

COPING IN CHILDREN WITH HEADACHE AS PREDICTORS OF ADJUSTMENT
AND THE RELATIONSHIPS BETWEEN PARENT AND CHILD COPING STYLES

BY

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A Thesis
submitted to the Faculty of Graduate Studies
in Partial Fulfillment of the Requirements for
the Degree of

MASTER OF ARTS

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**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University
of Manitoba in partial fulfillment of the requirements of the degree
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MASTER OF ARTS

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Abstract

The effectiveness of children's mechanisms for coping with painful experiences will moderate the impact of these stressful circumstances in areas such as school, social relationships, level of disability, and in dealing with various medical procedures (Holden, Rawlins, & Gladstein, 1998; McGrath, 1990). The literature on coping has mainly focused on adults or healthy school-aged children (Ross & Ross, 1984). This study investigated the relationships between pain coping strategies and level of adjustment (e.g., low pain severity, depression, anxiety, and functional disability) in 35 children with headache and 34 "pain-free" children. The similarities between child and parent coping styles were also examined. Each child and parent completed a questionnaire consisting of items relating to pain coping strategies, depression, anxiety, functional disability, self-esteem, and family history of pain. For children with headache it was found that: approach coping was significantly related to pain severity and perceived pain controllability scores, problem-focused avoidance coping was significantly related to functional disability scores, and emotion-focused avoidance coping was significantly related to anxiety and depression scores. For the "pain-free" group it was found that: emotion-focused coping was significantly related to anxiety scores, and approach, problem-focused avoidance, and emotion-focused avoidance coping were significantly related to perceived pain controllability scores. There were no significant relationships found between parent and child coping scores for behavioral and cognitive coping strategies for both the headache and "pain-free" groups. Implications for pediatric pain management are discussed.

Coping in Children with Chronic Pain as Predictors of Adjustment and the Relationships
Between Parent and Child Coping Styles

Children with chronic pain are confronted with a series of stressful circumstances including the events contributing to the pain condition, dealing with the pain condition itself, undergoing stressful medical procedures, disability, and disruption in social and school relationships (Feuerstein & Dobkin, 1990; Holden, Rawlins, & Gladstein, 1998; McGrath, 1990; Rappaport & Leichtner, 1993). Therefore, children with chronic pain represent an important population in which to examine coping strategies and to evaluate the effectiveness of these strategies in alleviating pain and stress. It has been suggested that early coping experiences resulting in desirable or positive adjustment may foster the likelihood of effective stress management in adulthood (Curry & Russ, 1985). Research on coping has focused mainly on adults (Fanurik, Zeltzer, Roberts, & Blount, 1993; Ross & Ross, 1984; Spirito, Stark, Grace, & Stamoulis, 1991) and the majority of studies examining coping in children with pain have utilized non-pain groups (e.g., "healthy" school-aged children) or children with acute procedural pain (Siegel & Smith, 1989; Spirito, Stark, Gil, & Tyc, 1995). The literature on coping in children with chronic pain is limited (Sharrer & Ryan-Wenger, 1991) and studies have indicated that generalizations of adult methods of coping cannot necessarily be drawn to children (Band & Weisz, 1988; Causey & Dubow, 1992). Therefore, it seems important to investigate the way children with chronic pain syndromes cope with painful experiences because these coping mechanisms may relate to level of adjustment and extent of benefit from treatment (Siegel & Smith). Compas and Thomsen (1999) suggest that the ways children manage

the stressors associated with pain may be related to the frequency, severity, and duration of painful experiences.

Children's Pain Vocabulary

Knowledge of children's ability to describe pain is necessary to understand the ways they cope with painful episodes. Various studies have shown that young children possess a pain vocabulary, are able to identify and describe different areas associated with the pain experience, and can identify causes of pain including the sensory, evaluative, and affective components of pain (Harbeck & Peterson, 1992; Ross & Ross, 1984; Savedra, Gibbons, Tesler, Ward, & Wegner, 1982; Savedra, Tesler, Ward, Wegner, & Gibbons, 1981; Tesler, Savedra, Ward, & Holzemer, 1988). In a sample of 100 children and adolescents, Harbeck and Peterson (1992) investigated descriptions of pain, explanations of why pain hurt, and descriptions of the value of pain. Children's explanations to a series of vignettes describing three specific pains (skinned knee, injection, and headache) were found to increase in complexity with age. The children's understanding of why pain hurts and causes of pain were shown to progress from the youngest children being unable to verbalize a reason why pain hurts, to children describing the cause of pain in general terms and external to the body, and the oldest children offered psychological and physiological causes (Harbeck & Peterson).

Gaffney and Dunne (1986) examined if children's ideas about pain change with increasing age in a sample of 680 Irish school-aged children. These researchers found that younger children (5, 6, and 7 year olds) described their pain in concrete terminology where as older children (11, 12, and 13 year olds) characterized their pain in abstract

ways reflecting on both physical and psychological dimensions. Furthermore, Gaffney (1988) found that 5 and 6 year olds used sensory and evaluative pain descriptors, whereas 8 to 10 year olds included affective descriptions, more complex descriptors, and described pain in terms of fear or threat. The 11 to 14 year olds incorporated temporal aspects of pain and provided more complex evaluative and qualitative words to describe their pain.

Hurley and Whelan (1988) interviewed 48 school-aged children, from the first through eighth grades, to determine their conceptualizations of pain. Children between the ages of 2 and 7 years described pain as a physical experience and viewed magic as a means to alleviate the pain. Children aged 7-12 years described pain in physical terminology and were able to specify the pain location as pertaining to the body and the oldest children in the study (12 years and older) demonstrated problem-solving skills in relation to pain (Hurley and Whelan).

Studies have shown that children's ability to conceptualize pain is augmented with increasing age. It would therefore seem plausible that children's coping strategies in dealing with pain would progress through a similar pattern, that is, strategies used to manage pain would increase in number and complexity with increasing age.

Children's Strategies to Cope with Pain

The concept of coping has been conceptualized in multiple ways and inconsistencies have been noted in the means of operationalizing the concept (Fernandez & Turk, 1989; Rudolph, Dennig, & Weisz, 1995; Stone & Neale, 1984). However, most coping models highlight problem-focused and emotion-focused strategies, or behavioral

and cognitive approaches (Gil, Wilson, & Edens, 1997). Problem-focused approaches have been defined as efforts directed at “defining the problem, generating alternative solutions, weighting the alternatives in terms of their costs and benefits, choosing among them, and acting” (Lazarus & Folkman, 1984, p. 152). This means that the individual will direct his or her efforts in changing the environment to alleviate the aversive components to the situation or experience. Emotion-focused coping refers to “cognitive processes directed at lessening emotional distress and include strategies such as avoidance, minimization, distancing, selective attention, positive comparisons, and wresting positive value from negative events” (Lazarus & Folkman, p. 150). Some emotion based coping strategies are directed at manipulating or distorting a construction or perception of an event (Lazarus & Folkman). Behavioral coping pertains to overt responses in dealing with a stressor, whereas cognitive coping refers to efforts to change mental representations of a situation, or changes in thought processes (Gil et al., 1997).

Various conceptual models of coping have been proposed. Lazarus and Folkman (1984) define coping as “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (p.141). This conception of coping implies a process-oriented system requiring effort in dealing with the stimuli. These researchers hypothesize that both environmental and individual factors contribute to individual differences in coping when comparing the ways individuals cope under similar conditions (Lazarus & Folkman). Siegel and Smith (1989) suggest that the following factors can influence a child’s evaluation of a painful experience: cognitive-developmental level, perceived

controllability of the situation, prior experiences, appraisal of the painful event, and parental support.

Several studies have investigated coping strategies in healthy school children undergoing painful procedures. Curry and Russ (1985) derived nine different types of cognitive and behavioral strategies based on child observations and interviews following a dental procedure. The strategies included: information-seeking, positive cognitive restructuring, defensive reappraisal, diversion thinking, seeking support, maintaining control through direct efforts, reality-oriented working through, behavior-regulating coping cognitions, and emotion-regulating coping cognitions (Curry & Russ).

Information-seeking strategies involved attempts to gain information through questions or observation. Positive cognitive restructuring was defined as attending to the positive elements associated with the procedure. Defensive reappraisal included denial, and diversion thinking was defined as re-directing attention and thoughts from the procedure. Seeking support referred to verbal and/or behavioral attempts to establish a positive relationship with the dentist. Maintaining control through direct efforts referred to attempts to actively participate or to set limits. Reality-oriented working through pertained to the construction of accurate thoughts of the procedure. Behavior-regulating cognitions were defined as thoughts or self-statements directed at regulating behavior during treatment, and emotion-regulating cognitions were defined as statements or thoughts directed at regulating fears and distress.

Curry and Russ (1985) found that among children undergoing dental treatment, older children used more cognitive strategies such as information and support seeking,

denial, and avoidance whereas younger children were more likely to employ behavioral approaches. All children were found to use at least two of the nine strategies and at least one behavioral coping response during the dental procedure (Curry & Russ). There were no significant correlations between type of coping strategy, sex, and ethnicity (Curry & Russ).

Altshuler and Ruble (1989) examined healthy children's coping styles in response to a series of hypothetical vignettes involving a dental procedure (filling a cavity) and receiving an injection at the doctor's office. It was found that children employ a variety of coping strategies including approach (e.g., information seeking), emotional manipulation (e.g., tell someone how you feel), avoidance (e.g., behavioral or cognitive distraction, escape, denial) as well as maladaptive strategies (e.g., focus on the situation) (Altshuler & Ruble). These researchers also found an increase in cognitive distraction strategies with increasing age. Siegel (1983) investigated self-generated coping strategies used by children (8-14 years old) who were hospitalized for minor surgery. A structured interview was conducted one day prior to surgery and following several different stressful and pain provoking procedures including blood tests and injections. Children were categorized as "successful" copers if rated by nurses and doctors as being cooperative, demonstrating low anxiety during the procedures, and showing high tolerance for physical discomfort. "Unsuccessful" copers included children rated by nurses and doctors as being uncooperative, showing high levels of anxiety, and demonstrating low tolerance for physical discomfort. In comparison to successful copers, unsuccessful copers used a lower number of strategies for dealing with stress or painful experiences and were more

likely to catastrophize (e.g., engaging in negative self-statements about their ability to manage pain) (Siegel). Successful copers were more likely to employ preplanned strategies involving imagery-based techniques and asked more questions about the hospital (Siegel).

Caty, Ellerton, and Ritchie (1984) conducted a content analysis of coping strategies reported in 39 case studies of hospitalized children (20 months -10 years old). It was found that 64.3% of behaviors were classified in the action/inaction category. This category refers to, "all non-cognitive behavior directed toward managing the self or the environment by either acting upon or holding back action impulses" (p. 279). The information exchange category (refers to both verbal and nonverbal behaviors directed at gathering, clarifying, or regulating the amount of information received) accounted for 31.1% of behaviors, and 4.6 % were categorized in the intrapsychic dimension (refers to defense mechanisms including projection, denial, and regression as well as cognitive processes to regulate emotions) (Caty et al.). In another study, Alex and Ritchie (1992) found that children (7-11 years old) used distraction (e.g., watching TV), thought-stopping or wishful thinking, or inactivity (e.g., sleeping) to relieve their distress following surgery.

Studies examining coping with chronic pain have examined children with various conditions including headache, arthritis, sickle cell disease, and recurrent abdominal pain. Holden, Rawlins, & Gladstein (1998) found that among 57 school-aged children with recurrent headache the most frequently employed coping strategies included seeking medical help, relaxation, wishful thinking, and maintaining a future orientation. These

strategies were used more frequently than the active, avoidant, or negative coping strategies. Negative coping strategies (e.g., self-criticism and criticism of others) were found to be utilized the least. Overall, the most helpful coping strategies were found to be seeking medical help, relaxation, cognitive restructuring, seeking social support, and problem solving whereas the least helpful strategies included self criticism, emotional regulation, and criticism of others (Holden et al.). Gender differences in coping were found between cognitive restructuring and social withdrawal; females reported using cognitive restructuring more frequently than males and males reported using social withdrawal more frequently than females (Holden et al.).

Reid, Gilbert and McGrath (1998) investigated the relationship between child-rated coping and pain intensity, pain duration, perceived controllability of pain, functional disability, and several psychological dimensions (e.g., anxiety, depression). These researchers utilized the Pain Coping Questionnaire (PCQ) to measure coping strategies in children (7-17 years old) with recurrent pain (arthritis and headache). The PCQ measures approach coping strategies, problem-focused avoidance strategies, and emotion-focused avoidance strategies. Approach strategies refer to efforts directed to manage the pain and ways to modulate feelings when in pain (Reid et al.) The approach scale is comprised of the following subscales: information seeking, problem solving, positive self-statements, and seeking social support (Reid et al.). The problem-focused avoidance scale measures an individual's efforts to extricate from the pain and is comprised of the following subscales: behavioral distraction, cognitive distraction, and positive self-statements (Reid et al.). The emotion-focused avoidance scale pertains to

strategies that do not regulate emotions and is comprised of the externalizing and internalizing/catastrophizing subscales (Reid et al.). The approach coping strategies refer to efforts directed toward the stressor whereas avoidance coping strategies refer to efforts directed away from the stressor (Roth & Cohen, 1986).

Reid et al. (1998) found that children (8-12 years) used less approach coping in comparison to adolescents (13-17 years). In addition, a positive relationship was found between emotion-focused avoidance strategies and anxiety for both the arthritis and headache groups and between depression and distress for the headache group. A negative relationship was found between level of distraction and children with headache; greater distraction resulted in less pain distress. It appears that for both pain groups, higher levels of emotion-focused avoidance were related to poorer adjustment. Specifically, greater emotion-focused avoidance by children with arthritis was related to higher levels of pain intensity and children with headache reporting greater emotion-focused avoidance reported less pain controllability and lower levels of coping effectiveness (Reid et al.). Distraction was found to be associated with greater levels of controllability for both pain groups.

Varni, Wilcox, Hanson, and Brik (1988) examined the influence of the following variables on the functional status (activities of daily living) of children (5-16 years) with juvenile rheumatoid arthritis: psychological adjustment, family environment, and severity of disease (e.g., mild, moderate, severe, remission). It was found that psychological adjustment (e.g., low depression, anxiety, acting out behaviors), family psychosocial relationships, pain level, and disease activity predicted 57% of the variance in functional

activity (e.g., activities of daily living, school functioning, social functioning) (Varni et al., 1988).

Varni et al. (1996) found that among 5-16 year olds with rheumatologic disease that cognitive refocusing was related to both lower levels of depression and pain whereas striving to rest and be alone coping was associated with higher levels of current pain, depression, anxiety, internalizing emotional problems, and lower levels of self-esteem. These researchers used the Waldron/Varni Pediatric Pain Coping Inventory (PPCI), which is designed to measure the ways children and adolescents cope with pain. The scale is comprised of five factors including cognitive self-instruction (e.g., Pretend I don't have any pain or hurt), seeks social support (e.g., Tell my mother or father), problem-solving (e.g., Ask for medicine, Lie down), distraction (e.g., Try not to think about the pain or hurt or ignore the pain or hurt), and catastrophizing/helplessness (e.g., yell or cry) (Varni et al.).

Problem Focused and Emotion Focused Coping: Outcome Studies

Several researchers have suggested that healthy school-aged children who use active, problem-focused coping strategies experience more favorable outcomes in comparison to children who employ emotion-focused coping (Compas, Worsham, & Ey, 1992; Peterson, 1989). Peterson (1989) found that children undergoing stressful medical procedures who utilized problem-focused strategies experienced greater improvements in behavioral, emotional, and bodily states. Gil et al. (1993) found that children and adolescents with sickle cell disease who used problem solving coping (e.g., cognitive and behavioral strategies including diverting attention and positive self-talk) experienced

lower levels of functional disability (e.g., school attendance, peer interactions, and household duties) in comparison to children and adolescents who scored higher on measures of emotion-focused coping (e.g., catastrophizing and passive strategies).

Researchers have suggested that the effectiveness of problem-focused and emotion-focused coping may be dependent on the type of stressor and disease/illness (Auerbach, 1989; Folkman, 1984; Spitzer 1992). Weisz, McCabe, and Dennig (1994) suggest that emotion-focused coping is related to lower levels of distress for uncontrollable pain. For individuals with chronic diseases, Auerbach (1989) suggested that emotion-focused coping is more effective for dealing with short term stressors that are perceived as low in controllability. Lazarus and Folkman (1984) further suggest that emotion-focused coping may be more effective in dealing with situations that are uncontrollable and also require acceptance. In a sample of 20 children with hemophilia (6-13 years), Spitzer (1992) found that children used problem-focused coping when dealing with existential concerns (aspects of the situation that are changeable such as reducing or ceasing bleeding). However, in dealing with treatment procedures (concerns that are not amenable to change), children were found to use emotion-focused coping. Snow-Turek, Norris, and Tan (1996) examined passive and active coping strategies among a sample of 76 adults (29-74 years) from a Pain Management Clinic. These researchers found that passive coping strategies (emotion-focused strategies including helplessness and dependence on others to manage the pain) were related to greater levels of physical disability and psychological disturbances. Active coping strategies (problem-focused efforts including self-reliance and control) were associated with greater levels of

physical activity and less psychological impairment. Auerbach also notes that individuals with chronic disease may erroneously respond to stressors (e.g., use problem focused coping strategies, such as attempts to control the environment, when dealing with a largely uncontrollable situation) and therefore not employ strategies that may be more effective in dealing with the situation.

