7-1-1999

Parent behavior and child distress during urethral catheterization

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DOI: https://doi.org/10.1111/j.1744-6155.1999.tb00042.x


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Parent Behavior and Child Distress During Urethral Catheterization

Charmaine Kleiber and Ann Marie McCarthy

ISSUES AND PURPOSE. Researchers need a clear understanding of the natural behaviors parents use to help their children cope. This study describes the relationships between naturally occurring parent behaviors and child distress behaviors during urethral catheterization.

DESIGN AND METHODS. In this descriptive study, researchers videotaped the behaviors of parent-child interactions during urethral catheterization.

RESULTS. Parents used distraction to maintain calm behavior during the first part of the procedure and used more reassurance when the children started to become distressed. Seven of the nine children displayed calm behavior at least half the time following distraction. Parental reassurance did not decrease distress behavior in most children.

PRACTICE IMPLICATIONS. Early implementation of developmentally appropriate nursing interventions to decrease child distress is imperative. Parents may need specific instruction and practice to continue the use of distraction throughout procedures, even when the child is upset.

Key words: Children, distraction, distress, medical procedures, parents, reassurance

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Parents are frequently with their children during painful medical procedures, but many of them state they do not know what to say or do to help their children cope with the pain (Bauchne, Vinci, & Waring, 1989; Merritt, Sargent, & Osborn, 1990; Schepp, 1991). Although there is a great deal of interest in teaching parents and children to use cognitive-behavioral techniques (distraction, imagery, deep breathing, relaxation) to modify behavioral distress, few researchers have examined the relationships between specific naturally occurring parental behaviors and children’s responses. Before interventions are implemented to modify parental behavior, researchers should have a clear understanding of the natural behaviors that parents use during painful procedures and the effects of those behaviors on children. Without that information, development of sound interventions cannot proceed in a scientific manner.

A few research groups have examined the relationships between naturally occurring parent behaviors and child distress and coping behaviors during procedures, but differences in the categories of behavior chosen for study and differences in analytic methods make it difficult to synthesize the results. Another issue is that most researchers have chosen children with cancer as the sample population. It may not be appropriate to generalize the behaviors of parents of children with cancer to parents of children with different health problems. It can be argued that parents of children with cancer are under greater emotional stress — the potential death of the child. The threat of death may influence how parents behave around their children during stressful situations. In investigating the effects of parental behavior on child behavior, it is important to include groups of children that do not have life-threatening illnesses.
A unique aspect of this study was that the children were undergoing urethral catheterization. Children undergoing this procedure were chosen for this study because these children typically do not have life-threatening conditions, yet they must undergo procedures that are frightening, uncomfortable, and take more than a minute or two to complete. There is evidence that catheterization of the bladder, a common medical procedure, is uncomfortable for children. In a study of children between the ages of 3 to 5 years who had the procedure, Merritt, Ornstein, and Spicker (1994) reported the mean observed distress score was 2.38 on the 5-point Observed Scale of Behavioral Distress (OSBD), and the mean pain rating was 64.78 on the 100-point Oucher pain scale. This indicates that children experience a moderate amount of distress and pain during the procedure. Indeed, for many years recommended practice for urethral catheterization has included the instillation of an anesthetic lubricant into the urethra to decrease discomfort (Chrispin, 1968; Gray, 1996).

Although several researchers have taught parents to use behavioral strategies successfully, it is imperative that such interventions be based on a clear understanding of the interaction between parent and child behaviors.

The purpose of this pilot study was to investigate the relationships between naturally occurring parent behaviors and child distress behavior during urethral catheterization. This work adds to the developing research base on the relationships between the naturally occurring behaviors of parents and children during painful procedures. This information is crucial to the development of interventions to assist children and their parents in coping with painful procedures.

Background

Some parental behaviors that might be viewed intuitively as helping the child cope with a painful procedure, such as giving reassurance or information, have been found to be linked with increased child distress (Blount et al., 1989; Dahlquist, Power, Cox, & Fernbach, 1994; Manne et al., 1992). More needs to be learned about the effects of naturally occurring parental behaviors on children in stressful situations. Because the focus of this study is the relationship between parental behaviors and child distress, the literature review is limited to studies in that area.

