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Parent Caregiver Self-Efficacy and Child Reactions to Pediatric Cancer Treatment Procedures

Amy M. Peterson, PhD[1,2], **Felicity W. K. Harper, PhD**[1,2], **Terrance L. Albrecht, PhD**[1,2], **Jeffrey W. Taub, MD, FAAP**[1,3], **Heather Orom, PhD**[4], **Sean Phipps, PhD**[5], and **Louis A. Penner, PhD**[1,2]

[1]Wayne State University, Detroit, MI, USA

[2]Barbara Ann Karmanos Cancer Institute, Detroit, MI

[3]Children's Hospital of Michigan, Detroit, MI, USA

[4]University of Buffalo, Buffalo, NY, USA

[5]St. Jude Children's Research Hospital, Memphis, TN, USA

Abstract

This study examined how parents' sense of self-efficacy specific to caregiving for their child during cancer treatment procedures affected children's distress and cooperation during procedures. Potential correlates of caregiver self-efficacy (ie, demographics, child clinical characteristics, parent dispositional attributes, and social support) were also examined. Participants were 119 children undergoing cancer treatment procedures and their parents. Parents' self-efficacy about 6 procedure-specific caregiver tasks was measured. Parents, children, nurses, and observers rated child distress and parents, nurses and observers rated child cooperation during procedures. Higher parent self-efficacy about keeping children calm during procedures predicted lower child distress and higher child cooperation during procedures. Parent dispositional attributes (eg, enduring positive mood, empathy) and social support predicted self-efficacy. Parent caregiver self-efficacy influences child distress and cooperation during procedures and is associated with certain parent attributes. Findings suggest the utility of identifying parents who would benefit from targeted interventions to increase self-efficacy about caregiving during treatment procedures.

Keywords

parent; self-efficacy; distress; cooperation; treatment; pediatric oncology; anxiety

Introduction

Children with cancer and their parents frequently describe the children's cancer-related treatment procedures as worse than the disease itself (Hedstrom, Haglund, Skolin, & von Essen, 2003; Ljungman et al., 1999). Experiencing high levels of distress during procedures may have negative implications for the immediate and longer-term psychosocial well-being of children and their parents (Barakat et al., 1997; Chambers, Craig, & Bennett, 2002; Dunn

Corresponding Author: Amy M. Peterson, Department of Oncology, Population Studies and Disparities Research Program, Wayne State University, 4100 John R., MM03BF, Detroit, MI 48201, USA. petersoa@karmanos.org.

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et al., 2012; Harper et al., 2013; Liossi, White, Franck, & Hatira, 2007; Tomlinson, 2004; Vance & Eiser, 2004). High levels of distress may also affect children's compliance with treatment procedures, thereby making it difficult for nurses to deliver procedures and/or manage the child during treatments.

Pain and distress related to pediatric cancer treatment procedures has been widely studied (Christensen & Fatchett, 2002; Dahlquist, Power, Cox, & Fernbach, 1994; Hockenberry et al., 2011; Landier & Tse, 2010). The goal of pain management in this context has been to decrease child distress to facilitate the delivery of treatment procedures (Patterson, 1992). In some instances, children may become so distressed that they must be restrained for the procedure to be performed. However, psychological stress from being restrained is not uncommon (Lambrenos & McArthur, 2003). Therefore, identifying nonintrusive and modifiable factors that decrease children's distress reactions and increase cooperation with treatment procedures has important implications for families of pediatric cancer patients and the nurses who treat them.

In this study, we focused on how parents' sense of *self-efficacy* about caring for their child during treatment procedures affects their child's distress and cooperation. According to Bandura (1997), self-efficacy is the expectation or confidence that one can effectively cope with *research-article*2013 and succeed at a specific task (Bandura, 1977, 1997). Previous research shows that higher perceived self-efficacy is associated with more positive outcomes, such as greater persistence, greater likelihood of success, and lower anxiety, when faced with a challenging task (Bandura, 1997). Given the invasive and/or stressful nature of many pediatric cancer treatment procedures, parents' self-efficacy for caring for their child during procedures might be expected to have an important role in determining children's reactions to treatment.