Compas, et al. (1992) suggest that coping strategies used for a particular stressor vary over time and change in response to different stressors and different situations. Further, the use of problem-focused and emotion-focused coping may be dependent on an individual's primary and secondary cognitive appraisal of the stressor (Folkman, 1984; Folkman & Lazarus, 1980). As noted by Folkman and Lazarus (1984), cognitive appraisal is "largely evaluative, focused on meaning or significance, and takes place continuously during waking life" (p. 31). Primary appraisal includes an individual's evaluation of the benefits and costs of the situation, whereas secondary appraisal refers to a decision making process whereby an individual generates a response to the stressor (Carver, Scheier, & Weintraub, 1989).

Some research suggests that problem-focused and emotion-focused coping strategies are related to perceived controllability (Folkman & Lazarus, 1980; Forsythe & Compas, 1987), however, other researchers have suggested that emotion-focused coping may be more tied to emotional arousal and distress (Compas, Worsham, & Ey, 1992). Folkman (1980) proposed that as negative emotions and perceptions of threat increase, an individual would use more emotion-focused efforts in dealing with the situation. Compas, Forsythe, and Wagner (1988) found that problem-focused coping was associated with

greater levels of perceived control, whereas emotion-focused coping was not associated with levels of controllability. Forsythe and Compas (1987) found positive associations between emotion-focused coping and emotional distress.

Overall, studies seem to suggest that problem-focused coping may be more effective in managing stressors that are controllable or situations that can be improved by taking action (Auerbach, 1989; Kaloupek & Stoupakes, 1985), whereas emotion-focused coping may be more adaptive when managing a largely uncontrollable situation (Compas, Worsham & Ey, 1992). An individual's cognitive appraisal of the situation (perceived controllability) and level of emotional arousal also appear to play a role in determining the type of coping strategy used.

Adult Versus Child Pain Coping Strategies

Research examining the differences between adult and child coping strategies is limited (Folkman, et al., 1987), and this may be due to the complex factors that are unique to childhood coping. Two important factors, developmental level and memory will influence a child's perception of a stressor (e.g., capacity to rate the intensity and duration of a painful experience) as well as his or her perceived ability to manage the situation (Peterson, 1989). A child's developmental level will further limit the type of coping strategy used and the likelihood that the chosen strategy will be effective in dealing with the stressor (Peterson). Other factors influencing a child's ability to cope with a stressor include personality, social perception, self-control, cognitive and linguistic ability, and perceptual motor skills (Compas, Worsham, & Ey, 1992; Peterson).

Peterson (1989) suggests that there may be a greater likelihood for young children

to experience cognitive distortions that in turn can influence their appraisal of a stressor. It has been shown that children are more likely than adults to perceive illness or the need for surgery as a punishment (Sorensen, 1993). For example, children with diabetes have been found to ascribe their condition as a punishment for excessive consumption of sugar (Willis, Elliot, & Jay, 1982).

Age related changes in coping strategies have been conceptualized from developmental and contextual frameworks (Folkman et al., 1987). The developmental interpretation states that changes in coping mechanisms are stage-related (in comparison to environmental-related), whereas the contextual framework suggests that differences in coping strategies between age groups are dependent on age differences in the type or source of the stress (e.g., losses, threats, and challenges) (Folkman et al.). Overall, research appears to support the contextual hypothesis, that is, age differences in coping are due to the changes in the type of stressor being managed (Folkman et al.). However, it is important to note that studies comparing differences in coping strategies between age groups have used adult populations and have failed to examine differences between adult and child populations in coping. An adult's cognitive, verbal, and social level exceed that of a child, and as a result, a child's coping strategies are unlikely to resemble the ways that an adult copes with stressors (Peterson, 1989). Peterson further states, "Because in many cases the precise list of prerequisite abilities for given coping skills is unknown, coping deficits within the developing child are even more complex and difficult to study than deficits in adult coping" (p. 382).

Research has found consistencies in showing an increase in the use of emotion-

focused coping strategies and cognitive-developmental level (Altshuler & Ruble, 1989; Band & Weisz, 1988; Curry & Russ, 1985), however, studies are inconsistent in finding a relationship between problem-focused coping strategies and age (Altshuler & Ruble). The development of emotion-focused coping efforts appears to occur later in childhood in comparison to problem-focused coping skills (Compas, Worsham, & Ey, 1992).

Compas, Worsham, and Ey (1992) suggest that problem-focused coping strategies develop early in childhood. Problem-focused coping may be acquired earlier in childhood through the process of social modeling of adult behaviors since many of these strategies are observable to the child (Compas, Worsham, & Ey). Emotion-focused coping skills may be dependent on the child's self-awareness (i.e., internal emotional states) and many emotion-focused coping strategies are covert. Therefore young children may be less apt to learn emotion-focused coping skills through observational learning and therefore develop these types of coping strategies later in childhood (Compas, Worsham, & Ey).

Social Modeling and Coping

Another important component to consider when examining children's coping includes the influence of parental modeling or observational learning of pain behaviors in the ways children manage painful experiences. The ways an individual copes with a stressful event or situation are established through the process of learning (Armstrong, Lemanek, Pegelow, Gonzalez, & Martinez, 1993). These learned coping behaviors are speculated to be reinforced by their previous effectiveness in dealing with a stressor or the emotional responses accompanying that stressor (Armstrong et al.). Numerous studies have investigated the impact of the family unit on individual pain behaviors and

pain attitudes (Burbeck, 1979; Nicassio & Radojevic, 1993; Pless & Satterwhite, 1973; Skevington, 1983; Thomas, Roy, & Cook, 1992; Turk, Rudy, & Flor, 1985). Children can develop expectations of how they should respond to their own pain by observing the manner their parents respond to painful experiences. For example, a child may observe that a family member in pain will receive attention, concern, and care from other members as a result of expressing great discomfort associated with the painful state. In this example, the child has been indirectly reinforced for emitting similar methods of coping in dealing with their own pain. Violon and Giurgea (1984) suggested that a pain condition in a family member can increase the awareness of other family members to their own body and pain sensations.

Children observe their parent's response to pain through methods such as self-medication, seeking advice from relatives or friends, visiting a physician, or by utilizing existential methods to deal with pain. Through observation, a child learns the regimen their parents use to cope and avoid painful states. Parents also model their own attitudes toward the utilization of therapeutic regimes and teach their children how to discriminate the signs of health and illness (Elton, Stanley, & Burrows, 1983). Skevington (1983) points out that the action an individual takes to control pain is influenced by the pain sufferers' prior expectations, experiences, and standards of comparison. Furthermore, the occurrence of pain behaviors as well as the manner children cope with pain may be reinforced by a family members attention, concern and care. Secondary gain can serve as a reinforcer of pain if the child is absolved from unpleasant duties and receives attention and care when he/she grimaces, moans, or walks with a limp as a result of the pain (M. R.

Thomas, personal communication, September, 1998).

Research has found support for the modeling theory to explain the development of pain behaviors. Thomas, Roy, & Makarenko (1989) reported a positive correlation between the number of family/peer pain models for the following pains, head, neck, chest, tooth, ear, and nausea and the participant's perception of the possibility he/she may experience those illnesses in the future. In addition, Thomas et al. (1992) found that university student perception of the severity and frequency of their parents' pain experiences predicted the student's behavioral expressions of pain.

Turkat (1982) found that individuals who reported greater avoidance of responsibilities when ill were more likely to be exposed to a parental model demonstrating work avoidance in comparison to those individual's not exposed to parental models. Studies have also suggested that the number of available models and prior learning experiences influence the frequency of pain complaints (Rimm & Masters, 1980). Therefore, it would seem plausible that the number of family pain models available to a family member would be directly related to the number of reports of pain by the latter.

Edwards, Zeichner, Kuczmierczyk, and Boczkowski (1985) found a positive correlation between the number of family pain models among male and female college students and his or her current level of pain complaints. These researchers reported no differences between males and females with respect to the number of family pain models. However, females were found to be more affected by pain models in comparison to males. Specifically, family pain models of five types of pain (joint, muscle, abdominal,

menstrual, and tooth/ear) predicted the presence of these types of pain in females, whereas only two models of pain (neck and joint) predicted the occurrence of these pains in males (Edwards et al.).

There is no literature examining the role of parental modeling specific to child pain coping mechanisms. However, considering the basis for the acquisition and maintenance of pain behaviors through the process of modeling, one can speculate that the more observable the coping behavior, the greater the likelihood that a child will observe that behavior and emulate it. Since problem-focused coping is more likely to include overt coping strategies (such as going to sleep, asking for medication, seeking a doctor, information seeking, and taking deep breaths), it would seem that children would be more likely to exhibit these types of coping strategies in comparison to emotion-focused strategies which are mostly covert (such as wishing for the pain to go away, praying, meditating, and regulating emotions) (Compas, Worsham, & Ey, 1992).

Measurement of Pain in Children

Another challenge facing researchers and practitioners involves the measurement of pain in children (Chapman et al., 1985). The present study does not attempt to examine the complexity of pain assessment and measurement procedures in children. However, a review of the literature is warranted because valid pain measurement tools are critical for determining methods of pain relief (McGrath, Cunningham, Goodman, & Unruh, 1986) and investigating the nature, etiology, and factors related to pain (McGrath, 1996). An instrument measuring pain must be valid, reliable, practical (Hain, 1997), and control for response bias (McGrath et al., 1996). Valid pain measurement tools would also seem

critical when investigating the coping strategies children use to manage pain. By examining the ways children deal with pain, researchers and practitioners can provide optimal pain management (McGrath, 1987; Wong & Barker, 1988).

McGrath, et al. (1996) note that the self-report is presently the most widely used tool for pain assessment in children. This review will focus on children's ability to self-report their pain experiences, specifically by using a quantitative graduated scale (e.g., visual analog scale). It seems critical to review the validity and reliability of these instruments because the self-report and visual analogue scale is utilized in the present study to measure pain coping strategies and various psychological variables (e.g., anxiety, depression, functional disability, pain severity) in children with chronic pain.

Pain is a subjective, multifaceted experience and therefore, measurement tools are designed to gather information indirectly through verbal, observation, and physiological methods (McGrath et al., 1986). Various components of the pain experience can be collected qualitatively through structured interviews (e.g., verbal descriptions such as aching or sharp) or gathered quantitatively by rating scales (e.g., numerical ratings of pain intensity) (McGrath et al.). In addition, behavioral observations and physiological responses have been used to measure pain in children (Beyer & Aradine, 1987). However, establishing valid measurement tools for children is challenging due to differences in levels of cognitive-development, ability to comprehend instructions of a self-report, and in ability to communicate pain experiences (Craig, Grunau, & Branson, 1988; McGrath et al.).

A child's self-reporting of his or her own pain experiences, including emotions,

images, and definitions, have been researched. The visual analog scale has been noted as the most sensitive instrument in measuring intensity (Huskisson, 1983), and various studies have shown that children can use visual analog scales (VAS) to rate their pain intensity (Abu-Saad & Holzemer, 1981; Lander & Fowler-Kerry, 1993; Savedra & Tesler, 1989). Hain (1997) noted that children as young as six years old have the ability to rate their pain intensity using the following scales: Faces Scale, The Oucher, Poker Chip Tool, and Color Scales. Each of these scales presents a visual gradation of pain (either numerically or pictorially with faces) whereby the child would rate his/her pain intensity ranging from dimensions such as "No pain" to "Worst pain." Studies have shown that children between the ages of six years and adolescence can rate their pain using numerical scales ranging from 0-5, 0-10, or 0-100 (McGrath, 1996). Furthermore, Abu-Saad and Holzemer (1981) reported that the VAS is a reliable and valid tool for measuring pain in children between the ages of 9 and 15 years. By using the VAS, children can rate different dimensions of the pain experience including intensity, duration, unpleasantness, and affective states (McGrath, 1987; McGrath et al., 1996).

Studies have shown that children possess a pain vocabulary (Ross & Ross, 1984; Savedra et al., 1982; Tesler et al., 1988), provide more complex pain descriptions with increasing age (e.g., attributing causes of pain to psychological and physiological factors) (Gaffney, 1988; Savedra et al., 1981), and utilize a variety of coping strategies to manage pain (Band & Weisz, 1988; Causey & Dubow, 1992; Curry & Russ, 1985; Reid et al., 1998; Spirito et al., 1991). In addition, researchers have suggested that social modeling of pain can serve as a mechanism of pain transmission (Thomas et al., 1992).

The present study investigated the effectiveness of coping strategies employed by children with headache (migraine and tension) to alleviate a recent painful headache episode. A recent painful episode was defined as experiencing headache in the past month. The relationship between parent- and child- self-reports of coping to manage pain was also examined.

Coping strategies to manage pain were assessed across two different groups of children and their parents, specifically children with headache (migraine and tension) and children without headache or a history of pain problems (control group). The present study examined approach, problem-focused avoidance, and emotion-focused avoidance coping by headache and pain-free children to deal with pain. Further, the influence of different coping strategies on level of positive adjustment (e.g., low scores on depression, anxiety, functional disability, and pain severity) for the headache and pain-free groups were examined. It was hypothesized that:

1. Similar to Reid et al. (1996), as measured by the Pain Coping Questionnaire (PCQ), approach and problem-focused avoidance strategies in children would be related to better adjustment (e.g., low pain severity, depression, anxiety, functional disability) and emotion-focused avoidance strategies would be related to poorer adjustment (e.g., high pain severity, depression, anxiety, functional disability) for each group (headache and controls). Furthermore, children's perceptions of greater pain controllability would be related to higher levels of approach and problem-focused avoidance and related to lower levels of emotion-focused avoidance coping.
2. Significant positive correlations would be found between parent and child self

reports for behavioral coping strategies (e.g., increasing behavioral activity scale as measured by the CSQ and the behavioral distraction scale as measured by the PCQ) for each group (headache and controls). Considering the basis for the acquisition and maintenance of pain behaviors, it was expected that children would observe and emulate parent pain coping strategies. Problem-focused coping includes overt coping strategies (such as going to sleep or taking deep breaths), therefore, it would seem that children would be more likely to use these types of coping strategies in comparison to emotion-focused strategies which are mostly covert (such as wishing for the pain to go away or regulating emotions) (Compas, Worsham, & Ey, 1992).

3. Parent and child reports for cognitive distraction, positive self-statements, and catastrophizing, as measured by the CSQ and the PCQ, would not be significantly correlated for each group (headache and controls). Studies have suggested that covert or non-observable coping strategies would be less likely to be emulated by children (Compas, Worsham, & Ey, 1992; Reid et al., 1998).

4. Parents with current chronic pain (as measured in the demographic questionnaire) who have a child with headache would have pain coping behaviors more similar to their child's pain coping styles in comparison to children of parents without a current chronic pain problem. Studies have found that family role models can influence individual pain behaviors and attitudes (Nicassio & Radojevic, 1993; Turk, Rudy, & Flor, 1985).

Method

Participants

Seventy-three parents and seventy-six children participated in this study and were

recruited by seven pediatricians from a primary Pediatrics clinic in Winnipeg or from one of three Assiniboine South School Division No. 3 elementary schools (Beaverlodge elementary school, Beaumont elementary school, and Pacific Junction elementary school) between February 2001 and April 2002. Tables 1 and 2 show a list of reasons parents (of headache and control children who were recruited from the Pediatrics clinic) gave for not participating in this study. All headache children were recruited from the Pediatrics clinic. The control group consisted of children without current headache problems or a history of pain problems and were recruited from the same Pediatrics clinic as the headache children or from one of the following elementary schools: Beaverlodge elementary school, Beaumont elementary school, and Pacific Junction elementary school. Study letters with participation slips (see Appendices A and B) were distributed to parents who had a child attending one of the three Assiniboine South elementary schools.

Of the one-hundred study letters that were distributed at Beaverlodge elementary school, 23 letters were returned to the investigator (4 parents indicated they would be interested in participating in the study and 19 parents indicated they were not interested in participating in the study). Of the four parents who indicated on the permission slip that they would be interested in participating in the study, when contacted by the investigator, two children were too young to participate and one parent could not be contacted. A total of one child/parent dyad participated in the study and was included in the control group.

From the two-hundred and forty letters that were distributed to children at Beaumont elementary school, 26 letters were returned to the investigator (7 parents

Table 1

List of Reasons Parents of Children With Headache who were Referred from Pediatrics
Clinic gave for not participating in this Study

<u>Reason given for not participating</u>	<u>Frequency</u>	<u>%</u>
No reason	10	37
Too busy	2	7
Could not contact parent	4	15
Headache not a problem anymore	5	19
Could not speak English	2	7
Live too far from clinic	1	4
Medical impairment	1	4
Too young	2	7

Table 2

List of Reasons Parents of Control Children who were Referred from Pediatrics Clinic gave for not participating in this Study

<u>Reason given for not participating</u>	<u>Frequency</u>	<u>%</u>
No reason	14	52
Too busy	3	11
Could not contact parent	5	18
Too young	3	11
Sibling referred to study	2	7

indicated they would be interested in participating in the study and 19 parents indicated they were not interested in participating in the study). Of the seven parents who indicated on the permission slip that they would be interested in participating in the study, one parent indicated they were too busy to participate, when contacted by the investigator. A total of six child/parent dyads participated in the study and included in the control group.

From the two-hundred forty letters that were distributed to children attending Pacific Junction elementary school, eighty-nine letters were returned to the investigator (13 parents indicated they would be interested in participating in the study and 76 parents indicated they were not interested in participating in the study). Of the thirteen parents who indicated on the permission slip that they would be interested in participating in the study, upon contact by the investigator, two parents indicated they were too busy to participate, one parent could not be contacted, and one parent did not leave a contact number. A total of 9 child/parent dyads participated in the study and were included in the control group.