Three groups of researchers have investigated the relationships between specific naturally occurring parental and child behaviors during painful procedures. Blount et al. (1989) audiotaped 23 children, ages 5 to 13 years, with cancer who were having a bone marrow aspiration and/or lumbar puncture. Verbalizations made by parents and children during the procedure were coded using the Child-Adult Medical Procedure Interaction Scale (CAMPIS), which consists of 12 adult-to-child vocal behaviors and 15 child vocal behaviors. Sackett's lag analysis was used to investigate the impact of particular vocalized behaviors on other behaviors. Thus, the impact of child behavior on adult behaviors was analyzed as well as the impact of adult behavior on child behavior. Conditional probabilities and behavioral chains, with each discrete behavior as the criterion starting the chain, were constructed. Major findings were that reassuring comments, apology, empathy, criticism, or giving control to the child by adults occurred before child distress behaviors (p<.0001 for each finding).

The timing of adult behaviors was the focus of a second analysis by Blount, Sturges, and Powers (1990). The relationship between adult and child behaviors was separated into phases of pre-, during, and postprocedure. The major findings were that child distress increased
from preprocedure to during procedure, and remained high postprocedure. Adults used more distraction in the procedural phase and more commands to relax during the procedure. One limitation of these studies is that the temporal relationship—how much time elapsed—between adult and child behaviors is unknown. Another limitation is that the CAMPIS tool relies only on vocalizations audible on a tape recorder as indicators of distress in children.

Jacobsen et al. (1990) described the relationship between observed parental behavior and child distress during venipuncture in 3- to 10-year-old children (N = 70) with cancer using a tool developed by the researchers (Procedure Behavior Rating Scale-Venipuncture Version [PBRVS-VV]). Analysis of variance revealed that children were more distressed if their parents used the behaviors of bargaining (p = .001), explaining (p = .002), or distractive (p = .04). Because the level of analysis did not allow for a temporal relationship, it was not possible to determine whether one behavior followed another.

To determine temporal relationships between behaviors, Manne et al. (1992) conducted a follow-up study, assessing the behaviors of 44 parent/child dyads. The children were cancer patients, ages 3 to 9 years, undergoing venipuncture. The researchers used an observational scale adapted from the CAMPIS and PBRVS-VV that consisted of three child behavior categories and six adult behavior categories. An important difference between the behavioral observation tool used in this study and the CAMPIS tool used in the Blount study is that behaviors were defined using both visually observed and auditory categories. Another difference is that for parent behavior, the category “explanation” was added to the tool, and “reassurance” was deleted. The researchers used sequential analysis to assess the temporal relationships between parent and child behaviors. Behaviors had to occur within 5 seconds of each other to be counted as a sequence. Probable expectations were calculated for all possible pairs of child and adult behavior categories. The results were that children used more coping behaviors when adults used distraction, and children exhibited fewer coping behaviors when adults used explanation, commands to use coping, praise, criticism, or giving control to the child. The only adult behavior that had beneficial results on both child coping and distress was distraction. All other adult behaviors decreased the likelihood that children would engage in coping behaviors.

Dahlquist et al. (1994) observed 66 children with cancer between the ages of 2 and 17 years during bone marrow aspiration. Child behavioral distress was measured with the Observed Scale of Behavioral Distress (OSBD) (Jay, Ozolins, Elliott, & Caldwell, 1983), which consists of 11 verbal, vocal, and motor distress behaviors that are assigned intensity weights. Parent-child interactions were recorded using the Dyadic Pre-Stressor Interaction Scale (DPIS) (Bush, Melamed, Sheras, & Greenbaum, 1986). Parent behaviors in this scale are informing, distracting, reassuring, ignoring, restraining, and agitation; child behaviors are attachment, distress, exploration, and prosocial behaviors. Pearson product-moment correlations were computed between parent and child DPIS behaviors and OSBD scores. For younger children (ages 2 to 7 years), “preprocedural” OSBD distress scores were positively correlated with parental reassurance (r = .48), and “during-procedure” distress was positively related to parental restraining of the child (r = .50). For the older children, ages 8 to 17 years, none of the adult behaviors significantly correlated with distress scores in the “preprocedural” phase, but “during-procedure” OSBD distress scores were positively correlated with parental reassurance (r = .40), and parental information giving (r = .34). Although this study found age- and phase-specific relationships between the parental behaviors “reassuring” and “informing” and child distress, the use of correlation to describe relationships between adult and child behaviors does not establish a temporal link (e.g., information about the timing of the behaviors).