Prior research on self-efficacy among parents of children with cancer as well as other chronic childhood illnesses has focused primarily on parents' self-efficacy for coping with the overall challenges associated with their child's disease rather than any specific challenge. This research finds that parents' overall or general sense of self-efficacy is positively associated with their children's general ability to cope with their illness (Byrne et al., 2011; Sofronoff & Farbotko, 2002; Wanamaker & Glenwick, 1998; Wood, Price, Dake, Telljohann, & Khuder, 2010).

The present study extends this prior research by moving from a focus on parents' overall self-efficacy to a focus on parents' self-efficacy about tasks specific to providing care and comfort to their children during cancer treatment procedures. We have previously found that parents' sense of caregiver self-efficacy affected their own emotions at the time of treatments (Harper et al., 2011), but we were not able to locate any prior studies examining how parents' self-efficacy specifically related to caring for a child during cancer treatment procedures affected *children's reactions* to these procedures. As already noted, pediatric cancer treatment procedures are typically very stressful for children, and thus, may present management problems for their parents and nurses (and/or other medical staff) trying to deliver procedures. Accordingly, understanding the impact of parents' perceived self-efficacy about providing care and comfort to their children during procedures may be of substantial value to pediatric cancer families and to the nurses who administer treatment procedures to the children.

In this study, we had two related aims. First, we investigated the impact of parents' caregiver self-efficacy specific to treatment procedures on children's reactions to treatments (distress and cooperation). If there are such effects, this relationship suggests the value of developing strategies to increase parent self-efficacy, thereby helping children cope better

and be more manageable during the treatments. Second, we investigated whether child and parent demographic characteristics, children's clinical characteristics, and/or parents' dispositional attributes and social support would be associated with differences in parents' caregiver self-efficacy specific to procedures. This aim is based on prior pediatric cancer research suggesting that certain enduring parent attributes are associated with differences in parents' affective reactions to their child's distress (Penner, Harper, Phipps, et al., 2011; Penner & Orom, 2009). Thus, we sought to determine if these attributes were also associated with parents' sense of caregiver self-efficacy related to their child's treatment. Such associations might help identify parents who are likely to have lower caregiver self-efficacy specific to procedures, and thus, have children who display greater distress and less cooperation during treatments. This knowledge can inform preventive interventions delivered to parents early in treatment.

To achieve these two aims, we asked the following research questions about parents' caregiver self-efficacy specific to their children's treatment procedures:

1. Is parents' caregiver self-efficacy specific to treatment procedures associated with children's distress and cooperation during the procedures? Moreover, are there some particular aspects of parents' caregiver self-efficacy that are more strongly associated with children's distress and cooperation than other aspects?
2. What demographic characteristics, clinical variables, parent dispositional attributes, and social support characteristics are associated with differences in parents' caregiver self-efficacy specific to their children's treatment procedures?

Method

Overview

This study is part of a larger, ongoing longitudinal study that began in 2009 at two major children's hospitals in the United States. Study protocol and consent/assent procedures were reviewed and approved by institutional review boards at the two institutions. All families were initially contacted regarding the study by medical staff. A research assistant obtained informed consent and oral assent, where appropriate, from eligible families. Ninety percent of eligible families in this study agreed to participate. Parents received $15 gift cards for the initial assessment at study entry and for each subsequent time at which data were collected; children received $10 gift cards for each of these times as well. Data collection in the larger overall study included assessments at study entry, immediately before and after up to 3 subsequent treatment procedures, and at 2 follow-up assessments, 3 and 9 months after the last procedure.