From the 73 parents and 76 children who participated in the study, one child and parent dyad were excluded from the study because they did not satisfy the study requirements (child was diagnosed with recurrent abdominal pain and did not have a history of headache). Two other parent/child dyads (one headache child/parent dyad and one control child/parent dyad) were excluded from the study due to the large number of unanswered questions on the child version of the questionnaire. Three children without headache, who had a sibling with headache referred to the study, participated in the study. These three headache-free children were not included in the data analysis in order to

control for the possibility of introducing familial confounds into the study. Finally, a child and mother were excluded from the study due to the extreme scores on the child questionnaire. Statistical analyses suggested that this case was a “data outlier” and as a result was excluded from further data analyses.

The final sample included 35 children with headache (migraine and tension type headache) (19 girls; 16 boys) and one of their parents (32 biological mothers; 2 biological fathers; 1 foster mother) and 34 control children (14 girls; 20 boys) and one of their parents (32 biological mothers; 1 biological father; 1 grandmother). The majority of children with headache were referred to the study by a child neurologist from the Pediatrics Unit and the Manitoba Clinic ($n = 32$), and a few children were referred to the study by one of seven other pediatricians at the Clinic ($n = 3$). The headache group included migraine and tension type headaches since these diagnostic categories of headaches have been reported as the most common in children having headache complaints (McGrath, 1990). The control children who were recruited from the Pediatrics clinic were being seen by the pediatrician for a medical check-up. Participation was strictly voluntary. The criteria for inclusion in the study included: (a) children between the ages of 9 and 13 years old with headache, or children receiving a medical check up, or attending a Winnipeg public elementary school, without a current or chronic headache problem, (b) participation of the mother and/or father of the child with headache as well as the control children, and (c) both the parents and children in this study have English as their first language.

Of the total sample, the child subjects ranged in age from 8.5 to 14 years

($M = 10.56$, $SD = 1.39$). Parent subjects ranged in age from 30 to 60 years ($M = 41.76$, $SD = 5.27$). The majority of the parents/guardians were married ($n = 53$), some were living common-law ($n = 6$) or were divorced ($n = 6$), and the remaining parents were either separated ($n = 1$), never married ($n = 2$), or widowed ($n = 1$).

Materials

The data collection for families with a child with headache consisted of one parent completing six questionnaires and their child completing seven questionnaires. The parents of the pain-free children completed five questionnaires and their children completed seven questionnaires. The child (headache and control) completed the following measures: Wide Range Achievement Test (WRAT 3), Pain Coping Questionnaire (PCQ), a modified version of the Waldron/Varni Pediatric Pain Coping Inventory (PPCI), Functional Disability Inventory (FDI), Children's Depression Inventory (CDI), State-Trait Anxiety Inventory for Children-Trait Scale (STAIC-T), and the Piers-Harris Children's Self-Concept Scale (PHSCS). Each child also answered specific questions related to their worst pain experienced in the past week and the severity of that pain. The headache children answered an additional question related to the last time they experienced headache. The parent questionnaire included a demographic and health measure, the Coping Strategies Questionnaire (CSQ), Beck Depression Inventory (BDI), the Family Illness Questionnaire (FIQ), Pain Coping Questionnaire (PCQ), and the Functional Disability Inventory (FDI).

The Wide Range Achievement Test (WRAT 3) is designed to measure "the codes which are needed to learn the basic skills of reading, spelling, and arithmetic" for

individuals between the ages of 5 and 75 years of age (Wilkinson, 1993; p. 10). The present study used only the Reading subtest in order to establish the reading level of each child. A grade three reading level is required for all child-rated measures. Test-retest reliability was reported to range from .91 to .98 for the nine subtests including the Blue and Tan forms for reading, spelling, and arithmetic tests and the combined reading, spelling, and arithmetic tests (Wilkinson). The construct validity of the instrument is demonstrated by the item separation statistics. This statistic defines how well the items measure the construct being assessed. The item separation indices of 1.00 were reported for each of the subtests (Wilkinson). In addition, support for construct validity was found in the intercorrelations of the WRAT 3 combined scores which ranged from .58 and .82 for the Spelling and Arithmetic subtests, .81 to .91 for the Reading and Spelling subtests, and .54 and .78 for Reading and Arithmetic subtests (Wilkinson) (see Appendix C).

Children with headache completed three demographic questions pertaining to their worst pain experience in the past week, the severity of their worst pain in the past week, and how long ago they experienced an episode of headache (see Appendix D). The control children completed two questions pertaining to their worst pain in the past week and the severity of that pain in the past week (see Appendix E).

The Pain Coping Questionnaire (PCQ) is a 39-item questionnaire developed to measure coping with pain in children and adolescents (Reid et al., 1998). Items are rated on a 5-point Likert scale, ranging from 1 (never) to 5 (very often) in response to the statement, "When I am hurt or in pain for a few hours or days I..." (Reid et al.). The instrument is comprised of eight subscales including information seeking, seeking social

support, behavioral distraction, positive self-statements, cognitive distraction, externalizing, internalizing/catastrophizing, and problem solving (Reid et al.). The eight scales load on three higher-order factors (approach, problem-focused avoidance, and emotion-focused avoidance) (Reid et al.). Items pertaining to how effectively the respondent felt they had managed past pains will be rated on a 5-point scale from 1 (strongly disagree) to 5 (strongly agree). Three additional questions asked the respondent to rate the frequency they have felt that they could do something to change their pain and feelings (Reid et al.). These items were rated on a 5-point scale from 1 (never) to 5 (very often). Lastly, respondents were asked to rate their emotional reactions to pain on a 4-point scale from 0 (not at all) to 3 (really). Reid, et al. reported that the eight subscales of the PCQ have high internal consistency reliabilities (Chronbach's alpha) ranging from 0.79 to 0.89. The children in the headache group completed the PCQ with reference to their experiences with headache and the children in the control group completed the questionnaire with reference to their worst pain experienced in the past week. The parent(s) completed a modified version of the PCQ with reference to their child (see Appendix F).

The Waldron/Varni Pediatric Pain Coping Inventory (PPCI) is a patient- and parent- self report instrument designed to assess children's and adolescent's pain coping strategies (Varni et al., 1996). The children in this study completed a modified version of the inventory including four open-ended questions specific to the things that they do and think about when in pain as well as seven questions that assess cognitive self-instructive coping strategies. The children rated the frequency he/she uses each coping strategy from

the cognitive self-instruction subscale on a 3-point Likert scale ranging from 0 (never) to 2 (often). Cognitive self-instruction refers to the cognitive factors that children use to manage pain.

Varni et al. found that the internal consistency reliability (Cronbach's alpha) for the overall PPCI scale to be 0.85. Cronbach's alpha for each a priori scale was found to be in the moderate range (from 0.57 to 0.74). Children between the ages of 9 and 12 years completed the child version of the PPCI (cognitive self-instruction subscale) and the adolescents (13 years old) completed the adolescent version of the PPCI (cognitive self-instruction subscale). The child and adolescent versions of the PPCI differ only in the age appropriateness in wording of the items. The children with headache completed the PPCI with reference to their experiences with that specific pain and the controls completed the scale with reference to their worst pain experienced in the past week (see Appendix G for the child version and Appendix H for the adolescent version).

The Functional Disability Inventory (FDI) is comprised of 15 items and is designed as a "global measure of functional disability for use in research regarding the impact of illness on children's physical and psychosocial functioning in everyday social roles (Walker & Greene, 1991, p. 40). Items are rated on a 4 -point scale with responses ranging from 0-5, (no trouble, a little trouble, some trouble, a lot of trouble, and impossible). The child completed the FDI and the parent completed a modified version of the FDI with reference to their child.

Walker and Greene (1991) reported that the child version of the FDI is internally consistent (Chronbach's alpha coefficient = .90) and test-reliability over a 3-month

duration was reported to be .85. In addition, Walker and Greene found the modified parent report to be highly internally consistent (Chronbach's alpha coefficient = .94). The construct validity of the FDI has been shown to be adequate as the scale significantly correlates with other measures of child health. Specifically, the scale was found to significantly correlate with measures of somatic complaints and the occurrence of common physical symptoms (child report: $r = .71$ and $.58$) and (parent report: $r = .32$ and $.49$) (Walker & Greene). Concurrent validity was found to be adequate; a significant correlation was found between the FDI and a measure of school absence (child report: $r = .52$) and (parent report: $r = .53$) (Walker and Greene) (see Appendix I).

The Children's Depression Inventory (CDI) is a 21-item self report designed to measure the affective, cognitive, and behavioral symptoms of depression in children and adolescents between the ages of 8 and 17 years (Crowley & Emerson, 1996). The inventory is comprised of five subscales including negative mood, interpersonal problems, negative self-esteem, ineffectiveness, and anhedonia (Crowley & Emerson). Items of the CDI measure the severity of symptomatology and responses are rated on a 3-point scale ranging from 0 (symptom absence) to 2 (highest symptom severity). The total scores range from 0 to 54 (Kavan, 1990) and scores between 9 and 15 represent mild depression and scores greater than 15 represent moderate depression (Kovacs, 1992).

Saylor, Finch, Spirito, and Bennett (1984) reported that the CDI has good internal consistency (Chronbach's coefficient alphas = .80 to .94). The test-retest reliability for a one-week period was reported to be very good ($r = .87$) (Saylor et al.) (see Appendix J).

The State-Trait Anxiety Inventory for Children-Trait Scale (STAIC-T) is

comprised of 20-items designed to measure the general level of anxiety in children (Crowley & Emerson, 1996). Items are rated on a 3-point scale ranging from 1 (hardly ever) to 3 (often). Spielberger (1973) reported the test-retest reliability to range from .65 to .71. The STAIC-T has adequate internal consistency (range of Chronbach's alpha coefficient = .78 to .81) and concurrent validity has been shown through the significant correlation between the STAIC-T and the Revised Children's Manifest Anxiety Scale (Spielberger) (see Appendix K).

The Piers-Harris Children's Self-Concept Scale (PHCSCS) is an 80-item questionnaire designed to measure the self-esteem of children. The scale is comprised of 6 factors including: behavior, intellectual and school status, physical appearance and attributes, anxiety, popularity, and happiness and satisfaction. The behavior factor evaluates the child's recognition of his or her negative behaviors; intellectual and school status reflect the child's perception of his or her abilities regarding school related activities, contentment with school, and future prospects; physical appearance and attributes refer to the child's thoughts pertaining to his or her physical characteristics and ability to communicate ideas; anxiety refers to emotional disturbance; popularity pertains to the child's appraisal of his or her popularity; and happiness and satisfaction refer to the child's perception of contentment and satisfaction with life (Mogilevsky, 1999). Items are responded in a yes-no format.

Test-retest reliabilities have been reported to be .96 over three to four weeks and .42 over an eight month period (Piers, 1984). The PHCSCS was found to correlate with other self-concept measures with correlations ranging from .32 to .85 (Piers). Cronbach's

alpha coefficient was reported to range from .73 to .90 (Piers) (see Appendix L).

The following questionnaires were completed by the parent(s). The demographic and health questionnaire contained questions about the child's age, sex, past illness experiences, number of siblings, and birth order. In addition, parents were asked to report on illness history, marital status, living arrangements, employment background, and pain conditions in other family members. Examples of the questions contained in the demographic survey are as follows: "In the past 2 weeks, how many times has your child experienced headache pain?," "Have you ever been prescribed medication to relieve pain?," "Has your child ever taken prescription medication to relieve pain?," and "Has pain interfered with your child's schoolwork?" (see Appendix M).

The Coping Strategies Questionnaire (CSQ) is a designed to measure coping strategies for adults with pain. The scale consists of 48 items and assesses six cognitive and two behavioral coping strategies (Rosenstiel & Keefe, 1983). Each item is rated on a 7-point Likert type scale to indicate the frequency of using each strategy. The CSQ is comprised of eight subscales including: diverting attention (DA), reinterpretation of pain sensations (RP), ignoring pain sensations (IG), coping self-statements (CS), praying and hoping (PH), catastrophizing (CA), increasing activity level (IA), and increasing pain behaviors (PB) (Tuttle, Shutty, & DeGood, 1991). Diverting attention is defined as thoughts that serve to direct attention away from the pain. Reinterpreting pain sensations refers to using imagination to substitute the experience of pain with something else. Ignoring pain sensations is defined as refuting that the pain hurts or negatively impacting on daily activities. Coping self-statements pertains to telling oneself that they can

manage the pain. Praying or hoping refers to the use of prayers and hope that the pain will alleviate. Catastrophizing is defined as ruminating on the negative aspects of the pain and engaging in negative self-statements and negative thoughts. Increasing activity level refers to distracting oneself from the pain through the use of behavioral acts. Increasing pain behavior pertains to engaging in behaviors directed at alleviating the pain. The three higher order factors include cognitive coping/suppression, helplessness, and diverting attention/ praying.

The CSQ also measures pain controllability and ability to decrease pain. Pain controllability is rated on a Likert type scale ranging from 0 (no control) to 6 (complete control) and ability to decrease pain is rated on a Likert type scale ranging from 0 (can't decrease pain at all) to 6 (can decrease it completely) (Gil, Abrams, Phillips, & Keefe, 1989). The parent(s) completed the scale with reference to their worst pain experienced in the past week.

Rosenstiel and Keefe (1983) reported the CSQ has good reliability (alpha coefficient ranging from .71 to .85), with the exception of the increasing pain behavior subscale. Due to the low reliability of this subscale, it will not be considered in the analyses. Tuttle et al. (1991) reported the CSQ has good reliability ($r = .80$ to $.84$) for the Catastrophizing, Praying and Hoping, Reinterpreting Pain Sensations, and Diverting Attention subscales. A combined factor loading of Ignoring Pain Sensations and Coping Self -Statements was also found to have high reliability ($r = .87$) (see Appendix N).

The Beck Depression Inventory (BDI) is a 21-item self-report questionnaire designed to measure cognitive depression in adolescents and adults (Beck, Ward,

Mendelson, Mock, & Erbaugh, 1961). Responses are recorded on a Likert-type scale ranging from 0 (no problem) to 3 (extreme problem). Hatzenbuehler, Parpal, and Matthews (1983) reported that test-retest reliability was $r = 0.81$. Tanaka-Matsumi and Kameoka (1986) found that convergent validity for the BDI was $r = 0.68$. Standard BDI screening suggests using a cut-off scores of 13 to categorize subjects as depressed and 21 for clinical diagnoses of depression (Hatzenbuehler et al., 1983) (see Appendix O).

The Family Illness Questionnaire (FIQ) consists of a series of questions directed at family history of abdominal pain and health problems (Walker, Garber, & Greene, 1993). The questionnaire was modified for those families who have a child with headache. The parent was asked to provide information on other family members who have had headache problems, the relationship of the individual to the child, whether the pain was current or not, and whether the person is living with the family. The parent was also asked to describe the health problem(s) of other family members who have serious health concerns or disability. The parents of children without headache did not complete this scale.

The following scores were calculated for the headache group in order to derive a measure of family pain history: (a) the number of first-degree relatives currently experiencing headache, (b) the number of first-degree relatives who have ever experienced headache problems, and (c) the number of relatives living in the home with the child who have experienced serious health problems during the current year (Mogilevsky, 1999) (see Appendix P).

The parent(s) also completed modified versions of the Pain Coping Questionnaire

(PCQ) (see Appendix Q) and Functional Disability Inventory (FDI) (see Appendix R) with reference to their child's coping and level of disability.

Procedure

Participant Referral

Seven pediatricians referred children with headache (migraine and tension type), and children receiving a medical check up without current or chronic pain from a Pediatrics clinic in Winnipeg, Manitoba to the investigator of the study. For the headache group, seven pediatricians (including a child neurologist) referred interested parents to the investigator of the study and provided them with a copy of the coping strategy study letter (see Appendix S). The study letter described the study in greater detail and a contact number of the investigator of the study was provided on the letter. Once informed about the study, interested parents contacted the investigator of the study by telephone or parents left their name and telephone number with the pediatricians' receptionist to be contacted by the study investigator.

Pediatricians from the Pediatrics Clinic recruited the control group (children without headache or a history of pain problems) by referring children who were being seen for a medical check-up. The pediatrician's receptionists distributed the study letters to parents of children who were receiving a medical check-up (see Appendix T). The study letter was similar to the letters distributed to parents of children with headache. The receptionists also gathered names and telephone numbers of parents interested in participating in the study. The investigator gathered referrals on a weekly basis by contacting the pediatrician's receptionists. The screening for the control group included

children without a headache history or a history of chronic pain. Several postings about the study were advertised at the Pediatrics clinic to increase parent awareness of the study. The posting briefly explained the nature of the study and a contact number was listed. Control children were also recruited from three elementary schools from the Assiniboine South School Division No. 3. Upon receiving consent from the Assiniboine South School Division No. 3 superintendent's office, the investigator of the study contacted various school principals in the school division to explain the nature of the study. After obtaining consent by the school principals, study letters and permission slips were distributed to parents of children between the ages of 9 and 13 years.

On the basis of convenience and preference, all parent(s) and children completed the questionnaire package at the Manitoba Clinic, the Psychological Service Center located at the University of Manitoba, at a private clinical practice office, or at their child's elementary school (for those children recruited from the Assiniboine School Division). When the parent and child arrived for the appointment, the investigator reviewed the coping strategy study letter and consent form with them (see Appendix U). The study letter informed the parent that participation in this study would be helpful in providing greater understanding of the relationships between styles of childhood pain coping and positive adjustment and this information may have direct relevance to their child. In addition, the letter stated that participation would be completely voluntary and that the participants may withdraw from the study at any time without consequences. The participants were also informed that all of the information gathered would remain strictly confidential and that they have the right to refrain from answering any questions they

may feel uncomfortable completing. If the parent signed the consent form, thereby allowing themselves and their child to participate in the study, the child and parent were led into separate rooms (or across the same room) to complete the questionnaires. This measure was taken in order to control for potential confounds the parent may introduce in the child's responses. The experimenter asked both the child and parent to answer the questions as truthfully as possible, in the order as presented, and not to change answers to previous questions after the questionnaire was completed. The various scales comprising the questionnaire were counterbalanced as a control measure.