In summary, the relationships between child distress behavior and parent behaviors are unclear. Although several researchers have taught parents to use behavioral strategies successfully, such as distraction, to decrease their children’s distress during painful procedures (Blount et al., 1992; Broome, Lillis, McGahee, & Bates, 1992; Jay & Elliott, 1990; Manne et al., 1990; Vessey,
Carlson, & McGill, 1994), it is imperative that such interventions be based on a clear understanding of the interaction between parent and child behaviors.

The purpose of this study was to continue to investigate the relationship between naturally occurring parental behavior and child distress behaviors during a specific medical procedure: urethral catheterization. The specific research questions addressed in this study were:

1. What behaviors do parents display during the urethral catheterization of their children?
2. To what extent do children display distress behaviors during urethral catheterization?
3. What are the relationships between parent behavior and child distress behavior during urethral catheterization? Specifically:
   (a) What is the child’s behavioral response to parent behaviors?
   (b) What is the parent’s behavioral response to child distress behavior?

Methods

Behavioral analysis of videotaped procedures was used in this descriptive study of naturally occurring parent-child interactions during urethral catheterization.

Setting

The setting was the urology clinic at a large tertiary-care Midwestern hospital. There was no program of cognitive-behavioral therapy to assist families with stress or pain during procedures in this clinic. Parents were given the option to be with their children during the procedure, but parents were not coached in what to say or do to help their children.

Subjects

Subjects were children undergoing urethral catheterization for diagnostic tests and the parents who were present during the procedure. Inclusion criteria were that the parents and children understood English and the children were between the ages of 3 and 7 years. The age of the children in this study was thus limited because it has been shown that young children are most likely to display distress behavior during medical procedures. The children were developmentally normal and had no known abnormality in perineal sensation.

Twelve children and their parents were approached to participate in this study. Two children declined. Ten children (8 girls, 2 boys) and their parents were recruited. The mean age was 4.6 years (range 3.2–6.9 years), and the average number of previous urinary catheterizations the children had experienced was 5.8 (range 3–10). All the children were under follow-up for recurrent urinary tract infections. Seven of the children were accompanied by a mother; two were accompanied by a father, and one child had both parents present through the procedure.

Data Collection

Demographic and historical data were collected from each family, including information on the child’s age, sex, and history of previous catheterizations or other painful or uncomfortable procedures.

Behaviors recorded on the videotapes were coded using a behavior coding scheme (Table 1) developed by the investigators based on behavioral descriptors in the Child Adult Medical Procedure Scale–Revised (CAMPIS-R) (Blount et al., 1990) and the Observed Scale of Behavioral Distress-Revised (OSBD) (Jay et al., 1983). Concurrent validity of the CAMPIS-R has been reported with significant correlations between CAMPIS-R parent behavioral categories and child behavioral distress as measured by the OSBD and the Behavioral Approach-Avoidance and Distress Scale. Parental behaviors comprised only verbalizations, including distraction, reassurance, information giving, praise, and command to use a coping strategy. Verbalizations that did not fall into those categories were labeled “other.” Child distress behaviors included vocalizations ranging from whimper to scream, and the motor behaviors of physical fighting including kicking or hitting. These behaviors were chosen because
Table 1. Definitions of Parent and Child Behaviors