Eligibility

Children and their primary caregiver (henceforth *parents*) were eligible if children were (1) between ages 3 and 12 years at study entry; (2) currently in treatment; and (3) getting implanted central line port access (port starts), and receiving lumbar punctures, and/or bone marrow aspirations. Only families (N = 119) who provided data at study entry and at least 2 of 3 video-recorded treatment-related procedures are included in this report (82.4% of these families provided data for all three procedures).

Participants

Parent and child demographic and child clinical characteristics are shown in Table 1. Observed procedures were composed of a total of 155 port starts, 131 lumbar punctures, 33 combined lumbar puncture/bone marrow aspiration procedures, and 7 bone marrow

aspirations. Port starts were accompanied by a topical anesthesia; all other procedures used general anesthesia.

Procedure

Parents completed an initial assessment at study entry. They also provided self-report and observational data for up to three successive treatment-related procedures separated by at least 2 weeks, but not more than 3 months. Each of these procedures was video-recorded with the parents' consent/child's assent and with the knowledge and agreement of the medical staff who administered the procedures.

Measures

Initial Assessment—Parents provided their own and their child's demographic characteristics and the child's clinical characteristics. The clinical characteristics included length of treatment and number of procedures prior to study entry and general child health history. Parents also completed the measures below.

Dispositional Attributes

Empathic concern—Empathic concern is the predisposition to experience feelings of empathy in response to another person's distress and is positively associated with concern and willingness to help distressed individuals (Davis, 1994; Penner & Finkelstein, 1998). Parents rated their level of empathic concern using the 7-item Empathic Concern subscale of the Interpersonal Reactivity Index (Davis, 1980; study coefficient $\alpha = .73$). Unless otherwise noted, all dispositional scales used a 5-point Likert-type scale response format (1 = *not at all like me* to 5 = *exactly like me*).

Positive and negative enduring emotions—Positive enduring emotions have been associated with better coping with chronic stressors (Fredrickson & Cohn, 2008), whereas negative emotions have been associated with anxiety in response to distress (Penner et al., 2008). Enduring emotions were measured with a Positive and Negative Emotion Scale developed by Fredrickson, Tugade, Waugh, and Larkin (2003). We used 11 positive and 8 negative emotions to assess parents' emotions in the previous 2 weeks (study $\alpha = .87$ for positive subscale; $\alpha = .78$ for negative subscale).

Resilience—Resilience is the ability "to effectively modulate and monitor an ever changing complex of desires and reality constraints" (Block & Kremen, 1996, p. 359) and is positively associated with recovery from stressful situations (Waugh, Fredrickson, & Taylor, 2008). Resilience was measured with a 14-item scale developed by Block and Kremen (1996; study $\alpha = .85$).

Trait anxiety—Trait anxiety is the tendency to experience chronically high levels of anxiety. It was measured with the 20-item Trait Anxiety subscale of the State-Trait Anxiety Inventory (Spielberger, 1977; study $\alpha = .91$).

Depression—The 20-item Center for Epidemiologic Studies–Depression Scale (Radloff, 1977) is a widely used measure of depression and was used to measure parents' depressive symptoms (study $\alpha = .90$).

Social desirability—Social desirability is the tendency to give socially acceptable and/or desirable answers to questions, which can influence self-report data. Social desirability was measured with the 13-item (*true–false*) short form of the Marlowe–Crowne Social Desirability scale (Reynolds, 1982; study $\alpha = .67$). Scores were used to control for a

possible positive response bias in parents' self-reports and their estimates of their child's distress and cooperation.

Social Support—Parents' perceived availability of social support and satisfaction with this support was measured with the 6-item Social Support Questionnaire Short Form (Sarason, Levine, Basham, & Sarason, 1983). Parents reported the number of sources of support in each of 6 areas and rated their satisfaction in each area using a 6-point scale (1 = *very disappointed* to 6 = *very satisfied*). Average number of sources and average satisfaction with support across the 6 areas were used in analyses (study α = .95 for number of sources; α = .92 for satisfaction).

