Family Beliefs and Interventions in Pediatric Pain Management

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KEYWORDS

• Acute and chronic pain • Parent factors • Cognitive-behavioral therapy
• Acceptance and commitment-based therapy

KEY POINTS

- Acute pain will cease once the ailment has been treated or the infliction of pain has concluded.
- Chronic pain describes pain that continues once the initial stimulus is no longer present.
- Parental factors that exacerbate pain include anxiety, catastrophizing, distress, and reassurance.
- Several different measures can be used to determine parent functioning, responses, and coping as they relate to pediatric pain.
- Evidence-based parent and family interventions exist for the treatment of pediatric pain.

OVERVIEW: NATURE OF THE PROBLEM

Pain is a significant public health concern and socioeconomic burden with costs estimated to be $635 billion per year in the United States alone.[1] Pain is distinguished as either acute or chronic (although some illness conditions, such as sickle cell, can result in complex, acute, or chronic pain). This article reviews established research regarding pediatric pain and focuses on the effects of interpersonal interactions, primarily those from parents, on its expression.

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Abbreviations

ACT	Acceptance and commitment therapy
ADHD	Attention-deficit/hyperactivity disorder
CBT	Cognitive-behavioral therapy
POTS	Postural orthostatic tachycardia syndrome
RAP	Recurrent abdominal pain

Acute Versus Chronic Pain

The International Association for the Study of Pain defines pain as "an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage."[2] Pain is classified into acute and chronic pain and is a highly subjective experience influenced by a multitude of factors. Acute pain is the umbrella term to describe the immediate onset of pain resulting from a medical event, including illness, injury, or a medical procedure. The duration of acute pain can vary, lasting from a few seconds (eg, immunization) to a few months (eg, broken bone or surgery). The primary difference between acute and chronic pain is that acute pain will cease once the ailment has been treated or the infliction of pain has concluded.[3] Managing pediatric acute pain is critical in offsetting the risk of potential development of chronic pain.

Everyone experiences acute pain. Chronic pain affects approximately 15% to 25% of children.[4,5] Much of the experimental research has been directed at acute pain. While clinical descriptions of some pain syndromes distinguish between organic and nonorganic pain, the American Pain Society maintains that this mind-body dualism conceptualization should be abandoned because all pain is associated with neurosensory changes. Even for children with an organic illness, like juvenile arthritis, the severity of pain can only be partly attributed to disease activity.[6] Musculoskeletal pain, abdominal pain, and headache are among the most common chronic pain complaints, and all are more prevalent in girls compared with boys.[7] The authors discuss here experimental research done with acute pain while realizing that chronic pain has the most damaging impact on the lives of children and families and can result in functional disability, depression, fear of pain, and pain catastrophizing.[8–12]

Summarizing research with parents and pediatric acute pain

Researchers have examined the role of parents and children in acute pain.[13–16] Many of the data cited here were generated in studies using either natural events commonly associated with pain, such as immunizations or scheduled medical procedures, or to experimental situations designed for the purpose.

Factors related to children in these studies include child distress, anxiety, and catastrophizing about the procedure.[14,17–19] Catastrophizing refers to having a response out of the range of usual expectation given the severity of the pain-generating event (making too much out of the situation). Parent factors include the parent's level of anxiety, catastrophizing, degree of reassurance given to the child, or parental distress. Family factors examined for outcomes for pediatric pain patients include aggregation of family pain complaints, parenting style, parental responses to child pain behavior, parent-child interaction, family environment, and overall family communication and functioning.[20–24]

Here are some results from these studies:

- Studies of acute pain have demonstrated that children require more restraints and express high levels of fear when parents provide reassurance during immunizations.[23,24]

- In 44 mother-child dyads, parental catastrophizing was positively related to child-reported fear of the procedural pain scenario. However, maternal catastrophizing scores did not correlate with child reports of pain.[22]
- Bearden and colleagues[14] found that parental anxiety preceding their child's immunization mediated the relationship between the child report of procedural anxiety and the child report of pain after the procedure.
- Parental distress, anxiety, and pain-specific catastrophizing have been linked to poorer outcomes, including increased pain and functional disability in children.[16,23–27]
- Parents who were trained to reassure their children during an immunization procedure were more distressed after the procedure was completed.[24]