<table>
<thead>
<tr>
<th>Parent Behaviors</th>
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<tbody>
<tr>
<td>Distraction</td>
</tr>
<tr>
<td>• Non-procedure-related talk to child. Talk about the child's pets, school, activity, questions unrelated to the child's illness. Jokes or humorous statements made to the child.</td>
</tr>
<tr>
<td>Information</td>
</tr>
<tr>
<td>• Procedure-related talk, including giving explanation, information. Any statement denoting what is about to occur, including washing, insertion of medical instrument. “This is going to feel cold.” “You’ll feel a little pressure.”</td>
</tr>
<tr>
<td>Reassurance</td>
</tr>
<tr>
<td>• Comments directed to the child with the intent to reassure or ease tension. “It’s OK.” “I’m almost through.” “We’re hurrying.” “It’s almost over.”</td>
</tr>
<tr>
<td>Command to use coping strategy</td>
</tr>
<tr>
<td>• Commands that required the child to participate in some coping behavior, such as, “Take a deep breath.” “Relax.” “Squeeze my hand.” “Breathe in and out.”</td>
</tr>
<tr>
<td>Praise</td>
</tr>
<tr>
<td>• Statements referring to the child’s past, present, or future behavior that is positive and shows approval. “You are doing great.” “That’s right.” “Good job,” and “Good girl.”</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>• Talk directed to adults in the room; commands to the child to engage in some procedure-related activity, e.g., “Bring your legs up like a frog.”</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Child Behaviors</th>
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</thead>
<tbody>
<tr>
<td>Distress behavior</td>
</tr>
<tr>
<td>• Crying, screaming, whimpering, fighting, verbal noncompliance or verbal resistance, verbal pain, or verbal fear.</td>
</tr>
</tbody>
</table>

they indicate a higher level of distress than a frown or holding the body rigidly. Coding for child behavior was simply the presence or absence of any behavioral distress.

Procedure

Approval for the study was obtained from the Institutional Review Board. Families in the urology clinic waiting room were approached by the principal investigator prior to their clinic visit to discuss the study and obtain informed consent from the parent and verbal assent from the child. If families agreed to participate, demographic data were collected and the investigator escorted the family to the procedure room.

The sterile catheterization was performed by the urology clinic nurses using standard care procedures. The child was placed on the exam table with the parent positioned at the head. The child’s perineal area was washed with a soap solution, rinsed, and then a small amount of sterile lidocaine anesthetic lubricant was instilled into the urethra with a prefilled smooth-tipped syringe (see Gray, 1996, p. 308, for a description of lidocaine lubricant use with urinary catheterization). After waiting a few minutes for the anesthetic to take effect, more of the lubricant was instilled. After waiting again for a few minutes, a Foley catheter (6 or 8 Fr.) was inserted.

The nurses informed the children about the sensations they would be feeling as each step of the procedure progressed. The investigator focused the video camera on the faces of the child and parent throughout the procedure. Videotaping started when the child was placed on the exam table in the treatment room and continued until the clinic nurse indicated that the catheter was in place and secured with tape.

Data Analysis

The audio portion of each videotape was transcribed to allow written, auditory, and visual data to be used for coding the behaviors. Prior to analysis, two practice tapes were used to train the investigators in the coding system and to establish interrater agreement.

First, all parent behaviors were coded. A parent behavior began with a parent’s verbalization and ended when the parent paused, allowing for the child to respond. Then, each child behavior following every parent behavior was coded as either indicative of distress or not. Table 2 gives an example of a sequence of parent and child behaviors. In this example there are four parent behaviors immediately following four child behaviors (1-2, 3-4, 5-6, 7-8). The mother used reassurance once, which was followed by child distress (1-2), and
Parent Behavior and Child Distress During Urethral Catheterization

Table 2. Example of a Sequence of Parent and Child Behaviors

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<table>
<thead>
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<tbody>
<tr>
<td>1. Mother (softly): “Shh. Hush now, it’s OK.” (Reassurance)</td>
<td></td>
</tr>
<tr>
<td>2. Child (crying). (Distress)</td>
<td></td>
</tr>
<tr>
<td>3. Mother: “Can you tell me where we are going to lunch today?” (Distraction)</td>
<td></td>
</tr>
<tr>
<td>4. Child (whimpering). (Distress)</td>
<td></td>
</tr>
<tr>
<td>5. Mother: “Tell me what your favorite pizza place is.” (Distraction)</td>
<td></td>
</tr>
<tr>
<td>6. Child (frowning but quiet). (No distress)</td>
<td></td>
</tr>
<tr>
<td>7. Mother: “Should we have pizza with pepperoni or sausage on it?” (Distraction)</td>
<td></td>
</tr>
</tbody>
</table>

distraction three times, once followed by child distress (3-4) and twice followed by no distress (5-6, 7-8). Analyzing this passage for the parent’s behavioral response to child distress, one needs to look at the child behaviors first. There are three child behaviors immediately followed by parent behavior (2-3, 4-5, 6-7). The child was distressed twice (2-3, 4-5) and calm once (6-7). The parent used distraction after each of the child’s behaviors.

