	0	0	6
3	0	2	0	1	0	0	3
4	0	2	0	2	10	10	14
Total	4	17	3	3	11	11	38

Jenessa Thirion, MSN, RN
 Pediatric Pain Management Service, Rainbow Babies and Children’s Hospital, Cleveland, OH, USA
 email: jenessa.thirion@uhhospitals.org

Mary Ann O’Riordan, PhD
 Rainbow Babies and Children’s Hospital, Cleveland, OH, USA

Anne Stormorken, MD
 Pediatric Pain Management Service, Rainbow Babies and Children’s Hospital and Pediatric Critical Care, Case Western Reserve University School of Medicine, Cleveland, OH, USA

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