Day of Treatment-Related Procedure

Parents completed the following measures on the day of each treatment procedure.

Pre-procedure

Self-efficacy: Based on prior research (Penner, Harper, & Albrecht, 2011) and a pilot study that included individual interviews with parents and focus groups, we identified 6 caregiver tasks specific to pediatric cancer treatment procedures that might be relevant for parents: (1) keeping their child calm before the procedure began, (2) keeping their child calm during the procedure, (3) hiding emotions from their child if the parent becomes upset; (4) gaining information from others that will help them help their child cope, (5) keeping their child involved in everyday/normal activities while waiting for the procedure, and (6) providing explanations that improve their child's understanding of the procedure. Parents indicated how confident they were in performing each task and then how important each task was to them (1 = *not at all important/confident* to 5 = *extremely important/confident*). Table 2 presents means and standard deviations (averaged across different treatment procedures) for parents' confidence and the importance ratings for each of these caregiver tasks. For each task, self-efficacy was operationalized as the product of parents' confidence ratings multiplied by their importance ratings.

Post-procedure

Child distress: Children's procedure-related distress was rated after each procedure using the FACES scale (Wong & Baker, 1988). Parents, nurses, children them-selves, and observers provided ratings (1 = *no distress at all* to 6 = *the worst distress*). At 1 of the 2 hospitals, children who received general anesthesia rated their distress when they regained consciousness. All raters were blind to ratings from other sources. Interrater correlations among parents, nurses, children, and observers across the 3 procedures were all significant ($p < .000$) and ranged from $r = .57$ to $r = .72$.

Child cooperation: Parents, nurses, and observers also rated children's cooperation during procedures (1 = *totally uncooperative* to 7 = *totally cooperative*). Interrater correlations among parents, nurses, and observers across the procedures were all significant ($p < .000$) and ranged from $r = .51$ to $r = .72$.

Data Preparation and Analysis: Values for sporadic missing data (≤1% of all items) were inputed using mean substitution. Data were inspected for outliers, but none were identified. Statistical analyses were performed using the IBM Statistical Package for the Social Sciences, Release 21.0. The significance level for all analyses was $p < .05$.

Standardization and averaging of scores: To control for differences due to the type of anesthesia children received (topical vs general), we standardized all measures assessed on

the day of the procedure within each type of anesthesia and then combined scores into single distributions.

We also examined the temporal stability of standardized scores of child distress and child cooperation ratings across procedures to determine if they could be combined into single overall scores by averaging across the 3 procedures. The αs for ratings of children's distress across 3 procedures were as follows: parents .71, nurses .65, children .82, and observers .72. The αs for ratings of children's cooperation across three procedures were as follows: parents .52, nurses .71, and observers .62. Given this temporal stability, all analyses were conducted using the across-procedure average of the standardized distress and cooperation scores for each rater.

Given that Bandura (1977) argued that self-efficacy is task specific, we initially elected to only analyze each caregiver task separately to determine the effects of each aspect of self-efficacy. However, parents' standardized self-efficacy scores for the 6 tasks were strongly interrelated (α = .87), suggesting that there was value in also including a total caregiver self-efficacy score (average of the 6 self-efficacy scores) in the analyses. We also examined the stability and consistency of total and individual self-efficacy scores across 3 procedures. The αs for the total and individual task self-efficacy scores across the procedures were all >.75. Therefore, all analyses were conducted using the across-procedure average of standardized scores for each of the 6 tasks individually and for the total self-efficacy score.

Results

Preliminary analyses showed child age was significantly and positively correlated with several parent caregiver self-efficacy scores and ratings of child cooperation and negatively correlated with ratings of child distress. Social desirability was significantly and positively correlated with all self-efficacy scores, suggesting a possible self-presentational bias in parents' estimates of their self-efficacy. Child age and social desirability were therefore used as covariates in all subsequent analyses.