The videotapes were coded to 100% agreement by the two investigators. Disagreements were resolved by discussing the likely intent of parent behaviors. Sometimes the parent’s tone of voice and the pattern of parent-child interaction had to be taken into consideration in categorizing verbalizations. For example, the “shhh” sound was used by parents to communicate different things. Some parents used it as a soft, soothing reassurance, but others appeared to use it as a command to be quiet. Each verbalization made by the parents was classified as distraction, reassurance, information giving, command to use coping strategy, praise, or “other.” Nonverbal parent behaviors, such as stroking the child’s head, were not coded. The presence or absence of child distress just prior to and immediately following each parent behavior was documented.

Because of the small sample size, the binomial sign test was chosen to determine the relationship between child distress and parent behaviors. The unit of analysis was “subject” rather than “behavior across subjects” in order to meet the assumption of independence. Two sets of analyses were conducted: how parents respond to children and how children respond to parents. Frequencies of parent behavior and child behavior just prior to and immediately following each parent behavior were tallied and percentages calculated for each parent/child dyad. For each parent/child dyad, the relationship between child distress and parent behavior was given a positive sign if distress occurred more than 50% of the time, and a negative sign if distress occurred less than 50% of the time. For example, referring to the behavioral sequence in Table 2, the mother’s distraction behavior was preceded by child distress two of three times. Because the child was distressed more than half of the time prior to distraction, the dyad would receive a positive sign for “child distress present prior to parent distraction.” The mother’s distraction was followed by child distress one out of three times. Because the child displayed distress less than 50% of the time immediately following the parent’s distraction, the dyad would receive a negative score for “child distress present following parent distraction.”

Results

Data were collected on 10 parent/child dyads. One videotape was not usable because the parent did not say anything and stood still during the entire procedure. For the remaining nine videotapes, the catheterization procedures lasted an average of 8 minutes from the time the child was placed on the exam table to the time the catheter was taped in place.

Research Question 1: What behaviors do parents display during the urinary catheterization of their children?

Totals of 684 parent behaviors were coded and are described in Table 3. The most commonly used behaviors were distraction (33%) and reassurance (23%); however, there was a wide range in usage among the nine
Table 3. Description of 684 Parent Behaviors (N = 9)

<table>
<thead>
<tr>
<th>Behavior</th>
<th>Frequency for Total Sample</th>
<th>Percentage of Total Behaviors</th>
<th>Mean Frequency</th>
<th>Range of Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distraction</td>
<td>225</td>
<td>33%</td>
<td>25</td>
<td>8–89</td>
</tr>
<tr>
<td>Reassurance</td>
<td>156</td>
<td>23%</td>
<td>17.3</td>
<td>1–41</td>
</tr>
<tr>
<td>Information</td>
<td>60</td>
<td>9%</td>
<td>6.6</td>
<td>1–19</td>
</tr>
<tr>
<td>Praise</td>
<td>49</td>
<td>7%</td>
<td>5.4</td>
<td>0–11</td>
</tr>
<tr>
<td>Command to cope</td>
<td>49</td>
<td>7%</td>
<td>5.4</td>
<td>0–26</td>
</tr>
<tr>
<td>Other</td>
<td>145</td>
<td>21%</td>
<td>16</td>
<td>5–26</td>
</tr>
</tbody>
</table>

parents in this sample. Distraction was used from 8 to 89 times (mean = 25), and reassurance was used from 1 to 41 times (mean = 17.3) during the catheterization procedures. Information giving, praise, and commands to use coping strategies were used infrequently on average (means = 6.6, 5.4, and 5.4, respectively).

Research Question 2: To what extent do children display distress behaviors during urinary catheterization?