The questionnaires were administered by the investigator of the study or a trained research assistant. The investigator of the study reviewed issues of confidentiality with the research assistant and the assistant completed a form confirming her understanding and maintenance of confidentiality (see Appendix V). The role of the research assistant was to meet with interested participants (parent and child) and to distribute the questionnaires. The research assistant assisted the participants by clarifying any questions they did not understand. The research assistant was given a telephone number of the investigator of the study as well as the supervisor of the study (Dr. Michael Thomas) if any immediate concerns arose.

A grade three reading level is required for the child-rated questionnaires, therefore, each child first completed the WRAT 3 as a measure of reading comprehension. The WRAT 3 was scored immediately following completion and if a child performed below a grade three reading level, the questionnaires were administered orally. Two children in the study received assistance in reading the questionnaire. The

children were not informed of the purpose of this measure.

If possible, the child-rated questionnaires were completed following a recent pain episode for those children with headache. A recent episode was defined as occurring within the past month. For the child-rated questionnaires, the experimenter was available during the study to answer any questions pertaining to the scales. The duration of the child's questionnaire package was approximately 60 minutes to complete. Every child was offered a break approximately half way through the session and informed that they could take a break at any point during the study. During the break every child was offered a snack which consisted of a juice box and a choice of a fruit roll-up or a rice krispie bar. After the child completed the questionnaire, he or she was given an opportunity to place their hand in a "grab bag" to receive a puzzle book or toy for their time and cooperation in the study. The investigator was also available to answer any questions of the parent(s) during the study. The duration of the parent questionnaire was approximately 60 minutes to complete.

A debriefing sheet describing the purpose of the study was given to the parent following the completion of both the child and parent questionnaires (see Appendix W). In addition, recommendations were made on the debriefing sheet to contact Dr. Michael Thomas if the study caused a participant any problems or concerns. The experimenter will mail every parent a copy of the results of the study in August, 2002. The investigator will also provide a verbal summary of the child and parent self-reported questionnaires to interested parents as a token of appreciation for participating in the study.

Results

Descriptive Statistics

All analyses were done using SPSS 9.0 for Windows. Tables 3 and 4 provide descriptive information about the child subjects (headache and control group) on measures of the Pain Coping Questionnaire (PCQ) and on psychological measures including the Children's Depression Inventory (CDI), State Trait Anxiety Inventory for Children-Trait Scale (STAIC-T), Functional Disability Inventory (FDI), Piers-Harris Children's Self-Concept Scale (PHCSCS), pain severity for the worst pain experienced in the past week, perceived pain controllability, and perceived coping effectiveness. On the demographic measure, both the headache and control children self-reported the worst pain they experienced during the past week and the severity of that worst pain. The children from both groups selected among nine categories of pain locations including headache, back pain, stomach pain, toothache, earache, muscle pain, neck pain, joint pain, and "other." Among the headache children the most frequently reported worst pain experienced in the past week was headache, followed by "other types of pain" including shoulder, knee, and ankle. The remaining types of pain that were reported included muscle pain, joint pain, stomach ache, toothache, neck pain, and back pain. For the control group, most children reported "other types of pain" including knee, cramps, throat, eye, ankle, loss of skin, and muscle pain as the worst pain experienced in the past week. The remaining types of pain reported included headache, stomach ache, toothache, earache, back pain, and neck pain (see Table 5). The mean pain severity for the worst pain experienced in the past week was $\bar{M} = 5.43$ ($SD = 2.48$) for children with headache

Table 3

Descriptive Statistics on Psychological Variables for Children With Headache

Variable	n	Range	Mean	SD	Skew	Kurtosis
PCQ						
Approach	35	1.42-4.68	2.91	.81	.16	-.66
Problem-Focused Avoidance	35	1.80-5.00	3.12	.91	.60	-.53
Emotion-Focused Avoidance	35	1.00-4.50	1.87	.82	1.34	1.91
Behavior Distraction	35	1.40-5.00	3.11	1.03	.34	-.88
Cognitive Distraction	35	1.00-5.00	3.15	.96	.07	-.19
Positive-Self Statements	35	1.00-5.00	3.18	1.18	-.15	-.77
Internalizing/ Catastrophizing	35	1.00-4.80	2.19	1.00	.89	.31
CDI	35	0-22	6.31	6.47	1.30	.70
STAIC-T	35	20-52	34.60	8.49	.26	-.63
FDI	34	0-52	12.82	13.08	1.54	2.22
PHCSCS	35	37-77	62.80	11.82	-.99	-.01
Pain Severity for Worst Pain in Past Week	35	0-10	5.43	2.48	-.33	.07
Perceived Pain Controllability	35	1.00-5.00	2.94	1.08	.06	-.23
Perceived Coping Effectiveness	35	12-35	22.34	5.84	.49	-.27

Note. PCQ = Pain Coping Questionnaire; CDI = Children's Depression Inventory; STAIC-T = State Trait Anxiety Inventory for Children- Trait Scale; FDI = Functional Disability Inventory; PHCSCS = Piers-Harris Children's Self-Concept Scale

Table 4

Descriptive Statistics on Psychological Variables for Control Children

Variable	n	Range	Mean	SD	Skew	Kurtosis
PCQ						
Approach	34	1.47-4.11	2.91	.76	-.11	-.85
Problem-Focused Avoidance	34	1.60-4.90	3.39	.82	.09	-.69
Emotion-Focused Avoidance	34	1.00-2.80	1.67	.52	.75	-.40
Behavior Distraction	34	1.80-5.00	3.37	.95	-.13	-1.17
Cognitive Distraction	34	1.40-5.00	3.41	.95	-.02	-.94
Positive-Self Statements	34	1.40-5.00	3.29	1.17	-.20	-1.44
Internalizing/Catastrophizing	34	1.00-4.20	1.99	.90	1.14	.30
CDI	34	0-28	6.38	6.01	1.74	4.16
STAIC-T	34	21-47	33.26	7.43	.10	-.95
FDI	34	0-19	5.53	5.18	1.28	.82
PHCSCS	34	34-78	63.85	11.87	-1.12	.53
Pain Severity for Worst Pain in Past Week	34	0-9	5.44	2.03	-.42	.24
Perceived Pain Controllability	34	1-5	3.14	.94	-.02	-.14
Perceived Coping Effectiveness	34	14-35	25.76	6.04	-.29	-.75

Note. PCQ = Pain Coping Questionnaire; CDI = Children's Depression Inventory; STAIC-T = State Trait Anxiety Inventory for Children- Trait Scale; FDI = Functional Disability Inventory; PHCSCS = Piers-Harris Children's Self-Concept Scale

Table 5

Descriptive Statistics on the Frequency of Self-Reported Worst Pain Experienced in the Past Week Between Children With and Without Headache

Pain Location	Headache Group	Control Group
Headache	19	6
Back	1	1
Stomach	1	6
Tooth	1	2
Ear	0	2
Muscle	3	8
Neck	1	1
Joint	3	0
Other (shoulder, knee, ankle, cramps, throat, eye)	6	8
	N = 35	N = 34

(range: 1-10) and $\bar{M} = 5.44$ ($SD = 2.03$) for the control children (range: 1-10).

For parents of headache children, the most frequent reported worst pain experienced in the past week was headache, followed by "other types of pain" locations including sunburn, arm, stomach, or no pain. Other types of pain included joint, back, neck, muscle, and stomach. For parents of control children, the most frequent reported worst pain in the past week was headache, followed by "other types of pain" locations including shoulder, throat, or no pain. Other types of reported worst pain included back, neck, joint, muscle, ear, and stomach (see Table 6). The mean pain severity for the worst pain experienced in the past week for parents of headache children was $\bar{M} = 5.80$ ($SD = 2.86$) and for parents of control children $\bar{M} = 4.71$ ($SD = 2.66$).

Fifteen parents with a child with headache reported experiencing pain today and twenty parents reported they did not currently experience pain. The mean pain severity for parents who reported experiencing current pain was $\bar{M} = 7.34$ ($SD = 3.92$). Nine parents with a child without headache (control) reported experiencing current pain and twenty-five parents reported they did not currently experience pain. The mean pain severity for parents who reported experiencing current pain was $\bar{M} = 8.59$ ($SD = 3.66$). Tables 7-10 provides descriptive statistics on the employment status, marital status, and coping measures (as measured by the CSQ) of parents with a headache child and parents of control children.

Table 6

Descriptive Statistics on the Frequency of Self-Reported Worst Pain Experienced in the Past Week Between Parents of Children With and Without Headache

Pain Location	Parents of Children with Headache	Parents of Children without Headache
Headache	18	13
Back	3	3
Stomach	1	2
Tooth	0	0
Ear	0	1
Muscle	1	1
Neck	2	3
Joint	4	3
Other (sunburn, arm, throat, shoulder, internal, no pain)	6	8
	N = 35	N = 34

Table 7

Employment Status and Marital Status of Mothers and Fathers of Children with Headache

Employment Status	Mothers		Fathers	
	N	%	N	%
Employed Full-Time	15	42.9	25	80.6
Employed Part-Time	6	17.1	0	0
Fulltime Homemaker	10	28.6	0	0
Unemployed	2	5.7	3	9.7
Other	2	5.7	3	9.7
<u>Marital Status</u>				
Married	25	71.4	25	78.1
Divorced	4	11.4	2	6.3
Separated	1	2.9	1	3.1
Common-law	3	8.6	3	9.4
Never Married	2	5.7	0	0
Widowed	0	0	1	3.1

Table 8

Employment Status and Marital Status of Mothers and Fathers of Children without Headache

Employment Status	Mothers		Fathers	
	N	%	N	%
Employed Full-Time	9	26.5	26	76.5
Employed Part-Time	6	47.1	1	2.9
Fulltime Homemaker	4	11.8	1	2.9
Unemployed	0	0	0	0
School Full-Time	2	5.9	0	0
Other	3	8.8	6	17.6
<u>Marital Status</u>				
Married	28	82.4	30	88.2
Divorced	2	5.9	0	0
Separated	0	0	0	0
Common-law	3	8.8	2	5.9
Never Married	0	0	1	2.9
Other	1	2.9	1	2.9

Table 9

Descriptive Statistics on Psychological Variables for Parents of Children With Headache

Variable	n	Range	Mean	SD	Skew	Kurtosis
CSQ						
Distracting Attention	34	0-32	13.12	8.08	.73	.22
Coping Self-Statements	34	4-36	22.50	7.21	-.38	.70
Increasing Behavior Activity	34	0-24	12.47	7.26	-.19	-1.09
Catastrophizing	34	0-21	9.85	7.17	.27	-.95
Ignoring Pain Sensations	34	0-33	16.06	7.53	.01	.01

Table 10

Descriptive Statistics on Psychological Variables for Parents of Control Children

Variable	n	Range	Mean	SD	Skew	Kurtosis
CSQ						
Distracting Attention	34	0-25	9.97	8.08	.48	-1.16
Coping Self-Statements	34	3-38	22.56	7.88	-.50	-.04
Increasing Behavior Activity	34	0-30	14.85	7.75	-.32	-.22
Catastrophizing	34	0-21	5.18	5.93	1.15	.39
Ignoring Pain Sensations	34	0-35	17.26	8.55	-.14	-.09

Hypothesis 1.

The relationships between approach coping, problem-focused avoidance coping, emotion-focused avoidance coping, pain severity, depression, anxiety, and functional disability scores were examined to determine whether approach and problem-focused avoidance coping was associated with positive adjustment (e.g., low pain severity, depression, anxiety, and functional disability scores) and emotion-focused avoidance coping related to negative adjustment (e.g., high pain severity, depression, anxiety, and functional disability scores) for both groups (headache and control groups). These relationships were analyzed using Pearson correlations. For the headache group, it was found that approach coping was significantly positively related to pain severity for the worst pain in the past week ($r = .378$; $p < .05$). There were no significant correlations between approach coping and depression, anxiety, and functional disability scores. There was a significant negative correlation found between problem-focused avoidance coping and functional disability scores ($r = -.366$ $p < .05$). There were no significant correlations between problem-focused coping and depression, anxiety, and pain severity scores. Emotion-focused avoidance coping was significantly positively related to anxiety ($r = .667$; $p < .001$), and depression scores ($r = .614$; $p < .001$). There were no significant relationships between emotion-focused avoidance coping, functional disability, and pain severity scores (see Table 11).

For the control group, there were no significant correlations found between approach coping, pain severity, depression, anxiety, and functional disability scores. There were also no significant associations found between problem-focused avoidance

Table 11

Correlations Between Approach Coping, Problem-Focused Avoidance Coping, Emotion-Focused Avoidance Coping, and CDI, STAIC-T, FDI, and Pain Severity for Children With Headache

Scale	CDI	STAIC-T	FDI	Pain Severity
Approach	.09	.14	.25	.38*
Problem-Focused Avoidance	-.27	-.23	-.37*	-.07
Emotion-Focused Avoidance	.61****	.67****	.18	.17

Note. CDI = Children's Depression Inventory; STAIC-T = State-Trait Anxiety Inventory for Children Trait Scale; FDI = Functional Disability Inventory

* $p < .05$; ** $p < .01$, *** $p < .001$; **** $p < .0001$

coping and pain severity, depression, anxiety, and functional disability scores. Emotion-focused avoidance coping was significantly positively correlated to anxiety ($r = .483$; $p < .01$). There were no significant correlations between emotion-focused coping and depression, functional disability, and pain severity scores (see Table 12).

The relationships between approach, problem-focused avoidance, and emotion-focused avoidance coping and perceived pain controllability scores were examined to determine whether greater pain controllability would be related to higher levels of approach and problem-focused avoidance coping and related to lower levels of emotion-focused avoidance coping for each group (headache and control). For the headache group, approach coping was found to be significantly positively related to greater levels of perceived pain controllability ($r = .616$; $p < .0001$). There were no significant relationships between problem-focused avoidance coping and emotion-focus avoidance coping and perceived pain controllability scores. For the control group, there were significant positive correlations found between both approach coping ($r = .553$; $p < .001$), and problem-focused avoidance coping ($r = .432$; $p < .01$) and perceived pain controllability scores. In addition, there was a significant negative correlation between emotion-focused avoidance coping and perceived pain controllability scores ($r = -.502$; $p < .01$) (see Table 13).

All relationships between the parent-and child-rated coping scales were examined using Pearson correlational analyses.

Hypothesis 2.

Correlations were performed between the behavior distraction subscale of the

Table 12

Correlations Between Approach Coping, Problem-Focused Avoidance Coping, Emotion-Focused Avoidance Coping, and CDI, STAIC-T, FDI, and Pain Severity for Control Children

Scale	CDI	STAIC-T	FDI	Pain Severity
Approach	-.22	-.08	-.08	-.25
Problem-Focused Avoidance	-.30	-.22	.21	-.17
Emotion-Focused Avoidance	.24	.48**	-.07	.31

Note. CDI = Children's Depression Inventory; STAIC-T = State-Trait Anxiety Inventory for Children Trait Scale; FDI = Functional Disability Inventory

* $p < .05$; ** $p < .01$, *** $p < .001$; **** $p < .0001$

Table 13

Correlations Between Approach Coping, Problem-Focused Avoidance Coping, Emotion-Focused Avoidance Coping, and Perceived Pain Controllability for Children With and Without Headache

Scale	Perceived Pain Controllability (as measured by the PCQ)	
	Headache Group	Non-Headache Group
Approach	.62**	.56**
Problem-Focused Avoidance	-.14	.44**
Emotion-Focused Avoidance	-.09	-.47**

Note. PCQ = Pain Coping Questionnaire

* $p < .05$; ** $p < .01$, *** $p < .001$; **** $p < .0001$

PCQ (child rated) and the behavioral activity subscale of the CSQ (parent rated) to determine whether these variables would be significantly positively related to each other. It was found that there were no significant correlations between the child rated behavior distraction coping and parent rated behavioral activity coping subscales for both groups (headache: $r = .32$; $p = .06$ and control: $r = .01$; $p = .96$).

Hypothesis 3.

The relationships between the following parent-rated subscales of the Coping Strategies Questionnaire (CSQ): distracting attention, coping self-statements, and catastrophizing, and the following child rated-subscales of the Pain Coping Questionnaire (PCQ): cognitive distraction, positive self-statements, and internalizing/catastrophizing were analyzed. It was predicted that parent and child reports for cognitive distraction, positive self-statements, and catastrophizing, as measured by the CSQ and the PCQ, would not be significantly correlated for each group (headache and control). It was found that, for both the headache and control group, there were no significant correlations between the subscales of the PCQ and the CSQ (see Tables 14 and 15).

Hypothesis 4.