Although it has been established that both parent distress and responses to children's pain exert significant influences on children's pain and functional outcomes, few studies have specifically addressed how these parental variables may work together. A 2010 systematic review of the literature on family factors in pediatric chronic pain yielded 16 studies that focused on associations between parent and family functioning and child pain outcomes (see Lewandowski and colleagues[21] 2010). Among those studies, researchers have found that parental response and subsequent distress in response to their child's pain contributed to higher levels of parent protective responses and feelings of helplessness and higher levels of child functional disability.[26,28] Much of the research in this realm to date has been cross-sectional, leaving open questions about whether premorbid family functioning influences pain-related disability or vice versa. Most likely, these interactions are complex and transactional.

Summarizing, interpersonal effects between parents and their children are bidirectional, with parent behaviors affecting child responses and child behaviors affecting parent responses. Most studies show that parents attempting to reassure a child about impending pain actually make the experience worse for the child.

PATIENT EVALUATION OVERVIEW: MEASURES USED TO ASSESS PARENT FACTORS IN PEDIATRIC PAIN

Blount and colleagues[16] suggest that there is not one particular assessment designed to properly gauge acute and chronic pain. They found that each tool presented individual benefits along with drawbacks. (**Table 1** contains an overview of measures.)

Interventions and Management Goals

While recognizing that much more research is needed to delineate effective treatments for both acute and chronic pediatric pain,[16,27] we can assume that types of interventions will vary with acute and chronic pain. Acute or procedural pain interventions rely primarily on parental management of their own anxiety and distress surrounding the immediate procedure through tone of voice, touch, and distraction techniques,[22,24,25,28–37] whereas chronic pain interventions require family involvement and acceptance-based strategies.[21,38,39]

Interventions for parents of children with acute pain

Children and adolescents engage in various cognitive and behavioral methods to cope with acute pain scenarios. In designing acute pain interventions, clinicians pay attention to the role played by parental preprocedural anxiety.[14] Research suggests that during medical procedures, the behavior of health care professionals is associated with the efficacy of child coping strategies, whereas parent behaviors toward their

Table 1
Assessments for parents who have a child with pain

Measure	Author, Year, Type of Pain Assessed	Validated Age Range (y)	Number of Items, Type of Report	Scoring/Scale	Example Items
OSBD-R	Elliot, Jay, & Woody, 1987; acute	2–20	8 (Behavior observation)	15-s Intervals over 4 phases (waiting, preparation, procedure, postprocedure); behaviors weighted based on intensity of distress (1–4)	Crying (1.5), screaming (4)
CAMPIS-R	Blount, Sturges, & Powers, 1990; acute	2–13	35 (Behavior observation)	6 Dimensions; categorical behavior codes; 3 child codes (coping, distress, and neutral), 3 adult codes (coping-promoting, distress, promoting, neutral)	Child humor, child crying; parent criticizing, parent directing humor toward child
BAP-PIQ	Jordan, Eccleston, McCraken, Connell, & Clinch, 2008; chronic	18+	64 Items (self-report)	1–5; Multidimensional scale	In the last 2 wk living with my child in pain I have… (eg, felt sad, not been able to get my mind off my worries, thought my child's pain would get worse, thought that I had failed my child)
PCS-P	Goubert, Eccleston, Vervoort, Jordan, & Crombaz, 2006; chronic	18+	13 Items (self-report)	1–5; Likert scale; 0 = *not at all true* to 4 = *very true*	When my child is in pain, I worry all the time about whether the pain will end. When my child is in pain, I become afraid that the pain will get worse.
Adult Response to Children's Symptoms	Van Slyke & Walker, 2006; chronic	18+	33 Items (self-report)	0 (*Never*) to 4 (*always*) Likert scale (3 subscales (*parent protectiveness, minimization of pain*)	When your child is in pain, how often do you bring your child little treats? When your child has pain, how often do you insist that your child go to school?