Research Question 1: Self-Efficacy and Child Distress and Cooperation

Partial correlations between parent self-efficacy scores and ratings of child distress and child cooperation (controlling for child age and social desirability) are presented in Table 3. Total self-efficacy scores were significantly and *negatively* correlated with parent ratings of distress and significantly and *positively* correlated with parent and observer ratings of child cooperation. Turning to self-efficacy for the individual caregiver tasks, higher self-efficacy for *keeping the child calm during the procedure* was the most consistent predictor of child distress and cooperation; it was significantly and *negatively* correlated with parent, nurse, child, and observer ratings of distress and significantly and *positively* correlated with parent, nurse, and observer ratings of cooperation. Self-efficacy about *providing the child with explanations* was significantly and *negatively* correlated with parent ratings of distress and significantly and *positively* correlated with parent and observer ratings of cooperation. Self-efficacy about *keeping the child calm before the procedure* was significantly and *negatively* correlated with parent ratings of child distress and significantly and *positively* correlated with parent ratings of child cooperation. Self-efficacy about *hiding emotions*, *gaining information*, and *keeping the child involved* were not significantly related to any of the ratings of child distress or cooperation.

Research Question 2: Correlates of Parent Self-Efficacy

Clinical and Demographic Variables—The only child clinical characteristic significantly associated with any aspect of caregiver self-efficacy was parent age. Parent age

was significantly and negatively associated with parent self-efficacy for keeping *the child calm before the procedure* (r_{par} = −.228, p = .022) and *hiding emotions* (r_{par} = −.232, p = .020).

Parent Dispositional Attributes—Table 4 shows the partial correlations (controlling for child age and parent social desirability) between parent dispositional attributes, social support, and parents' caregiver self-efficacy.

The *enduring positive emotions* subscale was the most consistent predictor of parent self-efficacy. It was significantly and *positively* correlated with total self-efficacy scores and caregiver self-efficacy for each of the 6 individual tasks. Parent empathic concern and parent resilience were both significantly and *positively* correlated with total parent self-efficacy and self-efficacy about *gaining information* and *keeping the child calm before the procedure*. Parent empathic concern was also significantly and *positively* correlated to self-efficacy for *keeping the child calm during the procedure* and *providing explanations*. Parent trait anxiety was significantly and *negatively* correlated with *total self-efficacy* scores and self-efficacy for *keeping the child involved*. Depression was significantly and *negatively* correlated with self-efficacy for *keeping the child involved* and *providing explanations*. The enduring negative emotions subscale was unrelated to any of the measures of parent caregiver self-efficacy.

Social Support—Satisfaction with social support was significantly and positively correlated with *total self-efficacy* and self-efficacy for *providing explanations*. The number of sources of social support that parents reported was not significantly correlated to self-efficacy.

Discussion

The first research question was whether parents' self-efficacy about specific caregiver tasks related to children's cancer treatment procedures was associated with children's distress and cooperation during the procedures. We found relatively strong relationships between parents' caregiver self-efficacy and children's distress and cooperation during procedures. This is consistent with the literature on more general parent self-efficacy and coping with children with cancer (Best, Streisand, Catania, & Kazak, 2001; Byrne et al., 2011; Sloper, 2000). Total caregiver self-efficacy (ie, the average self-efficacy across the 6 tasks) was associated with lower parent ratings of child distress and higher parent and observer ratings of child cooperation during procedures. However, parents' self-efficacy for *keeping the child calm during the procedure* was a much stronger predictor than total self-efficacy score or any other self-efficacy score. It was the only self-efficacy score that significantly predicted not only parents' own ratings of their child's distress but also the distress ratings of nurses, observers, and the children themselves; it also predicted parents', nurses', and observers' rating of cooperation.