Figure 1 compares parents with and without a chronic pain problem (as measured on the demographic questionnaire) and their headache child on measures of coping (approach, problem-focused avoidance, emotion-focused avoidance). It was expected that children with headache who have a parent with chronic pain would have more similar pain coping strategies in comparison to headache children who do not have a parent with chronic pain. The parent and child coping strategy scores (e.g., CSQ and PCQ) were

Table 14

Correlations Between Parents and Headache Children in Cognitive Coping Strategies

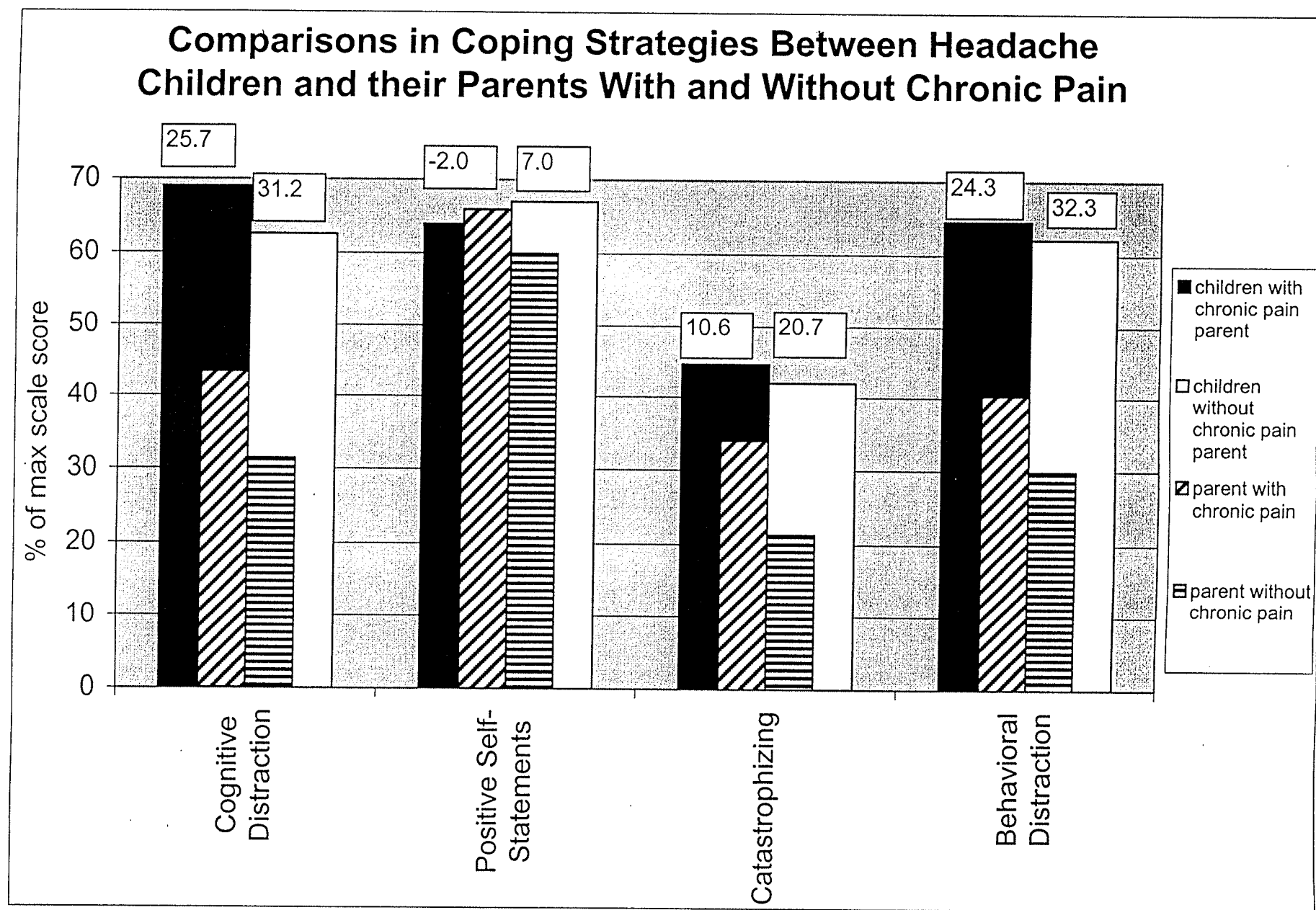
Child Rated	Parent Rated		
	Distracting Attention	Coping Self-Statements	Internalizing/ Catastrophizing
Cognitive Distraction	.15	-.09	-.42
Positive Self-Statements	.21	.00	-.19
Catastrophizing	.28	-.00	.05

Table 15

Correlations Between Parents and Control Children in Cognitive Coping Strategies

Child Rated	Parent Rated		
	Distracting Attention	Coping Self-Statements	Internalizing/ Catastrophizing
Cognitive Distraction	-.02	.01	.03
Positive Self-Statements	-.09	.13	.08
Catastrophizing	.56	.08	-.09

Figure 1



converted to a percentage of the maximum scale score so that the units would be consistent for comparative purposes. The following trends are apparent from figure 1 when comparing the relative coping score differences between headache children and their parent with and without chronic pain. Across all coping variables (e.g., cognitive distraction, positive self-statements, internalizing/catastrophizing, and behavioral distraction), children with a chronic pain parent are more similar in coping scores in comparison to children without a chronic pain parent. That is, the relative differences in coping scores between headache children who have a chronic pain parent is smaller in value in comparison to the relative difference scores between headache children and their parent who does not have chronic pain.

Exploratory Analyses

Exploratory 1.

A series of t-tests were used to examine group mean differences (headache and controls) in approach, problem-focused avoidance, and emotion-focused avoidance coping. There were no significant mean group differences found between the headache and control group in approach, problem-focused avoidance, and emotion-focused avoidance coping.

Exploratory 2.

The scores for coping effectiveness and pain controllability were compared between the groups (headache and controls) using t-tests. There was a significant mean score difference found between the headache ($M = 22.34$; $SD = 5.84$; $n = 35$) and control group ($M = 25.76$; $SD = 6.04$; $n = 35$) in perceived coping effectiveness ($p = .02$;

$t = -2.392$). There were no significant mean group differences found between the headache and control groups in perceived pain controllability scores.

Exploratory 3.

Pearson correlations were used to examine the relationships between perceived pain coping effectiveness, perceived pain controllability, self-esteem, and level of adjustment (e.g., depression, anxiety, functional disability, and pain severity). For the headache group, it was found that perceived coping effectiveness was significantly positively related to perceived coping controllability scores. Self-esteem scores were significantly negatively correlated with anxiety and depression scores. Depression scores were significantly positively correlated with anxiety, functional disability, and pain severity scores (for the worst self-reported pain experienced in the past week). Anxiety scores were significantly positively correlated with pain severity scores (worst pain in past week). There were no significant correlations between functional disability scores and the variables listed above (see Table 16). For the control group, it was found that perceived coping effectiveness was significantly negatively correlated with pain severity scores for the worst pain in the past week and perceived pain controllability scores. Perceived pain coping controllability was significantly negatively correlated with depression and anxiety scores, and significantly positively correlated with self-esteem scores. Self-esteem scores were significantly negatively correlated with anxiety, depression, and pain severity scores (for the worst self-reported pain experienced in the past week). Depression scores were significantly positively related to anxiety scores. Functional disability scores were not significantly correlated with the variables listed

Table 16

Correlations Between the CDI, STAIC-T, FDI, PHCSCS, Pain Severity, Pain Coping Effectiveness, and Pain Coping Controllability for Children With Headache

Scale	1	2	3	4	5	6	7
1. CDI	-	.79****	.45***	-.78****	.47***	-.26	-.05
2. STAIC-T	-	-	.23	-.70****	.38*	-.32	-.15
3. FDI	-	-	-	-.27	.28	-.06	.05
4. PHCSCS	-	-	-	-	-.25	.32	.18
5. Pain Severity	-	-	-	-	-	.21	.22
6. Pain Coping Effectiveness	-	-	-	-	-	-	.42**
7. Pain Coping Controllability	-	-	-	-	-	-	-

Note. CDI = Children's Depression Inventory; STAIC-T = State-Trait Anxiety Inventory for Children Trait Scale; FDI = Functional Disability Inventory; PHCSCS = Piers Harris Children's Self Concept Scale

* $p < .05$, ** $p < .01$; *** $p < .001$; **** $p < .0001$

above (see Table 17).

Exploratory 4.

The relationships between the child-rated coping on the cognitive self-instruction subscale of the Waldron/Varni Pediatric Pain Coping Inventory (PPCI) and the parent-rated coping self-statements and ignoring pain sensation subscales of the Coping Strategies Questionnaire (CSQ) were examined using Pearson correlations. It was found that, for both the headache and control group, there were no significant correlations between cognitive self-instruction, coping self-statements, and ignoring pain sensations coping subscales.

Exploratory 5.

Figure 2 compares coping strategies (e.g., cognitive distraction, positive self-statements, internalizing/catastrophizing, and behavioral distraction) between younger (8.5-10 years) and older aged children (10.5-14 years) with parent coping strategies to determine whether younger children would have more similar coping strategies with their parent in comparison to older aged children and their parent. The parent and child coping strategy scores were converted to a percentage of the maximum scale score so that the units would be consistent for comparative purposes. The following trends are apparent in figure 2 when comparing the relative coping score differences between younger and older children and their parent: younger children are more similar with their parent in coping involving positive self-statements and catastrophizing strategies in comparison to older aged children and their parent. This is shown in figure 2 by the smaller relative scale score difference between younger children and their parent in positive self-statements

Table 17

Correlations Between the CDI, STAIC-T, FDI, PHCSCS, Pain Severity, Pain Coping Effectiveness, and Pain Coping Controllability for the Control Children

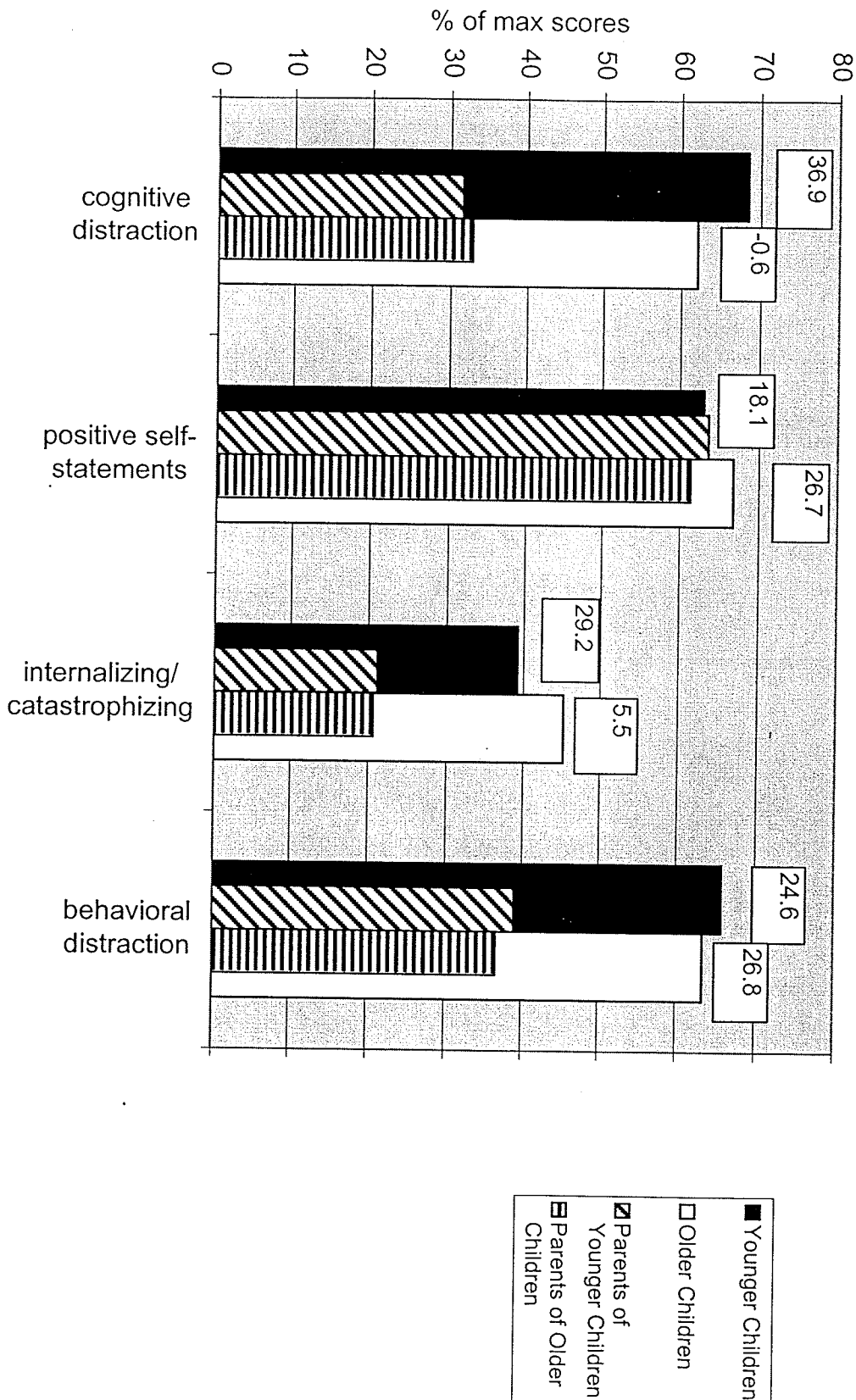
Scale	1	2	3	4	5	6	7
1. CDI	-	.56***	.04	-.65****	.25	-.18	-.49**
2. STAIC-T	-	-	-.10	-.63****	.25	-.28	-.46**
3. FDI	-	-	-	-.01	.29	.03	-.05
4. PHCSCS	-	-	-	-	-.37*	.18	.44**
5. Pain Severity	-	-	-	-	-	-.47**	-.19
6. Pain Coping Effectiveness	-	-	-	-	-	-	.42**
7. Pain Coping Controllability	-	-	-	-	-	-	-

Note. CDI = Children's Depression Inventory; STAIC-T = State-Trait Anxiety Inventory for Children Trait Scale; FDI = Functional Disability Inventory; PHCSCS = Piers Harris Children's Self Concept Scale

* $p < .05$, ** $p < .01$; *** $p < .001$; **** $p < .0001$

Figure 2

Comparisons Between Younger and Older Aged Children and their Parents in Coping Strategies



coping (-0.6) and in internalizing/catastrophizing (18.06) in comparison to the relative scale score differences between older aged children and their parent in positive self-statements coping (5.49) and internalizing/catastrophizing (24.6). Figure 2 also shows that older children are more similar with their parent in using cognitive distraction coping (29.22) in comparison to younger children and their parent (36.9). There does not appear to be a difference between the age groups on behavioral distraction coping.

Exploratory 6.

Stepwise multiple regressions were performed to determine the impact of age and sex, pain group (headache and controls), the three coping factors (as measured by the PCQ: approach, problem-focused avoidance, and emotion-focused avoidance coping), perceived effectiveness in managing pain, and perceived pain controllability on level of adjustment (e.g., depression, anxiety, functional disability, and pain severity scores).

Stepwise multiple regressions were performed with CDI scores, STAIC-T scores, FDI scores, and pain severity scores as dependent variables (criterion variables), and age and sex, pain group, the 3 coping factors (approach, problem-focused avoidance, and emotion-focused avoidance), perceived coping effectiveness, and perceived pain controllability as independent variables (predictor variables). The analysis was performed separately for each dependent measure. The predictor variables were entered into the regression analysis in the following order: age and sex, pain group, approach coping, problem-focused avoidance coping, emotion-focused avoidance coping, perceived controllability (as measured by the PCQ), and perceived coping effectiveness (as measured by the PCQ). It was found that the only significant predictor of CDI scores was

emotion-focused avoidance coping which accounted for 21.5% of the variability in depression scores ($p < .0001$). The remaining independent variables were not significant predictors of depression scores. The only significant predictor of STAI-C scores was emotion-focused avoidance coping which accounted for 35.9% of the variability in anxiety scores ($p < .0001$). The remaining independent variables were not significant predictors of anxiety scores. The only significant predictor of FDI scores was type of pain problem which accounted for 12.2% of the variability of functional disability scores ($p < .01$). The remaining independent variables were not significant predictors of FDI scores. There were no significant predictors of pain severity scores.

Discussion

Overall, the results of this study suggest that coping strategies, specifically, approach, problem-focused avoidance, and emotion-focused avoidance coping (as measured by the PCQ) play a minimal role in explaining adjustment levels (as defined in this study as pain severity, depression, anxiety, and functional disability scores). The correlations found between the coping strategy and adjustment variables were small to moderate and the regression equations explained small to moderate proportions of the variance in adjustment. These findings suggest that a modest proportion of the variation in adjustment can be explained by considering the nature of individual coping responses. Coping strategies may instead have an indirect or mediating role in explaining adjustment levels for children who experience headache as well as for children who experience minor "every day" pains. For example, children's coping strategies to deal with pain may not directly affect psychological outcome but instead may indirectly affect outcomes through

a change in health-related behaviors (e.g., low caffeine consumption, consistent sleep patterns, and stress management behaviors in headache sufferers) which in turn leads to changes in well-being (Aldwin, 1994).

Other variables, besides the coping strategies that were examined in this study, may play a greater role in explaining the relationship between painful experiences and positive outcome. Lazarus and Folkman (1984) suggest that both environmental and individual factors explain individual differences in coping when examining the ways people cope under similar circumstances. Variables including personality, expectations, interpretations of a stressor, cognitive appraisal of the painful event, locus of control, and cognitive-developmental level may serve as important mediating variables that account for greater variability in psychological adjustment scores.

Overall, studies have supported the notion that coping is a process that is influenced by both situational and temporal characteristics rather than conceptualizing coping as a trait (Compas, Worsham, & Ey, 1992). Studies that examine the direct effects of coping strategies on outcome measures support a model of personality-based coping (e.g., trait coping) whereas indirect effects of coping on outcome supports an interaction model involving the relationship between the person and his/her environment (Aldwin & Revenson, 1987). The design of this study allowed for the investigation of the direct effects of coping strategies on psychological well-being. Findings from this study provide support of coping as a process involving the relationships between personal and environmental variables.