On average, the children displayed distress behavior following 41% of all coded parent behaviors. The range of distress behavior, however, was striking. One child did not display any distress behavior; another child displayed only one mild distress behavior. Four children were more calm than distressed following parent behavior. Two children displayed more distress behavior than calm behavior and one child screamed and cried throughout the entire procedure regardless of her parent’s efforts to calm her.

In this descriptive study, analysis of distress behavior was done for the whole procedure rather than by “phase” of procedure. In analyzing the tapes, several “invasive” aspects to this procedure appeared: the washing of the perineum, the instillation of anesthetic jelly, and the insertion of the catheter. The beginning of each aspect of the procedure was surmised from the nurse verbalizations on the videotape. A trend was evident in that 7 children showed signs of discomfort (crying out; whining; saying, “It stings.”) during the washing part of the procedure, and 8 of the 9 children screamed suddenly and loudly during the time that the catheter was passed through the urethra. It appeared that most children were uncomfortable during washing and anesthetic application, and experienced sudden pain during the catheter insertion.

Research Question 3: What is the child’s behavioral response to parent behaviors? What is the parent’s behavioral response to child distress behavior?

Table 4 shows the number of children who were distressed immediately before and immediately after the parent behaviors of distraction, information giving, and reassurance. These parent behaviors were chosen for analysis because they were used by all the parents in the study and were the most frequently used parent behaviors.

None of the relationships between parent and child behavior reached statistical significance, which is not surprising considering the small sample size. However, trends in the data are evident. Parents tended to use distraction to maintain calm behavior in the child. Six of the 9 parents initiated distraction during calm behavior. Seven of the 9 children displayed calm behavior at least half the time following distraction.

Six of the 9 children displayed distress before the parents used reassurance, and 5 children continued to show distress following reassurance. Parents tended to use reassurance later in the procedure, when the child was distressed. Six parents followed the pattern of using
Parent Behavior and Child Distress During Urethral Catheterization

Table 4. Time-Sensitive Relationships Between Parent Behavior and Child Distress Behavior

<table>
<thead>
<tr>
<th>Parent Behavior</th>
<th>Child Distress Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Before the parent behavior</td>
</tr>
<tr>
<td></td>
<td># of children showing distress (Sign Test)</td>
</tr>
<tr>
<td>Distraction</td>
<td>3 of 9 ($p = .5$)</td>
</tr>
<tr>
<td>Reassurance</td>
<td>6 of 9 ($p = .5$)</td>
</tr>
<tr>
<td>Information giving</td>
<td>4 of 9 ($p = 1.0$)</td>
</tr>
</tbody>
</table>

*One child displayed equal numbers of distress and nondistress behaviors following parent distraction.

distraction first (when the child was calm during the beginning of the procedure), reassurance when the child started to become upset, and returned to using distraction when the child calmed down again.

Information was offered infrequently by the parents and often was meant to reinforce information given by the nurse, such as “The soap will feel cold.” The children’s behavior was mixed prior to and after receiving information.

Praise generally was offered at the end of the procedure. Eight parents told their children they did a good job during the procedure. Five parents gave praise when the children were calm, whereas 2 praised their children most frequently when they were still upset but winding down. One parent gave praise once when the child was upset and once when the child was calm.

Commands to cope were made by 6 parents. Although commands were used infrequently, it appeared that general instructions such as “just relax” had no noticeable effect on these young children. The children seemed more able to follow directive commands such as “take a deep breath” and “squeeze my hand.”

Discussion

Parents tended to use distraction during times when the children were not distressed. When the children were presented with distraction by their parents, 6 of the 9 children continued to remain calm, while 2 children tended to display distress, and 1 child displayed an equal number of calm and distress behaviors. The results of this study support the findings of Blount et al. (1990) that parents tend to use more distraction during the early part of the procedure, and the findings of Manne et al. (1992) that children tend not to show distress behavior following parent use of distraction.