Abbreviations: BAP-PIQ, Bath Adolescent Pain-Parent Impact Questionnaire; CAMPIS-R, The Child-Adult Medical Procedure Interaction Scale; OSBD-R, Observational Scale of Behavior Distress–R; PCS-P, Pain Catastrophizing Scale–Parent Version.

child are correlated with child distress levels.[17,29] Parental anxiety can lead to parental distress and catastrophizing surrounding procedures, which result in higher child fear scores during acute pain procedures.[22]

It has been proposed that perhaps the reassurance behavior provided by parents during a procedure is not about what parents are saying to their children during procedural pain but how they are responding.[18,32] An example of a nonverbal parental response is the effect of touch on child distress.[32] Instrumental touch (eg, moving a child into a proper position for procedure) was positively correlated with child pain ratings during their procedure ($P<.01$), whereas parental supportive touch (eg, holding hand during a procedure) was not related to child pain levels.[32] These results suggest that parents should avoid active roles in their child's medical procedures. Additionally, McMurtry and colleagues[32] looked at how elements of speech tone, like pitch and frequency, alters the child's interpretation of reassurance during the procedure and found that children interpret parent reassurance as parent suffering and concern. Understanding how parental tone, facial expression, and verbal and nonverbal communication can influence child distress during acute pain is the first step in understanding how parents can intervene and redirect child distress during acute pain scenarios. Current research on the topic suggests parents should not try to help with the procedure (eg, holding a child down) and, instead, they should show support through both verbal and nonverbal statements, by paying close attention to the tone and pitch of their communication.[31,32] Additionally, there are behavioral techniques that parents can engage in, with the hopes of relieving some of their child's distress.

Various researchers have examined the bidirectional impact that exists between parent behavior and cognitions surrounding their child's medical procedures and how it impacts both parent and child pain perceptions and distress.[13,28,29,33] Distraction is a commonly studied behavioral technique used during medical procedures or acute pain interventions.[13,17,34–36] Distraction techniques include having an adult change the subject to get the child's mind off the procedure, and using age appropriate toys or videos to redirect the attention of the child. The effects of nurse, parent, and child led distraction have each been examined.[13,17,36] The findings support the idea that using a distraction technique alleviates some amount of distress in parents and infants, children, and adolescents compared with when parents interact in a usual manner.[28] In particular, one study found that daughters whose mothers reacted in a pain-reducing manner (eg, distraction techniques) reported less pain intensity during a cold-pressor task (experimental pain paradigm) than daughters in the control group.[37] This idea was further supported in a study of nurse-led distraction during infant immunizations. The infants in the distraction group exhibited less distress than the infants in the normative care group.[28] A systematic review[15] of psychological interventions for procedural pain categorized 7 different procedural pain interventions and examined the ways in which these interventions were effective. In general, parent-led distractions (eg, use of toys, modeling, verbal distraction) were found to be effective in reducing parental distress and anxiety about the procedure; but the findings were ambivalent as to whether distraction actually altered child pain perceptions.[15] This finding suggests that reminding parents to be calm and supportive of their child during procedures is as effective as using other distraction techniques.

Interventions for parents of children with chronic pain

Given the significant impact of parent factors on pediatric chronic pain outcomes, parent involvement in the treatment of complex pediatric pain is essential. Although more studies of family based interventions in pediatric pain are needed, some

important research has been conducted in the area of recurrent and/or functional abdominal pain as well as in pain rehabilitation.