Overall, emotion focused avoidance coping was related to increased levels of

depression and anxiety scores. Other studies have reported similar findings (Compas, Worsham, & Ey, 1992; Peterson, 1989; Reid et al 1998; Snow-Turek, Norris, & Tan, 1996). Emotion-focused avoidance coping involves expressing and reflecting on negative emotions (Reid et al., 1998). Therefore, by mulling over negative emotions, a child may be less likely to engage in more effective coping attempts such as distracting attention away from the stressor (Reid et al., 1998) and as a result may experience heightened negative affective reactions (e.g., high levels of anxiety/fear) to the pain. For example, Brophy and Erickson (1990) found that among a group of children undergoing surgery, coping strategies involving negative thinking were related to higher anxiety levels.

An unexpected finding was that for the headache group, greater levels of approach coping were correlated with greater levels of pain severity. The direction of this relationship was counter to the hypothesis, however, there are several possible explanations for this finding. One possibility is that approach coping is a maladaptive coping strategy for headache children to use when managing pain associated with headache. As defined by the Pain Coping Questionnaire, approach coping refers to efforts to manage pain (e.g., directing attention to the pain) and ways to modulate feelings when in pain (Reid et al., 1998). Approach coping includes strategies such as seeking information and social support, problem solving, and positive self talk. The findings of this study suggest that in dealing with headache, children who cope with their pain by searching for greater meaning or information about the pain, or by searching for external modes of help (e.g., parents, peers) would experience higher levels of pain. It may be possible that children with frequent headache pain find other methods to managing their

headaches (e.g., medication) to be more effective at relieving their pain. For example, Holden, Gladstein, Trulsen, and Wall (1994) found that among children with recurrent headache, the most preferred pain coping strategy included taking medication. Other coping strategies that were found to be effective included resting, distraction, seeking parental support, positive self-talk, and problem-solving (Holden et al.).

In addition, a child's cognitive-developmental level may limit his/her abilities to employ more effective ways to manage the pain. The mean age of the children in this study was 10 years, thus classifying them into the concrete operational developmental stage (ranging from approximately 7 – 12 years) according to Piagetian theory. Children at this developmental stage base their reasoning on concrete operations and relationships (direct observations) in terms of problem solving abilities, logic, and cognitive abilities (Mussen et al., 1990; Ross & Ross, 1988). Problem solving skills require an individual to draw from previous experiences, knowledge, and intellectual abilities (Lazarus & Folkman, 1984). Concrete operational children experience difficulties in abstractions, hypothetical reasoning, and generalizations (Mussen et al.). Therefore, children in this study may not have developed the ability to regulate emotional states and to extrapolate from previous pain experiences on effective ways to manage future pains. Studies have found that in dealing with pain, children develop the ability to regulate their emotions (e.g., use emotion-focused coping strategies) later in childhood (Aldwin, 1994; Thompson & Gustafson, 1996). Hanson et al. (1989) reported a significant relationship between age and the use of emotion-focused coping (avoidance and emotional regulation).

An alternative explanation to these findings is that approach coping is an adaptive strategy for headache children to use when dealing with headache pain. It was found that for the headache group, approach coping and perceived coping effectiveness scores were significantly positively correlated ($r = .57$; $p < .0001$). Therefore, it may be possible that by actively attempting to control/manage the pain and to regulate feelings while in pain (approach coping), the more likely a child may feel that they are effective at coping with their pain. This would suggest that approach coping is an adaptive strategy in managing headache.

In this study, problem-focused avoidance coping was found to be significantly negatively related to functional disability scores for children with headache. This may suggest that avoidance strategies (e.g., behavior distraction, cognitive distraction, and positive self-statements) are more effective coping strategies in minimizing the level of physical disruption in the daily activities of children with headache. Some studies have suggested that distraction strategies may facilitate increased activity levels (Johnson & Petrie, 1997). Other studies have found that distraction pain coping strategies in children were related to lower pain severity levels (Fernandez & Turk, 1989; McCaul & Malott, 1984) and thus lower levels of disruption in daily functioning.

The results pertaining to the relationships between coping strategies and perceived coping controllability scores for children in the control group are consistent with other studies (Reid et al., 1998; Folkman & Lazarus, 1980; Forsythe & Compas, 1987; Thompson & Gustafson, 1996). However, for the headache group, it was not found that greater levels of perceived pain controllability would be related to greater levels of

problem-focused avoidance coping. Further, the findings did not confirm the hypothesis that children with headache who used greater levels of emotion-focused avoidance coping would have lower levels of perceived pain controllability. However, it was found that approach coping was significantly positively correlated with perceived pain controllability scores in children with headache. Several studies have not provided support for finding a relationship between perceived control and coping among children (Band, 1990; Compas, Worsham, & Ey, 1992).

These findings may be explained by the possibility that overall, children in the control group experience lower levels of pain in comparison to children with headache, and therefore, the control children may have greater perceptions of control over painful experiences. For example, the children in the control group may be less likely to have a history of experiencing and dealing with frequent painful episodes in comparison to children with headache and as a result, the control children may perceive themselves in greater control of their pain. Further, control children may have fewer experiences in coping ineffectively with their pain or learning that the pain may persist despite their efforts at absolving the pain in comparison to the headache group.

Folkman (1984) suggests that greater levels of perceived controllability over an event does not necessarily relate to lower stress levels or positive adjustment. Further, perceptions of an event as being uncontrollable does not necessarily lead to greater levels in stress or negative adjustment (Folkman). Folkman's findings may offer an explanation for the lack of a relationship found between problem-focused avoidance coping and emotion-focused avoidance coping and pain controllability for children in the headache

group. It may be that a child's cognitive appraisal of the stressor (pain) plays a greater role in determining whether perceived controllability would lead to increased/decreased distress levels (adjustment levels) in comparison to the coping strategies measured by the PCQ. A child's appraisal of the pain shapes the meaning of his/her encounter with a stressor (Folkman) and this variable (cognitive appraisal) may impact on perceptions of pain controllability. Folkman notes that cognitive appraisal is influenced by an individual's perceived threat or harm of the situation, the frequency of the event, the novelty of the event, and expectations about outcome.

Studies have supported the finding that family role models can impact on individual pain behaviors and attitudes (Nicassio & Radojevic, 1993; Skevington, 1983; Turk, Rudy, & Flor, 1985). Considering the basis for the acquisition and maintenance of pain behaviors through the process of modeling, this study examined the possibility that children with frequent pain experiences would observe and emulate parental coping strategies in managing pain, in particular if the parent has a chronic pain problem. It would seem possible that children who live with a parent who has a chronic pain condition would be more likely exposed to the ways that their parent experiences pain, manages pain, and also learn of the consequences their parent receives for exhibiting different pain behaviors. This possibility would seem more likely if the child also has a pain condition that requires frequent pain management. It would also seem that children who do not live with a parent with chronic pain problems would have fewer opportunities to observe these dynamics. Graphically, this study found that, coping strategy scores on cognitive distraction, positive self-statements, catastrophizing, and behavioral distraction

were more similar between headache children who have a chronic pain parent in comparison to headache children without a chronic pain parent. These findings would be supported by social modeling theory. It is important to note, however, that despite the similarities in coping scores between headache children and their chronic pain parent, there were no statistically significant correlations found between all parent and child rated behavior/cognitive coping strategies. It is possible that some of the parental behavioral strategies occur outside the child's awareness (e.g., Doing something I enjoy) (Reid et al., 1998) and research has suggested that young children may be less apt to learn cognitive coping strategies (non-observable strategies) through observational learning (Compas, Worsham, & Ey, 1992; Reid et al., 1998). Further, children may acquire methods to deal with pain outside of their family unit (e.g., peers).

Therefore, it is questionable of the apparent similarities in coping scores between headache children and their chronic pain parent in comparison to headache children without a chronic pain parent. Further, these findings are limited due to the small sample size. In this study only 12 out of 69 parents reported having a chronic pain condition. Therefore, it is uncertain whether the differences in coping scores between the child/parent dyads is statistically significant and whether social modeling is the reason for this trend.

Through exploratory analyses it was found that there were no significant group mean differences (headache and control) in coping (approach, problem-focused avoidance, emotion-focused avoidance). This suggests that children with headache may manage their pain in similar ways as children without frequent headache. Cunningham et

al. (1987) found that among a group of children with and without migraine headache, psychological variables such as anxiety, depression, social functioning, and unhappiness were related to pain severity rather than characteristics inherent to migraine headache. This suggests that pain type (headache and non-headache) may not differentiate between the groups in terms of personality characteristics and coping strategies, however other variables may be involved such as the intensity of the pain and degree of disability as a result of the pain (Cunningham et al). It is important to note that the population of headache children included in this study was a non-depressed and non-clinical group. Both the control and headache children scored in the "normal range" on the psychological variables. This suggests that the children in this study are functioning well overall. It is possible that the weak relationships found between the coping strategy and outcome measures are due to the nature of this "high functioning" group.

Another exploratory analyses found that children without headache self-reported that they managed their worst pain experienced in the past week more effectively in comparison to the worst pain that children with headache experienced. It was found that the control group scored significantly higher in perceived pain coping effectiveness in comparison to the headache group. An example of the items on the pain coping effectiveness measure included: "I handled the pain well," "I learned from this problem," and "I became a stronger person." Interestingly, each group had similar mean scores in pain severity (headache: $\bar{M} = 5.43$; control: $\bar{M} = 5.44$) and the groups did not significantly differ in approach, problem-focused avoidance, and emotion-focused avoidance coping. These findings may suggest that children who experience frequent pains (e.g., headache

group) are more likely to use a variety of methods to manage the pain. However, if the child's attempts to manage the pain are unsuccessful at decreasing the pain intensity, severity, or duration, he/she may develop a conceptualization that they have minimal control over their pain and as a result may develop beliefs that their coping attempts are futile and ineffective.

Further, children in the headache group scored significantly higher on the FDI in comparison to the control group. Therefore, the headache group may be experiencing greater levels of disruption in physical abilities, going out with friends, going to school, and engaging in leisure activities. These children may feel less effective at managing their pain if the pain prevents or limits their daily functioning. Also, children with headache may experience greater levels of disruption in social/academic relationships as a result of their pain (e.g., greater school absenteeism, decreased involvement in extra curricular activities, and decreased peer involvement) in comparison to control children. For example, Cunningham et al. (1987) found that children with headache problems scored higher on measures of somatic complaints, internalizing behavior problems, anxiety, and showed greater disruption in social relationships in comparison to children without headache. This study found that parents with a headache child reported significantly greater number of occurrences of pain interfering with their child's social relationships (88.6% of parents) and schoolwork (77.1% of parents) in comparison to parents with a non-headache child (12.1% of parents reported that pain has interfered with their child's social relationships; 8.8% of parents reported that pain has interfered with their child's schoolwork). Further, it was found that parents of children with headache reported

significantly higher frequencies of their child experiencing current pain (26.5%) and their child taking medication to relieve pain (67.6%) in comparison to parents with children without headache (2.9% of parents reported that their child is experiencing current pain; 5.9% of parents reported that their child is taking medication to relieve pain).

In addition, for children who experience frequent headache, low levels of perceived pain coping effectiveness may also be due to unsuccessful attempts at absolving their pain in the past. For example, children with headache may have used various methods to manage their pain (e.g., medications, sleep, relaxing, seeking social support) that were unsuccessful at relieving the pain. Further, parental concern for their child's wellbeing may have led these children to visit various doctors or psychiatrists in an attempt to receive a diagnosis for the problem. These experiences may lead the child to feel that he/she has minimal control over their pain and therefore, the child may develop beliefs that their attempts are ineffective at relieving their pain.

Studies have also suggested that the effectiveness of a given coping strategy may not be determined by the strategy alone (Folkman, 1984). Folkman and Lazarus (1980) have found that problem-focused and emotion-focused coping are both used when an individual deals with a stressful situation and the frequency of either coping strategy varies on how the stressor is appraised (e.g., as controllable or uncontrollable). Therefore, a child's cognitive appraisal of the stressor may play an important role in determining the proportions of different types of coping strategies used to manage pain (Folkman).

The relationships between various psychological variables and coping strategies (approach, problem-focused avoidance and emotion-focused avoidance) between the

headache and control groups were also explored. This study found that depression seems to play a large role in children with frequent pain experiences. It was found that for the headache group, depression scores were significantly positively related to anxiety, functional disability, and pain severity scores for the worst pain experienced in the past week. However, for the control group, depression scores were only significantly correlated with anxiety. Although CDI scores did not significantly differ between the groups, depression was found to impact on functional disability and pain severity levels for the headache group. The findings also indicated that the children in the control group who perceived themselves as effective in managing their worst weekly pain, self-reported lower levels of pain severity.

This study also explored the relationships between younger and older children and their parents in pain coping strategies. It would seem that older children have a greater number of opportunities to experience and therefore deal with pain in a variety of ways in comparison to younger children. Also, as a result of advanced cognitive-developmental levels, older children have been found to employ greater levels of cognitive and emotion-focused coping strategies (mainly covert coping strategies) in comparison to younger children who tend to use greater levels of behavioral strategies to manage pain (Ross & Ross, 1988). Older children have greater flexibility in using coping strategies and adapting these strategies across a range of stressful situations whereas younger children experience more difficulties using distraction coping strategies and experience greater levels of cognitive distortions that can impede the coping process (e.g., immature conceptualizations of bodily processes) (Aldwin, 1994; Folkman, Lazarus, Pimley, &

Novacek, 1987; Ross & Ross).

It is important to note however, that the age groups (younger/older children) used in this analysis were quite similar and therefore, there may not have been a large enough age difference between the groups to observe coping strategy differences. The younger aged groups ranged in age from 8.5 to 10 years whereas the older aged group ranged in age from 10.5 to 14 years. The majority of children who participated in this study were 10 years of age. Therefore, the younger and older age groups may not have been optimally represented.

Limitations

The small sample size and sample recruitment procedures are limitations of this study. The sample size for this study was smaller than ideal given the number of statistical analyses performed. In addition some proposed statistical analyses were modified to account for the small sample size. Due to the research design, a limitation of this study is that the children and parents were required to recall their worst pain experience in the past week and then recall the ways that they managed the pain. The retrospective nature of this study may have influenced the self-reporting of pain experiences as well as the coping mechanisms used. Another weakness of this study is the possibility of experimenter bias. The primary investigator of the study recruited and ran the majority of the participants. A further limitation of this study is that children's coping was examined in a single context at a given point in time using correlational analyses. As a result, changes in the types of coping strategies across situations or across time could not be assessed as well as the direction of causality. For example, does coping cause the

psychological variables (e.g., depression, anxiety, functional disability, pain severity) or do individuals with elevated scores on the psychological variables cope differently in comparison to individual's without elevated scores?

Strengths

In order to account for the above limitations, this study included a research assistant to recruit and meet with some families. Further, a verbal script was prepared and used by both the primary investigator of the study and the research assistant when meeting and screening families to increase consistency between interviewers.

Another advantage of this study is that it examined three types of coping strategies (approach, problem-focused avoidance, and emotion-focused avoidance coping). Past studies have assessed only one type of coping strategy (e.g., behavioral) (Reid et al., 1998). In addition, this study used a coping measure, the Pain Coping Questionnaire, that has been found to have good validity and high internal consistency reliabilities. Previous studies have utilized instruments lacking in adequate psychometric properties.

Implications

The literature on child pain coping strategies and levels of adjustment is limited. The strengths of this study is that it examined the ways that children with pain problems deal with painful experiences and this study further investigated the influence of coping strategies on psychological well-being. Overall, it was found that approach, problem-focused avoidance, and emotion-focused avoidance coping were not related to the adjustment variables measured in this study (e.g., pain severity, depression, anxiety, and

functional disability scores). There may be many variables that influence outcome measures that were not examined in this study including cognitive appraisal of a stressor, expectations associated with the painful experience, locus of control, history of pain experiences, and personality. In this study, children and their parents recalled their worst pain experienced in the past week and the coping strategies they employed to manage that pain. If children and their parents self-reported their coping strategies the day of or the day after experiencing their worst pain, there may have been a stronger relationship between approach, problem-focused avoidance and emotion-focused avoidance coping and the adjustment variables (pain severity, depression, anxiety, and functional disability scores). Reid et al (1998) provides support to this possibility.

Coping efforts have been conceptualized as varying as a function of both individual variables and situational characteristics (Bandell-Hoekstra et al., 2000). This study examined coping strategies in a retrospective manner and children and parents recalled and reported on an isolated circumstance of experiencing pain. This study did not account for temporal or situational aspects of coping. Various dimensions involved in a stressful situation can vary (e.g., severity, chronicity, prognosis, degree of disability) and may influence the ways a child copes with the situation. Further, the effectiveness of problem-focused and emotion-focused coping may be influenced by these variables (Compas, Worsham, & Ey, 1992).

In general, studies have suggested that among pediatric populations, problem-focused efforts tend to be more effective at managing pain in comparison to passive, emotion-focused strategies (Band, 1990; Compas, Worsham, & Ey, 1992; Peterson,

1989). However, emotion-focused coping efforts have been reported to be more effective at dealing with short term stressors that are perceived as low in controllability (Auerbach, 1989). It appears that both types of coping strategies play an important role in managing a stressor and that the ways an individual deals with the stressor changes throughout the stressful experience. Some coping strategies may be more useful than others depending on the characteristics of the situation.

Gil et al (1993) notes that pain coping strategies change over time and may be influenced by the type, frequency, and intensity of pain being experienced. For example, Gil et al. investigated the stability of pain coping strategies among children and adolescents with sickle cell disease over a 9-month period. The pain coping strategies examined included Coping Attempts (e.g., diverting attention and positive self-statements), Passive Adherence (e.g., resting), and Negative Thinking (e.g., catastrophizing and self-statements of anger) (Gil et al., 1993). These researchers found that coping strategies in children and adolescents tended to be more variable over time in comparison to adults. However, some studies have found that children may be more consistent in the coping strategies they use to manage stressors across different contexts in comparison to adults (Compas, Malcarne, & Fondacaro, 1988; Wills, 1986). Unfortunately, there are a limited number of studies examining the temporal and situational characteristics of child coping patterns in similar contexts.