The finding that one specific aspect of caregiver self-efficacy was the best predictor of distress and cooperation is precisely what self-efficacy theory would predict. That is, Bandura (1977, 1997) argued that a person's self-efficacy is most predictive of the outcomes of tasks to which it is most specifically tied. Consistent with this argument, parents' self-efficacy for performing the task, which is arguably the most directly relevant to children's distress and cooperation (ie, *keeping the child calm during the procedure*), was a better predictor of these outcomes than either total self-efficacy or self-efficacy about any of the other specific tasks.

At a more practical level, the results of the present study extend the current literature on the effects of differences in self-efficacy among parents of children with cancer (Best et al., 2001; Harper et al., 2006; Harper et al., 2013; Sloper, 2000) by showing the importance of self-efficacy for *specific tasks* that are related to caregiving for children during treatment procedures. Given that it is possible to modify a person's sense of self-efficacy about specific tasks (Nichols, Schutte, Brown, Dennis, & Price, 2009; Sofronoff & Farbotko, 2002), the findings suggest that it may be possible to intervene and increase parents' self-efficacy about specific caregiver tasks, which should make procedures less stressful for parents and children and easier for nurses to manage.

The second research question investigated the correlates of parents' caregiver self-efficacy. Specifically, we examined whether parent and child demographics, child's clinical characteristics, and parents' dispositional attributes and perceived social support were associated with parents' procedure-related caregiver self-efficacy. Clearly, the dispositional attributes were the best predictors of parent self-efficacy.

The dispositional attributes measured in this study can be divided into those that can be considered assets for people coping with stressful situations (ie, empathic concern, resilience, and enduring positive emotions) and those that can be considered deficits (ie, trait anxiety, depression, and enduring negative emotions). We found that parents' dispositional assets (especially enduring positive emotions) were *positively* correlated with parents' procedure-specific caregiver self-efficacy; whereas, dispositional deficits were *negatively* associated with parents' caregiver self-efficacy. That is, because of certain enduring dispositional attributes, some parents might be predisposed to have a greater sense of procedure-specific caregiver self-efficacy and some might be predisposed to have a lower sense of their self-efficacy (Bandura, 1977). A similar argument might be made for social support, which was also positively associated with certain aspects of caregiver self-efficacy.

Given that it is possible to increase a person's self-efficacy, these findings suggest the value of early, targeted interventions for parents who might be at risk for lower caregiver self-efficacy. Such interventions might provide substantial benefits for children, their parents, and the nurses who interact with them during the procedures.

Limitations

Our findings should be interpreted in light of several considerations. First, it was not possible to enroll children and their parents at the time of the initial diagnosis of cancer. Although there are many reasons for this, one of the most compelling is that our initial work (Penner et al., 2008; Penner, Harper, & Albrecht, 2011) showed most parents to be so overwhelmed by the initial diagnosis of cancer such that it is not practical or appropriate to recruit them for a study not directly related to their child's clinical treatment. Therefore, our strategy has been to intentionally wait several weeks after initial diagnosis before approaching families about participation. It is, therefore, possible that unmeasured variables such as the child's treatment-related distress and cooperation prior to study entry could affect parents' initial and subsequent self-efficacy for caring for their child during treatment. Moreover, we were forced to rely on parent reports of number and types of previous treatment procedures (eg, number of bone marrow aspirations) in the time prior to study entry. Given known problems with retrospective self-report data (Bernard, Kilworth, Kronenfeld, & Sailer, 1984; Henry, Moffitt, Caspi, Langley, & Silva, 1994), it is possible that inaccurate parent reports may mask actual relations between some clinical characteristics and parents' self-efficacy. Thus, despite the null findings for all but one of the clinical characteristics (number of prior port starts), we are not yet prepared to conclude that factors such as a child's treatment history has little impact on parent procedure-related caregiver self-efficacy. Independent replications of this study with preenrollment clinical

information taken from medical records would increase our confidence in this aspect of our findings. It would also seem necessary to replicate the counterintuitive finding that older parents have lower levels of certain aspects of caregiver self-efficacy.