Sanders and colleagues[40] examined the comparative efficacy of a cognitive-behavioral (cognitive-behavioral therapy [CBT]) family based intervention and standard pediatric care for children experiencing recurrent (also referred to as *functional*) abdominal pain (RAP). Forty-four children with RAP aged 7 to 14 years were randomized into one of 2 groups (cognitive-behavioral family or pediatric care). All children used a visual analog scale to record pain intensity. The cognitive-behavioral family component consisted of 6 sessions that included psychoeducation about RAP, contingency management training for parents, and self-management strategy training for children. Children in the standard pediatric care treatment met regularly with their pediatrician who provided reassurance and support as well as instructing children that they must cope with their pain but did not provide specific coping skills. Children in the treatment group were found to have fewer pain symptoms and less pain intensity at after treatment and at the 6- and 12-month follow-up.

Additionally, Robins and colleagues[41] compared the combination of standard medical care and short-term cognitive-behavioral family treatment (n = 40) versus standard medical care alone (n = 29) for the treatment of RAP. The intervention consisted of presenting a model of recurrent pain to children and parents, instructing children in the active management of pain episodes, modeling and practicing pain management techniques, and assisting parents in developing more adaptive responses to their child's pain. Results indicated that children and parents participating in the combined intervention reported significantly less child- and parent-reported child abdominal pain and fewer school absences than children receiving only standard medical care immediately following the intervention and up to 1 year following the study entry.

Sieberg and colleagues[12] conducted a multiple-baseline across participants (n = 8 families) design using repeated measures of anxiety and pain to examine the utility of a CBT and a treatment that combined both CBT and family based approaches in a community sample of children with comorbid anxiety and RAP. Via a diagnostic structured interview assessing anxiety (Anxiety Disorders Interview Schedule[42]), children had to meet the criteria for an anxiety disorder at baseline. Specifically, the family based condition combined the CBT protocol[43] with an intervention designed to improve parent-child interaction as well as parental responses to child pain. The family component of this condition was based on Beardslee and colleagues'[44] Family Based Preventive Intervention, an empirically supported manualized treatment developed originally for the prevention of depressive symptoms in children of depressed parents. Clinical significance analyses indicate that both treatment conditions were effective at reducing anxiety and abdominal pain. Although family based CBT holds promise for the treatment of RAP, aside from this study, there are no other empirically based studies assessing family based therapies for the treatment of RAP *and* anxiety. Including parents in learning CBT strategies with their child, while also focusing on family functioning, is an important future direction for randomized clinical trials (**Figs. 1** and **2**).

TREATMENT RESISTANCE AND COMPLICATIONS

When outpatient modalities are not sufficient, an intensive treatment approach, such as a partial hospital or comprehensive rehabilitation program, may be warranted. Multidisciplinary and interdisciplinary day hospital programs are gaining attention as a necessary treatment option for pediatric complex chronic pain, and these programs