The ways an individual copes with a situation is influenced by both personal and environmental characteristics of the stressful situation (Compas, Worsham, & Ey, 1992). The coping literature has defined the concept of coping as a trait (stable, person oriented)

or as a process (unstable, situation oriented) (Compas, Worsham, & Ey). Lazarus and Folkman (1984) define stress as a reciprocal relationship between the person and his/her environment. Therefore, to understand the nature of coping processes and levels of perceived pain controllability, the specific person/environment relationship where the stress resides must be considered (Lazarus & Folkman). An individual's cognitive appraisal of the stressful event has been found to change throughout a stressful encounter due to the changes that occur in the relationship between the person and his/her environment (Folkman).

Future Studies

Future studies should continue to assess the types of coping that children and adolescents use to manage painful experiences. This information will assist clinicians in designing optimal psychological intervention programs or preventative interventions. In clinic settings, clinicians can use a variety of brief screening devices (e.g., Kidcope) to assess children who are experiencing difficulties in coping (Compas, Worsham, & Ey, 1992). The Kidcope provides information on the frequency and efficacy of different behavioral and cognitive coping strategies (Compas, Worsham, & Ey). This information is important for the clinician's knowledge in teaching children different coping strategies to use while in pain. In addition, this information can assist the therapist or parent in preparing the child for medical appointments/procedures with developmentally appropriate materials (e.g., films, role play, dolls) (Aldwin, 1994).

It is important for studies to focus on the maintenance and promotion of child health and ways to teach children methods to adapt to recurrent pains. Children can

benefit in coping when taught coping strategies that are consistent to the strategies that he/she naturally self-initiate (Ross & Ross, 1988). For example, Fanurik et al. (1993) examined the coping strategies that children between the ages of 8 and 10 years spontaneously use, and then taught the children coping strategies that "matched" or were consistent with their natural coping styles. On the basis of natural coping styles, these researchers classified the children into either the distractor coping group (diverting attention away from the stimulus) or the attender coping group (diverting attention toward the stimulus). It was found that children in the distractor coping group who were "matched" with an imagery coping technique demonstrated greater levels of tolerance during a cold compressor test in comparison to children who were taught a "mismatched" coping strategy (sensory focusing) (Fanurik et al.). The findings indicate that children's abilities to distract themselves from discomfort were enhanced when "coached" on how to use specific distraction coping techniques (Fanurik et al.). Studies have shown that teaching children coping strategies that are consistent with their natural coping strategies can maximize pain management interventions (Blout et al., 1989).

Refinements in coping self-report instruments are needed in order to gather accurate information on the ways that children cope with pain or hurt, the effectiveness of various coping strategies on well-being, and to greater understand the role of developmental factors in childhood coping. There are a limited number of child pain coping questionnaires that have good reliability and validity.

Another area of importance includes examining the effects of parental pain role modeling on children's pain expressions, specifically, on the modeling of pain coping

strategies. It has been suggested that "the degree of pain tolerance exhibited by a model affected the observers' willingness to endure noxious stimulations and influenced their reports of the intensity of pain experienced; subjects exposed to pain-tolerant models showed no increases in autonomic measures of subjective distress as a function of noxious stimulation; and nonverbal expressions of pain were less subject to modeling influences than were verbal reports" (Ross & Ross, 1988, p. 299). These findings are supported by social learning theory, however, research is needed to investigate the possibility of the transmission of coping strategies in managing pain through similar processes. This would have a large impact on approaches to pediatric pain management.

Greater levels of personal control have been found to attenuate pain. Therefore, it is important that the medical professionals and parents involved with the child accept and encourage the development of his/her personal control over the stressor/situation.

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Appendix A: Study Letter to Parents (Public School System)

Dear Parent,

Hello, my name is Debra Konyk and I am a psychology graduate student at the University of Manitoba. I am presently conducting a research project (M.A. thesis) that will examine the styles of coping with pain that children with frequent pain problems use as well as the coping styles that children without frequent or chronic pain problems. Children experience pain in everyday situations such as scraping their knee, getting a cut, or falling off their bicycle. These situations are important to examine due to the high frequency that children encounter these types of painful experiences.

Specifically, I will be investigating the ways that both parent and child manage painful experiences. Your participation in this study will be valuable to you and your child because this information can help us to better understand the styles of childhood coping related to positive adjustment as well as providing information for designing optimal treatment programs. In addition, at the end of the study we will schedule a feedback session to discuss the questionnaire results for both your child and yourself.

I would appreciate your participation by asking you and your child to complete several questionnaires, which are commonly used to measure coping in children and adults. We can schedule a time convenient for you to complete the questionnaires. Your participation is anticipated to take sixty minutes. This study has been approved by the Research Ethics Board at the University of Manitoba.

I would also like to inform you that your participation is completely voluntary and will *not* affect any medical treatment that your child receives now or in the future. You and your child may also withdraw from the study at any time. The information will be strictly confidential and used only for research purposes. I have taken the following measure to ensure anonymity. No names will appear on the questionnaires, only a family identification number.

I would very much appreciate your cooperation and time. Please complete the attached permission slip and return to the school (your child's teacher) whether you are interested or not interested in participating. If interested, please phone me at the Psychological Service Center (P.S.C.) located at the University of Manitoba at **474-9222**. If necessary, please leave your name (first name) and telephone number and I will return your call as soon as possible. You can also include your telephone number on the permission slip for me to contact you.

This study is for partial fulfillment for my Master of Arts degree and is supervised by Dr. Michael Thomas. In order to participate in the study, you will need to sign a consent form allowing your child and yourself to participate. We will complete this form during the appointment. It is also necessary that your child provide verbal consent to participate in the study. Thank you for your time and consideration.

Debra L. Konyk, B. Sc.; B.A. (Hons.)
Department of Psychology
University of Manitoba

Michael R. Thomas, Ph.D., C. Psych
Supervising Psychologist
University of Manitoba

Coping in Children with Chronic Pain 110
Appendix B

COPING STRATEGY STUDY
PARTICIPATION SLIP

PLEASE COMPLETE THE FOLLOWING FORM AND RETURN BY
(date included here) TO INDICATE WHETHER YOU ARE
INTERESTED OR NOT INTERESTED IN PARTICIPATING IN THE STUDY.

Thank you.

_____ *Yes*, I am interested in participating in the Coping Strategy Study
conducted by Debra Konyk and supervised by Dr. M. Thomas.

Name of Parent: _____

Telephone (Contact) Number (optional): _____

_____ *No*, I am not interested in participating in the Coping Strategy Study
conducted by Debra Konyk and supervised by Dr. M. Thomas.

Thank you for your time and consideration.

Sincerely,

Debra Konyk

Appendix C: Wide Range Achievement Test (WRAT 3)

INSTRUCTIONS: Look at each of these words carefully. Read the words across the page so I can hear you. When you finish the first line, go to the next line and so on.

TAN READING

see	red	milk	was
then	jar	letter	city
between	cliff	stalk	grunt
huge	plot	sour	humidity
clarify	residence	urge	rancid
conspiracy	deny	quarantine	deteriorate
rudimentary	mosaic	rescinded	audacious
mitosis	protuberance	longevity	predilection
regime	beatify	internecine	regicidal
puerile	factitious	lucubration	
epithalamion	inefficacious	synecdoche	

Appendix D: Child's Experience of Pain (Headache)

1.) What was the *worst* pain that you experienced in the past week? (please circle *one* of the following):

- | | |
|---|----------------|
| a) Headache | f) Ear ache |
| b) Back pain | g) Muscle pain |
| c) Stomach/abdominal pain | h) Neck pain |
| d) Tooth ache | i) Joint pain |
| e) Other kind of pain (please explain): _____ | |

2.) When was the last time that you had headache pain? (please circle your answer).

- | | |
|----------------|------------------------------|
| a) 5 days ago | e) 2 months ago |
| b) 10 days ago | f) 3 months ago |
| c) 15 days ago | g) greater than 3 months ago |
| d) a month ago | |

3.) For the *worst* pain you experienced during the past week, how much did that pain hurt?

If you pick 0 that means that the pain did not hurt at all, if you pick 5 that means that the pain hurt somewhat, and if you pick 10 that means the pain hurt the most. Please circle the number along the scale. Remember, you can pick any number along the scale.

0	1	2	3	4	5	6	7	8	9	10
No					Somewhat					Greatest
Hurt					hurt					hurt

Appendix E: Child's Experience of Pain (Control Children)

1.) What was the *worst* pain that you experienced in the past week? (please circle *one* of the following):

- e) Headache
- f) Back pain
- g) Stomach/abdominal pain
- h) Tooth ache
- i) Ear ache
- j) Muscle pain
- k) Neck pain
- l) Joint pain
- m) Other kind of pain (please explain): _____

2.) For the *worst* pain you experienced during the past week, how much did that pain hurt?

If you pick 0 that means that the pain did not hurt at all, if you pick 5 that means that the pain hurt somewhat, and if you pick 10 that means the pain hurt the most. Please circle the number along the scale. Remember, you can pick any number along the scale.

0	1	2	3	4	5	6	7	8	9	10
No					Somewhat					Greatest
Hurt					Hurt					Hurt

Appendix F: Pain Coping Questionnaire (PCQ)

Child Form

Age (in years) _____ Sex (circle): Male Female Grade _____

Everyone has had a time when they have been hurt or in pain for a few hours or longer. For example, you might have had a headache, a stomachache, a bad muscle pull, pain in your joints (elbow, knee), back pain, an earache, etc. Below are some things that people might say, do, or think when they are hurt or in pain. We are interested in the things you do when you are in pain for a few hours or days.

Circle one number for each question to show how often you do each thing listed:

1=never, 2=hardly ever, 3=sometimes, 4=often, or 5=very often.

	Never	Hardly ever	Sometimes	Often	Very often
WHEN I AM HURT OR IN PAIN FOR A FEW HOURS OR DAYS, I ...					
1) Ask questions about the pain.	1	2	3	4	5
2) Focus on the pain and see how I can make it better.	1	2	3	4	5
3) Talk to a friend about how I feel.	1	2	3	4	5
4) Tell myself, don't worry everything will be ok.	1	2	3	4	5
5) Go and play.	1	2	3	4	5
6) Forget the whole thing.	1	2	3	4	5
7) Say mean things to people.	1	2	3	4	5
8) Worry that I will always be in pain.	1	2	3	4	5
9) Ask a nurse or doctor questions.	1	2	3	4	5
WHEN I AM HURT OR IN PAIN FOR A FEW HOURS OR DAYS, I ...					
10) Think about what needs to be done to make the pain better.	1	2	3	4	5
11) Talk to someone about how I am feeling.	1	2	3	4	5
12) Say to myself, be strong.	1	2	3	4	5

	Never	Hardly ever	Sometimes	Often	Very often
WHEN I AM HURT OR IN PAIN FOR A FEW HOURS OR DAYS, I ...					
13) Do something fun.	1	2	3	4	5
14) Ignore the pain.	1	2	3	4	5
15) Argue or fight.	1	2	3	4	5
16) Keep thinking about how much it hurts.	1	2	3	4	5
17) Find out more information.	1	2	3	4	5
18) Think of different ways to deal with the pain.	1	2	3	4	5

19) Tell someone how I feel.	1	2	3	4	5
20) Tell myself, it's not so bad.	1	2	3	4	5
21) Do something I enjoy.	1	2	3	4	5
22) Try to forget it.	1	2	3	4	5
23) Yell to let off steam.	1	2	3	4	5
24) Think that nothing helps.	1	2	3	4	5
25) Learn more about how my body works.	1	2	3	4	5
26) Figure out what I can do about the pain.	1	2	3	4	5
27) Talk to a family member about how I feel.	1	2	3	4	5
28) Say to myself, things will be ok.	1	2	3	4	5
29) Do something active.	1	2	3	4	5
WHEN I AM HURT OR IN PAIN FOR A FEW HOURS OR DAYS, I ...					
30) Put the pain out of my mind.	1	2	3	4	5
31) Get mad and throw or hit something.	1	2	3	4	5
32) Think that the pain will never stop.	1	2	3	4	5
33) Try different ways to make the pain better until I find one that works.	1	2	3	4	5

	Never	Hardly ever	Sometimes	Often	Very often
WHEN I AM HURT OR IN PAIN FOR A FEW HOURS OR DAYS, I ...					
34) Let my feelings out to a friend.	1	2	3	4	5
35) Tell myself, I can handle anything that happens.	1	2	3	4	5
36) Do something to take my mind off the pain.	1	2	3	4	5
37) Don't think about the pain.	1	2	3	4	5
38) Curse or swear out loud.	1	2	3	4	5
39) Worry too much about the pain.	1	2	3	4	5

People have different feelings when they are hurt or in pain. For each of the 7 feelings listed below, circle the one response that shows how you feel when you are hurt or in pain for a few hours or days. In other words, circle one of the following for each question: Not at all, A little, Pretty, or Really.

Happy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Not at all Happy	A little Happy	Pretty Happy	Really Happy
Sad	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Not at all Sad	A little Sad	Pretty Sad	Really Sad
Excited	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Not at all Excited	A little Excited	Pretty Excited	Really Excited
Angry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Not at all Angry	A little Angry	Pretty Angry	Really Angry
Calm/ Relaxed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Not at all Calm/ Relaxed	A little Calm/ Relaxed	Pretty Calm/ Relaxed	Really Calm/ Relaxed
Scared/ Afraid	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Not at all Scared/ Afraid	A little Scared/ Afraid	Pretty Scared/ Afraid	Really Scared/ Afraid
Nervous/ Worried	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Not at all	A little	Pretty	Really

Nervous/ Worried Nervous/ Worried Nervous/ Worried Nervous/ Worried
Dealing with Pain

- 1) When you are hurt or in pain for a few hours or days, how often do you think you can do something to change it?

Never Hardly Ever Sometimes Often Very Often

- 2) Being hurt or in pain can be hard or easy to deal with. How hard or easy is it for you to deal with being in pain?

Really Easy	Kind of Easy	Kind of Easy/ Kind of Hard	Kind of Hard	Really Hard
-------------	--------------	-------------------------------	--------------	-------------

- 3) How often do you think you can do something to change your moods or feelings when you are hurt or in pain?

Never Hardly Ever Sometimes Often Very Often

Please answer the next seven questions in terms of how your problems with pain turned out or how you felt about being in pain after it was over. How your problems with hurt/pain turned out: In terms of when you have been hurt or in pain for a few hours or a few days, how much do you agree with the following statements.

- 1 = I strongly disagree with the statement
2 = I sort of disagree with the statement
3 = I agree and disagree with the statement
4 = I sort of agree with the statement
5 = I strongly agree with the statement

	Strongly Disagree	Sort of Disagree	Agree/ Disagree	Sort of Agree	Strongly Agree
1 = I strongly disagree with the statement					
2 = I sort of disagree with the statement					
3 = I agree and disagree with the statement					
4 = I sort of agree with the statement					
5 = I strongly agree with the statement					
1) I handled the pain well.	1	2	3	4	5
2) I learned from this problem.	1	2	3	4	5
3) I felt better about myself	1	2	3	4	5
4) I handled my feelings well in dealing with the pain. ...	1	2	3	4	5
5) I did a good job of solving the problems that came up.	1	2	3	4	5
6) I became a stronger person	1	2	3	4	5
7) The things that I did when I was in pain were helpful. ..	1	2	3	4	5

Pain Experiences

Which of the following different kinds of hurt or pain were you thinking about while answering the questions above? Circle as many of the different types of pain you were thinking about.

- a) headache b) stomach ache c) muscle pain d) joint pain (e.g., elbow, knee)
e) back pain f) earache g) (for women) menstrual pain
h) other _____

Appendix G: Waldron/Varni Pediatric Pain Coping Inventory (PPCI)

Child Version

Date: _____

Family #: _____

1. When I have pain or hurt, I think about

2. When I have pain or hurt, I do

3. When I have pain or hurt, I ask for

4. When I have pain or hurt, I wish

Here is a list of things that children sometimes do when they have pain or hurt. For each one of the things, mark if you do it not at all, sometimes, or a lot of the time by circling the number under that thing in the column on the right. Please be sure to circle a number for each one of the things on the list.

WHEN I FEEL PAIN OR HURT, I

	NOT AT ALL	SOMETIMES	A LOT
1. Tell myself to be brave.....	0	1	2
2. Imagine I can make the pain or hurt disappear by myself.....	0	1	2
3. Pretend I don't have any pain or hurt.....	0	1	2
4. Tell myself that it will be all right.....	0	1	2
5. Know that I can do something to make the pain or hurt feel better.....	0	1	2
6. Know that I can ask for something that will make the pain or hurt feel better.....	0	1	2
7. Pretend that the pain or hurt doesn't hurt as much as it really does.....	0	1	2

Appendix H: Waldron/Varni Pediatric Pain Coping Inventory (PPCI)

Adolescent Version

Date: _____

Family #: _____

1. When I have pain, I think about

2. When I have pain, I do

3. When I have pain, I ask for

4. When I have pain, I wish

Here is a list of things that teenagers sometimes do when they are in pain. For each one of the choices, please indicate if you do it never, sometimes, or often by circling the number under that choice in the column on the right. Please be sure to circle a response for each item.

