

## REASSURANCE CAN HURT: PARENTAL BEHAVIOR AND PAINFUL MEDICAL PROCEDURES

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Medical procedures frequently are painful and distressing for children and their parents. Painful procedures involving needles are common for both children who are healthy and children who are ill. For example, healthy children have an immunization schedule that requires >20 needles before the age of 18 years, not including yearly influenza immunizations.<sup>1</sup> For many years, there has been considerable debate about whether parents should be present during their children's painful medical procedures (for a review, see Piira et al<sup>2</sup>). More recently, it has been suggested that the mere presence or absence of a parent is not nearly as important as what the parent does while present.<sup>3,4</sup> A common approach adopted by parents during their children's medical procedure is to reassure.<sup>5,6</sup> Parental reassurance is intended to alleviate the child's pain and distress. However, does the parent communicate comfort or increase distress when reassuring a child during a painful medical procedure?

The behavior of parents during their children's painful procedures is significantly related to the amount of pain and distress the children experience. For example, Frank and colleagues<sup>7</sup> found that maternal behavior accounted for 53% of the variance in child distress during immunizations. Parental behaviors associated with decreases in child distress include humor, commands to use coping strategies, and talking about something other than the procedure.<sup>6</sup> Humor and talking about non-procedural matters are considered distraction. These types of behaviors are referred to as "coping promoting behaviors."<sup>6</sup> In contrast, empathy, criticism, apologies, giving control to the child, and reassurance have been linked with increased child distress and are referred to as "distress promoting behaviors."<sup>6</sup> Of the distress promoting behaviors, the most common is reassurance.<sup>6</sup> The purpose of this commentary is to raise awareness of what is known about the relationship between parental reassurance and child distress during medical procedures and to suggest potential mechanisms that could account for this relationship.

Reassurance has been defined by Blount and colleagues as "procedure-related comments that are directed towards the child with the intent of reassuring the child about his/her conditions, or the course of the procedure."<sup>6</sup> Examples include, "Don't worry. I'll hold your hand"; "You're okay"; "You can do this." Reassuring comments account for more than one quarter of the content of spontaneous adult (ie, parent and medical staff) vocalizations to children during procedures.<sup>6</sup> Even when parents are trained in a variety of potential pain/distress promoting behaviors, parents make twice as many reassuring comments as any other distress promoting behaviors.<sup>8</sup> Although this link between reassurance and child distress seems counterintuitive, it has been a fairly consistent finding in correlational<sup>9</sup> studies, including one employing sequential analysis,<sup>6</sup> and experimental studies with both clinical<sup>10</sup> and non-clinical procedures.<sup>8</sup> The experimental study performed by Gonzalez and colleagues<sup>11</sup> did not support the link between reassurance and child distress. However, Gonzalez et al instructed parents to reassure at least every 10 seconds rather than in response to procedural events or child distress. The time-driven manner in which parents reassured in combination with a small sample size may have precluded the detection of significant differences. For the purposes of this commentary, we calculated effect sizes for reassurance on various distress measures on the basis of the means and standard deviations reported in 2 experimental studies (effect size  $d = \text{mean } 1 - \text{mean } 2 / \text{standard deviation}$ ).<sup>10,11</sup> Effect sizes primarily ranged from small to large, with the largest effects appearing for children's verbal expression of fear<sup>10</sup> and resistance,<sup>11</sup> crying,<sup>11</sup> and flailing/restraint.<sup>10,11</sup> Although the study by Gonzalez and colleagues<sup>11</sup> reported no significant differences, the calculated effect sizes were generally large, thus providing further evidence that a small sample size may have accounted for the lack of significant findings.

The immediate pre-procedure setting has been most commonly studied, but reassurance in the waiting room has also been linked with child distress.<sup>12</sup> Most studies have involved children aged between 3 and 13 years, but the same phenomenon has been observed in children as young as 18 months<sup>13</sup> and in adolescents as old as 17 years.<sup>14</sup> It appears that there also may be sex differences in the impact of reassurance and more generally in the impact of maternal behavior on child behavior.<sup>8</sup> Although parental behavior has been most widely studied, reassurance by nurses and physicians may also be linked with child distress.<sup>6,7,15,16</sup>

So why may parental reassurance hurt? Parents reassure with the belief that they are being helpful to their child. Reassurance may be an ingrained response because training parents in distraction does not entirely eliminate parental tendencies to reassure.<sup>10</sup> Manimala and colleagues<sup>10</sup> found that, before a procedure, parents who were trained to reassure their children during the immunizations reported more confidence in their ability to help their

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children than parents who had been trained in distraction. However, parents who reassured their children were significantly more distressed after the medical procedure compared with other parents.<sup>10</sup>

Three mechanisms could help explain the counterintuitive link between reassurance and child distress.<sup>8-10,14,17</sup> First, reassurance may serve as a warning to the child that the caregiver is anxious, knows something bad is about to happen, or both. This quote from a children's book captures the idea well: "If an adult tells you not to worry and you weren't worried before, you better hurry up and start because you're already running late."<sup>18</sup> Second, reassurance, or other forms of comfort, may reinforce distress behavior in the child. The child showing signs of apprehension may trigger the caregiver to reassure and provide attention, which in turn could increase the likelihood of expression of apprehension and distress by the child. Through sequential analysis, Blount and colleagues<sup>6</sup> found support for a cyclical model in that reassurance was likely to both precede and follow child distress. Finally, parental reassurance may give the child permission to overtly express his or her distress; the parents' use of a soothing tone may facilitate the release of negative emotions on the part of the child. Regardless of the specific mechanism through which reassurance may contribute to child distress, its message may be conveyed in facial expression, vocal intonation, the specific content of the words, or all three.

Reassurance is related to child distress in acutely painful situations. However, additional research is needed to determine conclusively whether there is a causal relationship between reassurance and child distress. More research is needed to describe reassurance in general. For example, there may be different types of reassurance that could have unique relationships with child distress. Thus, there may be ways of reassuring children that are beneficial to child coping or are otherwise helpful to a distressed child. In addition, we do not know how parental reassurance relates to distress among children who experience chronic pain. It is possible that behaviors, such as providing special treats or privileges, which parents engage in when their children have longer lasting pain (eg, stomachaches),<sup>19</sup> serve a similar function for children with chronic pain as reassurance does for children with acute pain. We are unaware whether factors such as the age, cognitive development, sex or temperament of the child, the form of the reassurance, or the sex or temperament of the parent are influential. Because of the frequency with which parents use reassurance during painful medical procedures, further research into reassurance and its effects on children is warranted.

What are we to do until research further explores whether reassurance may hurt more than it helps? There is considerable evidence in support of simple cognitive-behavioral approaches for procedural pain management.<sup>20</sup> These well-established treatment approaches include distraction, relaxation, breathing exercises, and imagery. Parents should be taught and encouraged to use strategies such as these rather than resorting to the potentially ineffectual use of reassurance. Pediatricians are also encouraged to consider how they could incorporate aspects of these

psychological strategies into their pediatric practice and to disseminate effective pain management strategies to families.

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