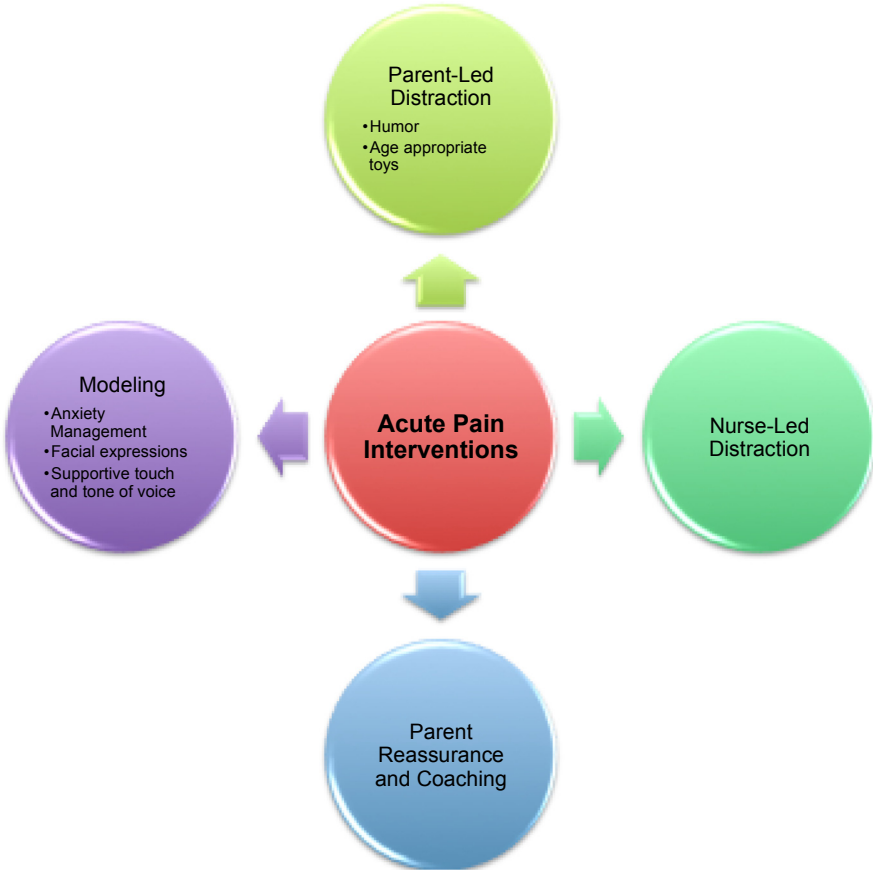

Fig. 1. Interventions for parents with a child undergoing procedural pain.

require parental involvement for admission. Early studies show that parents whose children are enrolled in these intensive programs improve in their perception of their child's functional disability as well as have improved scores for their own anxiety, depression, and parental stress.[45] Furthermore, parents of children enrolled in these programs have been shown to be more willing to allow their child to adopt a self-management approach to pain. They also reported reductions in their perceptions of their child's fear of pain with treatment.[46] Unfortunately, although this treatment approach is gaining momentum, few of these programs exist worldwide.

Treatment goals for parents enrolled in such programs typically include:

- Addressing parental responses to pain
- Helping parents to foster self-management of pain within their child
- Addressing family dynamics and interactions around pain

The day treatment model provides a higher intensity of care and treatment coordination than can be afforded through outpatient services while providing patients opportunities to rehearse the skills they are learning during nontreatment hours. Interventions in these programs often include parent groups, individual parent support