Parents tended to use reassurance when the children became distressed, typically later in the procedure. This finding supports observations reported by two other research groups (Blount et al., 1990; Dahlquist et al., 1994) that child distress and reassurance are related. However, where other researchers have speculated that reassurance might evoke distress in the child, we suggest a different explanation: Child distress may evoke parent reassurance. This was evident in the pattern seen with parents using distraction initially, using reassurance when children start to show distress, and then going back to using distraction when the children were less distressed. Perhaps parents feel the need to acknowledge their children’s discomfort by using reassuring comments like “It’s OK” or “I know.” Five of the 9 children continued to be distressed after parental reassurance, but the children’s level of distress did not escalate (e.g., from whining to crying) following reassurance. Although reas-
surance did not decrease distress behavior in most children; it did not seem to be a distress-promoting behavior.

Information was offered infrequently by parents in this study and often was used to reinforce sensory preparation by the nurse. The children's behavior prior to and following information was mixed. This does not support the conclusions of other researchers (Jacobsen et al., 1990; Manne et al., 1992) that information or explanation is linked with increased child distress.

The major limitation of this study is its small sample size. Although trends in patterns of behavior are evident, larger studies are needed to validate these findings. Another limitation is possible differences between male and female catheterizations. This study included 2 boys and 8 girls, so comparisons of gender differences were not possible.

In summary, the pattern of parent behavior that emerged in this study was that of parents using distraction to maintain calm behavior during the first part of the procedure when nothing painful was happening. When children had a marked behavior change indicative of intense discomfort, however, some parents abandoned distraction and started using reassurance. This finding, in conjunction with previous research, has implications for researchers and clinicians. In a meta-analysis of 16 studies representing a total sample of 491 young children, Kleiber and Harper (1999) found that distraction had a positive effect on children's distress behavior during medical procedures. Additionally, there is evidence that child distress is influenced by distraction during both the anticipatory and the invasive phases of medical procedures. Blount et al. (1990) reported that directing the child to use coping strategies was associated with decreased child distress during the painful part of bone marrow aspiration. Manne et al. (1992) found that parent use of distraction had a significantly positive effect on child coping during the preparation, insertion, and completion phases of venipuncture. The results of the current study suggest that parents may need specific instruction and practice to continue the use of distraction or imagery throughout procedures.

Many children with urinary problems undergo repeated catheterizations. Future research should investigate children's behavioral responses during their first catheterization experience. In this study children already had experienced between 3 and 10 urinary catheterizations. Other studies have found that the child's previous negative experience with procedures is a potent predictor of future distress (Dahlquist et al., 1986; Pate, Blount, Cohen, & Smith, 1996). Thus, for pediatric urology patients, early implementation of developmentally appropriate nursing interventions to decrease child distress is imperative. These interventions may include strategies for the child, the adults involved in the procedure, or both.

Conclusions

There is a broad variability in parents' behaviors and in children's distress behavior during urinary catheterization. As a group, children showed distress behavior after 41% of parent behaviors during the procedure. A pattern of parent behavior emerged in this study: Parents used distraction to maintain calm behavior during the first part of the procedure and used more reassurance when the children started to become distressed.

How Do I Apply These Findings to Nursing Practice?

To develop scientifically sound interventions, researchers and clinicians should have a clear understanding of the natural behaviors that parents use during medical procedures and the effects of those behaviors on children. This study suggests that parents tend to use distraction early in the procedure to maintain calm behavior, and reassurance when the child becomes distressed. Because previous research indicates that distraction can decrease child distress behaviors during both the preparatory and invasive phases of medical procedures, parents may need assistance in using distraction throughout the procedure, even when the child is upset.

Other researchers have identified a relationship between parent use of reassurance and child behavioral distress. This study suggests that child distress behavior triggers parent use of reassurance. Although reassuring
Parent Behavior and Child Distress During Urethral Catheterization

comments such as “it’s OK” and “almost through, just a little longer” did not seem to decrease children’s distress behavior; reassurance might have an unrecognized psychological affect on children. Perhaps reassurance lets children know their parents have not abandoned them, and that their “upset” is acknowledged. Further research is needed to clarify how parents’ use of distraction and reassurance influence children during medical procedures.

Acknowledgment. The authors wish to thank Bonnie Wagner, RN; Lisa Gerard, RN; and the staff of the UIHC Urology Clinic for their support of this research. This study was funded by a grant from the Society of Pediatric Nurses.

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