Second, we did not measure dispositional self-efficacy (Sofronoff & Farbotko, 2002; ie, a general perception of self-efficacy about coping with the experience of pediatric cancer) as was done in previous studies (Best et al., 2001). Thus, it is possible that parents' procedure-specific caregiver self-efficacy is really reflecting their overall sense of self-efficacy and that it does not play an important *independent* role in children's reactions to procedures.

Having said this, we note that certain specific aspects of self-efficacy (eg, *keeping the child calm during the procedure*) were much stronger and more consistent predictors of child distress and cooperation than other specific aspects of self-efficacy or the total self-efficacy score. Thus, we doubt the relationships among parent procedure-specific caregiver self-efficacy, and child distress and cooperation were simply a reflection of an overall sense of self-efficacy about caring for a child with cancer. Rather, we suspect that general and procedure-specific caregiver self-efficacies are related, but each makes unique contributions to how parents can influence their child's reactions to cancer-related procedures. It would be important for future studies to address this issue and measure both overall and procedure-specific self-efficacy within the same sample of parents.

These limitations notwithstanding, our findings have important clinical implications. First, our findings suggest it is possible to identify parents who might most benefit from targeted interventions, which focus on increasing parents' procedure-specific caregiver self-efficacy. Parents could be screened for dispositional attributes known to predict self-efficacy during procedures (eg, trait anxiety, resilience, enduring positive emotions, and depression) and invited to participate in these interventions. As already noted, it is possible to modify and/or increase people's self-efficacy; thus, interventions that increase parents' procedure-specific self-efficacy could reduce child distress and increase child cooperation and compliance during procedures.

Second, the present findings suggest which aspects of procedure-specific caregiver self-efficacy might be the focus of these interventions. For example, it would seem that focusing on increasing a parents' sense of self-efficacy about the task of *keeping the child calm during the procedure* might be the most efficacious approach to reducing child distress and to increasing child cooperation during procedures. Indeed, our research team is currently conducting an intervention using motivational interviewing (Rollnick, Miller, & Butler, 2008) to assist parents in identifying strategies to help keep their child calm and increase their confidence in being able to comfort and care for their child during treatment procedures.

We believe that these kinds of targeted interventions, which help parents feel more confident about their ability to care for their children, might make cancer-related treatment procedures easier for children, their parents, and the nurses and other medical staff who care for them.

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Biographies

Amy M. Peterson, PhD, is a Project Director in the Department of Oncology at Wayne State University School of Medicine.

Felicity W.K. Harper, PhD, is an Assistant Professor in the Department of Oncology at Wayne State University School of Medicine and a Clinical Psychologist at the Barbara Ann Karmanos Cancer Institute.

Terrance L. Albrecht, PhD, is Associate Center Director for Population Sciences and Leader of the Population Studies and Disparities Research Program at the Barbara Ann Karmanos Cancer Institute and Professor and Associate Director of the Department of Oncology, Wayne State University School of Medicine.

Jeffrey W. Taub, MD, FAAP, is the Oncology Division Chief, Children's Hospital of Michigan and Professor of Pediatrics in the Wayne State University School of Medicine.

Heather Orom, PhD, is an Assistant Professor in the Department of Community Health and Health Behavior at the University of Buffalo.

Sean Phipps, PhD, is the Chair of the Psychology Department at St. Jude Children's Research Hospital.

Louis A. Penner, PhD, is a Professor in the Department of Oncology at the Wayne State University School of Medicine and the Population Studies and Disparities Research Program at the Barbara Ann Karmanos Cancer Institute.

Table 1

Parent and Child Demographics and Treatment History (N = 119 Families).