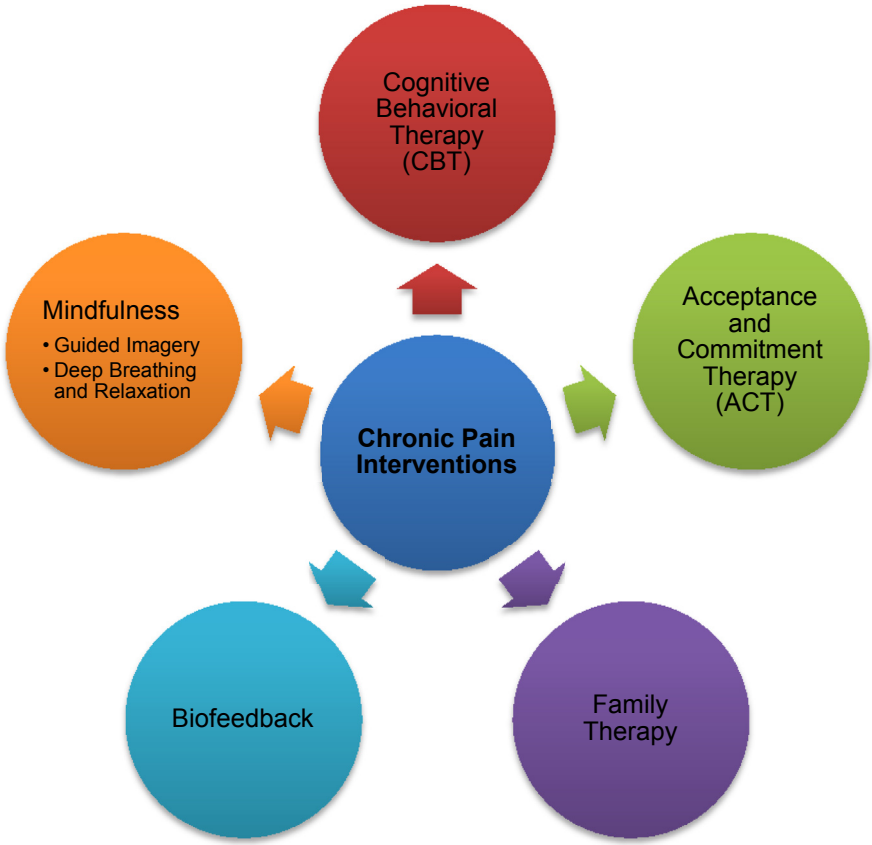

Fig. 2. Interventions for parents of children with chronic pain.

and counseling, family therapy, and parent observation of treatment modalities, including physical and occupational therapy. For many parents enrolled in these programs, learning not to protect their child from pain feels counterintuitive.

The following case study highlights the role of cognitive-behavioral family therapy in conjunction with alternative therapeutic treatment modalities including the following:

- Biofeedback is a noninvasive technique, which monitors the body's physiologic sensations through electrical sensors. The sensors provide patients information about their bodily functioning through a sound or visual cue, with the goal of fostering patients' awareness of their physiologic reactions and subsequent behavior.
- Deep breathing, relaxation, and guided imagery is a technique used to treat ailments ranging from anxiety to pain through the foundations of the mind-body connection, altered state, and locus of control. Self-imagery can be engaged in verbally or visually through the use of a script or image.
- Behavior plans are utilized to target problematic pain behaviors (eg, not attending school) that are impacting functioning. Behavior plans rely on positive reinforcement to achieve behavior change.

Clinical Example 1

Anna (All names and identifying information have been changed.), an 8-year-old girl, presented to the Pain Service with a recent onset of neuropathic pain in her right lower leg that impacted her gait and that resulted in significant behavioral regression, mood lability, separation anxiety, and sleep difficulties. Given the impact her pain and emotions were having on her functioning (eg, missing school, not able to leave her mother), Anna was admitted to a day hospital for children with complex chronic pain. Anna and her parents participated in twice-weekly family CBT sessions for 3 weeks. During these sessions, it was apparent that Anna's parents had drastically different responses to Anna's pain behaviors. Her mother was observed allowing her daughter to avoid pain-provoking activities. She also interacted with Anna as if she was much younger (eg, talking to her in baby talk) and provided positive attention to Anna (eg, buying her presents) when Anna was in pain. Her father tended to ignore Anna's behaviors but was also distant as if he wanted to avoid the problem. Parent sessions focused on having parents communicate about their different responses and problem solving around more appropriate responses to Anna's pain, such as ignoring pain behaviors and providing praise when Anna engaged in an age-appropriate task (eg, doing homework). Given Anna's young age, the parents also participated in family based physical and occupational therapy sessions with a psychologist present. These sessions focused on having the psychologist provide feedback in the moment regarding parent-child interactions around pain. Family CBT sessions also included constructing numerous behavioral plans to promote positive, active coping as well as teaching biobehavioral strategies for pain management, such as deep breathing, relaxation, biofeedback, and guided self-imagery. At the end of 3 weeks, Anna was walking with an even gait, displaying developmentally appropriate behavior, and was engaged in active coping skills. Her mother stated that she wanted to become a support for other parents dealing with children with chronic pain conditions. Anna successfully returned to school. At 1 year after discharge, gains were maintained and overall Anna was functioning well.

Adopting an acceptance-based treatment approach to family therapy, especially by exploring values, can also be effective. These techniques can foster a shift in the family's perspective from paying attention to illness and pain to rewarding functioning. This type of intensive treatment model can be highly effective at altering a family's shared belief system around pain and illness and decreasing parents' distress and protective responses to their children, thus, fostering more adaptive coping in all family members.

The following clinical example incorporates the model of acceptance and commitment therapy (ACT).[47,48] The goals of ACT are as follows:

- Unpack and decipher individual cognitions surrounding communication
- Recognize thoughts and emotions without judgment with the goal of becoming self-aware
- Set personal goals based on individual values

Clinical Example 2

Emily, a 16-year-old girl, presented to the Pediatric Headache Program with a 2-year history of intermittent and predominantly tension-type headaches as well as migraines secondary to a viral infection. Complicating her presentation was a longstanding history of attention-deficit/hyperactivity disorder (ADHD), inattentive subtype, anxiety, and depression since 10 years of age. Emily also had a trauma history. Since the onset of her pain, Emily had had significant functional disability (eg, school avoidance, quitting softball). Notable family history included anxiety, depression, substance abuse, and borderline personality disorder. Emily had seen more than 5 different therapists in the past for her multiple mental health issues; however, the coping skills she had previously learned for her anxiety and depression were not helpful for her pain. Despite trying numerous medications, injections, and physical therapy, pain and disability persisted and Emily was referred for pain-focused psychology.

When Emily presented to therapy, she stated, "With the migraines, sometimes they prohibit me from doing what I want to do. The frustration that comes along with this also lowers my self-esteem. The depression and headaches are a vicious cycle; I'm most often dealing with one or the other, and sometimes both."

Emily's therapeutic course was long and difficult. She was seen for 88 sessions. It became apparent during treatment that Emily required a different orientation from CBT or biofeedback. She was keenly aware that her mental health and pain issues were longstanding, and she was not sure they would ever change. Treatment shifted focus to an acceptance orientation. Specifically, mindfulness strategies were used, and treatment focused on values clarification in order to enhance psychological flexibility and help target avoidance-based behavior that can interfere with quality of life and values-based living. For Emily, this included doing well in school, taking care of her nieces, and eventually becoming a doctor so she could help others. To accomplish this, Emily had to be willing to experience distressing physical sensations, emotions, and thoughts that interfered with her ability to alter dysfunctional behavior. Importantly, in order to accomplish this, Emily's mother also had to be willing to allow her daughter to experience distress.

She had a strong, dependent relationship with her mother. Although her mother sometimes joined the sessions, Emily's goal became coming to the sessions alone and being an advocate for herself. To this end, Emily's mother was typically seen at the end of each session for parenting work. Emily's mother wanted a quick fix for Emily and could not understand the shift in therapy to an ACT approach. At one point, she threatened to take Emily out of therapy if Emily experienced any type of distress. She initially refused to think that her daughter would ever have to cope with long-term pain, depression, or anxiety. Parent sessions focused on providing psychoeducation on the ACT model as well as exploring the mother's own values as well as values she held for her daughter. She said that she wanted Emily to be able to reintegrate back to school and eventually be able to move out of the home to attend college. Having Emily and her mother engage in ACT was effective. Emily was gradually able to get back to school and eventually graduated among the top of her class before enrolling in a nationally ranked university. Today she still experiences anxiety, panic attacks, and depression but rarely has headaches and has not had any interventional injections in more than 2 years.

Outpatient therapy can often be effective, but sometimes complicated family dynamics and impaired family functioning requires a more intensive treatment approach. The following clinical example highlights how family therapy sessions in the context of intensive rehabilitation can be used to identify the maladaptive dynamics that exist within the family system. Specifically this case uses:

- Family systems therapy and parent-based intervention
- Incorporating dual-parent functioning in child's treatment
- Family dynamics and communication

Clinical Example 3

Jack, a 15-year-old boy, presented to the Pain Service with a 2-year history of postural orthostatic tachycardia syndrome (POTS) and comorbid anxiety, obsessive-compulsive disorder, and ADHD, inattentive subtype. His POTS symptoms also included diffuse body pain and headaches. He described his pain as "severe enough to keep me from doing anything," which was accurate as he had not attended school in 2 years and rarely left home. He reported, "I don't have the strength to get to the bathroom." His sister also had a longstanding history of chronic pain. Because of Jack's level of disability, he was admitted to the same program as Anna (described earlier). His family psychology sessions were different from Anna's. There was a strong pattern of modeling and reinforcement of pain and illness behaviors in the family. His mother had quit her job to remain at home with her children after they became sick.