	Parents	Children
Gender, n (%)		
Female	100 (84.0)	48 (40.3)
Male	19 (16.0)	71 (59.7)
Age in years, mean (SD)	34.38 (7.13)	6.45 (3.06)
Ethnicity, n (%)		
Caucasian	89 (74.8)	87 (73.1)
African American	23 (19.3)	24 (20.2)
Biracial	0 (0.0)	5 (4.2)
Hispanic/Latino	4 (3.4)	2 (1.7)
American Indian/Alaska	2 (1.7)	0 (0.0)
Other	1 (0.8)	1 (0.8)
Child’s cancer diagnosis, n (%)		
Acute lymphoblastic leukemia		94 (78.9)
Wilm’s tumor		7 (5.8)
Non–Hodgkin’s lymphoma		5 (4.2)
Lymphomas		3 (2.5)
Astrocytoma		2 (1.7)
Sarcoma (unspecified)		2 (1.7)
Other cancers		6 (5.0)
Time in weeks treatment at study entry, mean (SD)		16.57 (0.48)

Table 2

Average Confidence and Importance Ratings for Specific Caregiver Tasks (N = 119).

Task	Confidence; Mean (SD)	Importance; Mean (SD)
Keeping your child calm before procedure	4.25 (0.70)	4.68 (0.50)
Keeping your child calm during procedure	4.07 (0.87)	4.75 (0.46)
Hiding negative emotions from your child	4.07 (0.82)	4.28 (0.86)
Gaining information to help you or your child cope with procedures	4.08 (0.82)	4.35 (0.76)
Keeping your child involved in everyday/normal activities while waiting	4.43 (0.65)	4.51 (0.67)
Providing explanations to improve your child's understanding of procedure	4.21 (0.75)	4.53 (0.59)

Note: Parents rated items from 1 = *not at all important/confident* to 5 = extremely *important/confident*. Ratings are averaged across procedures.

Table 3

Partial Correlations Between Parent Specific Caregiver Self-Efficacy and Child Distress and Cooperation (Controlling for Child Age and Parent Social Desirability; N = 119).

Caregiver Self-Efficacy	Child Rating Child Distress	Parent Rating Child Distress	Nurse Rating Child Distress	Observer Rating Child Distress	Parent Rating Child Cooperation	Nurse Rating Child Cooperation	Observer Rating Child Cooperation
Calm before	−.07	−.21**	−.09	−.05	.20**	.09	.10
Calm during	−.24**	−.37*	−.22**	−.28*	.34*	.24*	.29*
Hide emotions	−.02	.04	.06	−.05	.10	.00	.01
Gain information	.05	−.11	.03	−.03	.01	−.02	.12
Child involved	.01	−.17	−.07	−.11	.12	.08	.11
Provide explanations	−.07	−.23**	−.12	−.18	.26*	.16	.27*
Total self-efficacy score	−.07	−.22**	−.08	−.17	.21**	.12	.19**

Note: For each task, self-efficacy was operationalized as the product of parents' confidence ratings multiplied by their importance ratings.

* $P < .01$.

** $P < .05$.

Table 4

Partial Correlations Between Dispositional Attributes, Social Support, and Parent Specific Caregiver Self-Efficacy (Controlling for Child Age and Parent Social Desirability; N = 119).

	Calm Before	Calm During	Hiding Emotions	Gaining Information	Child Involved	Provide Explanations	Total Self-Efficacy
Parent dispositional attributes							
Empathic concern	.20**	.23**	.08	.35*	.15	.32*	.28*
Resilience	.19**	.18	.15	.21**	.16	.18	.23**
Positive emotions	.33*	.37*	.27*	.35*	.32*	.42*	.43*
Negative emotions	−.05	−.05	−.08	−.12	−.02	−.07	−.09
Trait anxiety	−.14	−.18	−.14	−.17	−.18**	−.18	−.21**
Depression	−.09	−.11	−.11	−.08	−.19**	−.20**	−.17
Parent social support							
Sources of support	.06	.15	.02	.08	.02	.12	.09
Satisfaction with support	.15	.16	.12	.19	.11	.19**	.20**

*$P < .01$.

**$P < .05$.