During family sessions, the mother was highly protective of Jack and constantly asked him if he needed to lie down or needed food. Jack often turned to his father before responding to questions. The treatment team learned about developmentally inappropriate interactions, such as cosleeping at home and observed disproportionate amounts of hugging and kissing during psychology sessions. Family sessions focused on addressing family dynamics and interactions around pain. The authors came to understand that father felt left out of the family unit. He revealed that since his 2 children had developed POTS and diffuse body pain, he felt that he did not exist. The family was previously active and particularly enjoyed hiking and rock climbing but no longer left home. He expressed that he felt forgotten; he was not even able to sleep with his wife who was cosleeping with her 2 adolescent children. Family sessions focused on giving the father a voice to express these feelings as well as problem solving how to promote functioning and shift the identity of the family from one of illness and disability to one of functioning and wellness. The authors asked the parents to write down all the ways in which the family had changed, everything from not leaving home and cosleeping to little things like who clears the table after dinner and all the hobbies the mother and father are no longer engaged in. They then shared this with each other, which was the catalyst for change. The mother acknowledged that she had no idea how much had changed within the family. The authors also addressed some longer-standing family interaction patterns influencing the pain experience, such as stubborn, argumentative, and rigid personality styles.

After a 5-week admission, Jack no longer had POTS symptoms and was discharged to school. Four months after discharge, Jack was back at school full-time and the family was exercising and rock climbing together, gains that were maintained at the 1-year follow-up.

NEW CLINICAL DIRECTIONS

The authors spend much of the early part of this article describing how parents can make their children's acute pain worse through their anxiety, or attempts at reassurance, and even suggest they play a minimal role during pediatric procedures. Conversely, with chronic pain, family involvement is often crucial for improvement to take place. A Cochrane Review supports this position by concluding there is good efficacy for the inclusion of parents in psychological therapies aimed at pain reduction and management for children with painful conditions.[49]

Most clinical interventions for parents of children with chronic pain are imbedded within child-focused interventions and are psychoeducational and behaviorally based as a way to augment the child's ability to manage and cope with pain.[41,45,50] One recent study implemented a pilot parent-only art-therapy group curriculum for 53 parents of children enrolled in an intensive day hospital pediatric pain rehabilitation program.[51] The group art-therapy intervention was designed specifically to target the struggles of parents of children with chronic pain (seeking support, managing feelings of burden, helplessness, isolation, fear, and lack of time for self). This parent-only art group is the first of its kind and represents an innovative approach to addressing the needs of parents in this treatment setting. Additionally, the modules developed for this intervention were intended to help parents reflect on their *own* experiences, feelings, sacrifices, and difficulties since the onset of their child's pain, as opposed to asking the parents to retell their child's history. In this way, parents were encouraged to use their unique voice and narrate their own story. The pilot study evaluated parents' initial responses to the art-therapy groups, measured by perceived satisfaction and helpfulness. Results indicated that parents enjoyed participating in the group, agreed that they would try art therapy again, and found it to be a helpful, supportive, and validating experience.[51] More interventions such as these are warranted for the interdisciplinary treatment of complex pain.

SUMMARY

Parents of children undergoing medical procedures and with chronic pain have their own unique needs, separate from those of their children, which can still impact their child's pain experience and rehabilitation process. As discussed earlier, evidence of high levels of distress experienced by parents of children with chronic pain is well documented[52,53] as is recognition of their key role in how their child copes with and recovers from pain.[39]

Understanding the child and his or her pain experience in the context of the family is the key for addressing this widespread and impactful aspect of childhood. Future research should aim to include fathers, as most pediatric research typically focuses on mothers. This point is especially important given the recent findings that demonstrate differences in catastrophizing between mothers and fathers.[54] Siblings of children with pain are also a neglected area of research and warrant further investigation and inclusion of them into family based treatments for pediatric pain.

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