WHEN I FEEL PAIN, I

	NEVER	SOMETIMES	OFTEN
1. Tell myself I can handle it.....	0	1	2
2. Imagine I can make the pain disappear by myself.....	0	1	2
3. Pretend I don't have any pain	0	1	2
4. Tell myself that it will be all right.....	0	1	2
5. Know that I can do something to make the pain feel better.....	0	1	2
6. Know that I can ask for something that will make the pain feel better.....	0	1	2
7. Pretend the pain is not as bad as it really is.....	0	1	2

Appendix I: Functional Disability Inventory (FDI)

Child Form

Date: _____

Family # _____

When people are sick or not feeling well it is sometimes difficult for them to do their regular activities. In the last few days, would you have had any physical trouble or difficulty doing these activities?

1. Walking to the bathroom.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

2. Walking up stairs.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

3. Doing something with a friend (for example, playing a game).

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

4. Doing chores at home.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

5. Eating regular meals.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

6. Being up all day without a nap or rest.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

7. Riding the school bus or traveling in the car.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

Remember, you are being asked about difficulty due to physical health.

8. Being at school all day.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

9. Doing the activities in gym class (or playing sports).

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

10. Reading or doing homework

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

11. Watching TV.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

12. Walking the length of a football field.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

13. Running the length of a football field.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

14. Going shopping.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

15. Getting to sleep at night and staying asleep.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

Appendix J: Children's Depression Inventory (CDI)

Date: _____

Family # _____

Kids sometimes have different feelings and ideas. This form lists the feelings and ideas in groups. From each group, pick one sentence that describes you best for the past two weeks. After you pick a sentence from the first group, go on to the next group.

There is no right or wrong answer. Just pick the sentence that best describes the way you have been feeling recently. Circle the letter next to your answer.

Here is an example of how this form works. Try it. Circle the letter next to the sentence that describes how you feel best.

Example:

- a. I read books all the time.
- b. I read books once in a while.
- c. I never read books.

Remember, pick out the sentence that describes your feelings and ideas in the past two weeks.

1. a. I am sad once in a while.
b. I am sad many times.
c. I am sad all the time.
2. a. Nothing will ever work out for me.
b. I am not sure if things will work out for me.
c. Things will work out for me O.K.
3. a. I do most things O.K.
b. I do many things wrong.
c. I do everything wrong.
4. a. I have fun in many things.
b. I have fun in some things.
c. Nothing is fun at all.
5. a. I am bad all the time.
b. I am bad many times.
c. I am bad once in a while.
6. a. I think about bad things happening to me once in a while.
b. I worry that bad things will happen to me.
c. I am sure that terrible things will happen to me.
7. a. I hate myself.
b. I do not like myself.
c. I like myself.
8. a. All bad things are my fault.
b. Many bad things are my fault.
c. Bad things are not usually my fault.
9. a. I do not think about hurting myself.
b. I think about hurting myself but I would not do it.
c. I want to hurt myself.
10. a. I feel like crying everyday.
b. I feel like crying many days.
c. I feel like crying once in a while.

11. a. Things bother me all the time.
b. Things bother me many times.
c. Things bother me once in a while.
12. a. I like being with people.
b. I do not like being with people many times.
c. I do not want to be with people at all.
13. a. I cannot make up my mind about things.
b. It is hard to make up my mind about things.
c. I make up my mind about things easily.
14. a. I look O.K.
b. There are some bad things about my looks.
c. I look ugly.
15. a. I have to push myself all the time to do my schoolwork.
b. I have to push myself many times to do my schoolwork.
c. Doing schoolwork is not a big problem.
16. a. I have trouble sleeping every night.
b. I have trouble sleeping many nights.
c. I sleep pretty well.
17. a. I am tired once in a while.
b. I am tired many days.
c. I am tired all the time.
18. a. Most days I do not feel like eating.
b. Many days I do not feel like eating.
c. I eat pretty well.
19. a. I do not worry about aches and pains.
b. I worry about aches and pains many times.
c. I worry about aches and pains all the time.
20. a. I do not feel alone.
b. I feel alone many times.
c. I feel alone all the time.
21. a. I never have any fun at school.
b. I have fun at school only once in a while.
c. I have fun at school many times.

- 22. a. I have plenty of friends.
b. I have some friends but I wish I had more.
c. I do not have any friends.
- 23. a. My schoolwork is all right.
b. My schoolwork is not as good as before.
c. I do very badly in subjects I used to be good in.
- 24. a. I can never be as good as other kids.
b. I can be as good as other kids if I want to.
c. I am just as good as other kids.
- 25. a. Nobody really loves me.
b. I am not sure if anyone loves me.
c. I am sure that somebody loves me.
- 26. a. I usually do what I am told.
b. I do not do what I am told most times.
c. I never do what I am told.
- 27. a. I get along with people.
b. I get into fights many times.
c. I get into fights all the time.

Appendix K: State-Trait Anxiety Inventory for Children-Trait Scale (STAIC-T)

Date: _____

Family # _____

A number of statements which boys and girls use to describe themselves are given below. Read each statement and decide if it is hardly-ever, or sometimes, or often true of you. Then for each statement, circle the word that describes you best. There is no right or wrong answers. Do not spend too much time on any one statement. Remember, choose the word which seems to describe how you usually feel.

- | | | | |
|---|-------------|-----------|-------|
| 1. I worry about making statements | Hardly-ever | Sometimes | Often |
| 2. I feel like crying | Hardly-ever | Sometimes | Often |
| 3. I feel unhappy | Hardly-ever | Sometimes | Often |
| 4. I have trouble making up my mind | Hardly-ever | Sometimes | Often |
| 5. It is difficult for me to face my problems | Hardly-ever | Sometimes | Often |
| 6. I worry too much | Hardly-ever | Sometimes | Often |
| 7. I get upset at home | Hardly-ever | Sometimes | Often |
| 8. I am shy | Hardly-ever | Sometimes | Often |
| 9. I feel troubled | Hardly-ever | Sometimes | Often |
| 10. Thoughts run through my mind
and bother me | Hardly-ever | Sometimes | Often |
| 11. I worry about school | Hardly-ever | Sometimes | Often |
| 12. I have trouble deciding what to do | Hardly-ever | Sometimes | Often |
| 13. I notice that my heart beats fast | Hardly-ever | Sometimes | Often |
| 14. I am secretly afraid | Hardly-ever | Sometimes | Often |
| 15. I worry about my parents..... | Hardly-ever | Sometimes | Often |

16. My hands get sweaty	Hardly-ever	Sometimes	Often
17. I worry about things that may happen	Hardly-ever	Sometimes	Often
18. It is hard for me to fall asleep at night	Hardly-ever	Sometimes	Often
19. I get a funny feeling in my stomach	Hardly-ever	Sometimes	Often
20. I worry about what others will think of me.....	Hardly-ever	Sometimes	Often

Appendix L: Piers-Harris Children's Self-Concept Scale (PHCSCS)

DIRECTIONS: Here is a set of questions that tell how some people feel about themselves. Read each statement and decide whether or not it describes the way you feel about yourself. If it is true or mostly true for you, circle the word "yes" next to the statement. If it is false or mostly false for you, circle the word "no." Answer every question, even if some are hard to decide. Do not circle both "yes" and "no" for the same statement.

Remember that there are no right or wrong answers. Only you can tell us how you feel about yourself, so we hope you will mark the way you really feel inside.

- | | | |
|--|-----|----|
| 1. My classmates make fun of me | Yes | No |
| 2. I am a happy person | Yes | No |
| 3. It is hard for me to make friends | Yes | No |
| 4. I am often sad | Yes | No |
| 5. I am smart | Yes | No |
| 6. I am shy | Yes | No |
| 7. I get nervous | Yes | No |
| 8. My looks bother me | Yes | No |
| 9. When I grow up, I will be an important person | Yes | No |
| 10. I get worried when we have tests in school | Yes | No |
| 11. I am unpopular | Yes | No |
| 12. I am well behaved in school | Yes | No |
| 13. It is usually my fault when something goes wrong | Yes | No |
| 14. I cause trouble to my family | Yes | No |
| 15. I am strong | Yes | No |
| 16. I have good ideas | Yes | No |

17. I am an important member of my family	Yes	No
18. I usually want my own way	Yes	No
19. I am good at making things with my hands	Yes	No
20. I give up easily	Yes	No
21. I am good in my schoolwork	Yes	No
22. I do many bad things	Yes	No
23. I can draw well	Yes	No
24. I am good in music	Yes	No
25. I behave badly at home	Yes	No
26. I am slow in finishing my schoolwork	Yes	No
27. I am an important member of my class	Yes	No
28. I am nervous	Yes	No
29. I have pretty eyes	Yes	No
30. I can give a good report in front of the class	Yes	No
31. In school, I am a dreamer	Yes	No
32. I pick on my brother(s) and sister(s)	Yes	No
33. My friends like my ideas	Yes	No
34. I often get into trouble	Yes	No
35. I am obedient at home	Yes	No
36. I am lucky	Yes	No
37. I worry a lot	Yes	No
38. My parents expect too much of me	Yes	No
39. I like being the way I am	Yes	No

40. I feel left out of things	Yes	No
41. I have nice hair	Yes	No
42. I often volunteer in school	Yes	No
43. I wish I were different	Yes	No
44. I sleep well at night	Yes	No
45. I hate school	Yes	No
46. I am among the last to be chosen for games	Yes	No
47. I am sick a lot	Yes	No
48. I am often mean to other people.	Yes	No
49. My classmates in school think I have good ideas	Yes	No
50. I am unhappy	Yes	No
51. I have many friends	Yes	No
52. I am cheerful	Yes	No
53. I am dumb about most things	Yes	No
54. I am good-looking	Yes	No
55. I have lots of pep (energy)	Yes	No
56. I get into a lot of fights	Yes	No
57. I am popular with boys	Yes	No
58. People pick on me	Yes	No
59. My family is disappointed in me	Yes	No
60. I have a pleasant face	Yes	No
61. When I try to make something, everything seems to go wrong	Yes	No

62. I am picked on at home	Yes	No
63. I am a leader in games and sports	Yes	No
64. I am clumsy	Yes	No
65. In games and sports, I watch instead of play	Yes	No
66. I forget what I learn	Yes	No
67. I am easy to get along with	Yes	No
68. I loss my temper easily	Yes	No
69. I am popular with girls	Yes	No
70. I am a good reader	Yes	No
71. I would rather work alone than with a group	Yes	No
72. I like my brother (sister)	Yes	No
73. I have a good figure	Yes	No
74. I am often afraid	Yes	No
75. I am always dropping or breaking things	Yes	No
76. I can be trusted	Yes	No
77. I am different from other people	Yes	No
78. I think bad thoughts	Yes	No
79. I cry easily	Yes	No
80. I am a good person	Yes	No

Appendix M: Demographic Information Sheet

Parent Report

For each question, please write your answers in the space provided and circle the best response for the questions with answer choices.

Date: _____

Parent Completing Questionnaire: a) Biological Mother
b) Biological Father
c) Step-Mother
d) Step-Father
e) Adopted Mother
f) Adopted Father
g) Foster Mother
h) Foster father
i) Other (Please explain) _____

These questions pertain to your child:

Birthday _____

Age in Years _____

Sex _____

Grade in school _____

Ethnic Background (optional) _____

1. The child is the: a) Youngest
b) Middle
c) Oldest
d) Only Child

2. Number of child's biological siblings: a) None
b) 1
c) 2
d) 3
e) 4
f) 5
g) greater than 5

3. Number of child's step siblings:
- a) None
 - b) 1
 - c) 2
 - d) 3
 - e) 4
 - f) 5
 - g) greater than 5

4. How long have you lived in the same home with the child:

- a) less than 6 months
- b) 6 months-2 years
- c) 3 years-5 years
- d) greater than 5 years
- e) since birth

5. How long has the child's biological sibling(s) lived in the same home with the child:

- a.) less than 6 months
- b.) 6 months-2 years
- c.) 3 years-5 years
- d.) greater than 5 years
- e.) since birth

Please check here if this does not apply _____

6. How long has the child's step sibling(s) lived in the same home with the child:

- a.) less than 6 months
- b.) 6 months-2 years
- c.) 3 years-5 years
- d.) greater than 5 years
- e.) since birth

Please check here if this does not apply _____

These next questions pertain to the parent(s):

7. a) One parent family (child lives with one parent only)
 b) Two parent family (child lives with two parents)
 c) Other (Please explain) _____

8. Highest Level of Education of Mother _____ Mother's Date of Birth _____

9. Employment Status of Mother:

- a) Employed Full Time
- b) Employed part Time
- c) Full Time Homemaker
- d) In School Full Time
- e) Unemployed
- f) Other (Please explain)_____

10. Occupation of Mother (if working outside the home): _____

11. Marital Status of Mother:

- a) Married
- b) Divorced
- c) Separated
- d) Widowed
- e) Commonlaw
- f) Never Married
- g) Other (Please explain)_____

12. Highest Level of Education of Father:_____ Father's Date of Birth:_____

13. Employment Status of Father:

- a) Employed Full Time
- b) Employed Part Time
- c) Full Time Homemaker
- d) In School Full Time
- e) Unemployed
- f) Other (Please explain)_____

14. Occupation of Father (if working outside of the home):_____

15. Marital Status of Father:

- a) Married
- b) Divorced
- c) Separated
- d) Widowed
- e) Commonlaw
- f) Never Married
- g) Other (Please explain)_____

16. Family Annual Income (approx.)_____

These next questions refer to your child's experience with pain:

17. My child has been diagnosed by a professional with (please circle):

- a.) Recurrent Abdominal Pain
- b.) Stomach Pain (other)
Please specify: _____
- c.) Migraine headaches
- d.) Headache (other)
Please specify: _____
- e.) No diagnosis made
- f.) Other type of pain
Please specify: _____

My child was approximately _____ years old when he/she began experiencing

_____ pain. (Please fill in the blanks)

18. Has your child ever been prescribed medication to relieve pain? Yes____No____

19. Does your child currently take medication to relieve pain? Yes____No____

20. If you responded YES to question #18, what form of medication is your child currently taking?

- a) Oral
- b) Injection
- c) Suppository
- d) Patch
- e) Other (please explain):_____

21. In the PAST 2 WEEKS, how many times has your child experienced stomach/abdominal pain? _____Times

If ZERO times, then how many times in the past 3 months? _____Times

22. Is the number of times your child experienced stomach/abdominal pain in the PAST 2 WEEKS typical or usual? _____YES _____NO

23. In the PAST 2 WEEKS, how many times has your child experienced headache? _____Times

If ZERO times, then how many times in the past 3 months? _____Times

24. Is the number of times your child experienced headache in the PAST 2 WEEKS

typical or usual? _____ YES _____ NO

25. Approximately how many times a month does your child have stomach (abdominal) pain? _____ Times

26. Approximately how many times a month does your child have headache? _____ Times

27. Is your child experiencing pain today? _____ Yes _____ No

a) If 10 is the highest amount of pain and 1 is the lowest amount of pain, circle what your child's pain is today.

1 2 3 4 5 6 7 8 9 10

28. Please circle any of the following illnesses that your child has had from birth to present:

- | | |
|------------------|----------------------------------|
| 1. convulsions | 5. measles |
| 2. head injuries | 6. sight problems |
| 3. operations | 7. Other (please specify): _____ |
| 4. chicken pox | |

29. Has pain interfered with your child's schoolwork? _____ Yes _____ No

30. Has pain interfered with your child's social relationships? _____ Yes _____ No
(e.g., playing with friends, sports, hobbies)

31. In the past two weeks, has your child missed school because of his/her pain?

_____ Yes _____ No

The next questions refer to the parent's pain experiences:

32. Are you experiencing pain today? _____Yes _____No

a.) If 10 is the highest pain you have ever experienced and 1 is the lowest pain, circle what your pain is today.

1 2 3 4 5 6 7 8 9 10

33. Have you experienced pain in the past week? _____Yes _____No

a.) If 10 is the highest pain you have ever experienced and 1 is the lowest pain, circle what your pain was this week.

1 2 3 4 5 6 7 8 9 10

34. Is the pain you experienced in the past week typical? _____Yes _____No

a.) If No, was the pain: 1. HIGHER or 2. LOWER than usual? (Please circle)

35. Do you have chronic pain? _____Yes _____No

If you answered NO, go to question # 36

36. If you have chronic pain, is it the result of an accident? _____Yes _____No

37. Has chronic pain interfered with your work? _____Yes _____No

38. Have you ever been prescribed medication to relieve pain? _____Yes _____No

39. Have you ever taken medication for depression? _____Yes _____No

40. Have you ever been treated at a pain clinic? _____Yes _____No

If yes, what kind of pain? _____

41. Do you currently take medication to relieve pain? _____Yes _____No

42. What was the *worst* pain you experienced in the past week? (please circle one of the following):

- a) Headache
- b) Back pain
- c) Neck pain
- d) Joint pain
- e) Muscle
- f) Tooth ache
- g) Ear ache
- h) Internal pain
- i) Other (please explain): _____

a.) If 10 is the highest pain and 1 is the lowest pain, circle what your *worst* pain was in the past week.

1 2 3 4 5 6 7 8 9 10

Appendix N: Coping Strategies Questionnaire (CSQ)

Date: _____

Family #: _____

INSTRUCTIONS: Individuals who experience pain have developed a number of ways to cope, or deal, with their pain. These include saying things to themselves when they experience pain, or engaging in different activities. Below are a list of things that individuals have reported doing when they feel pain. For each activity, we want you to indicate, using the chart below, how much you engage in that activity when you are experiencing pain, where a 0 indicates you never do that when you have pain, a 3 indicates you sometimes do that when you are experiencing pain, and a 6 indicates you always do it when you are experiencing pain. *Please write the numbers you choose in the blanks beside the activities.* Remember, you can use any point along the scale.

0	1	2	3	4	5	6
Never do that			Sometimes do that			Always do that

When I feel pain.....

- _____ 1) I try to feel distant from the pain, almost as if the pain was in somebody else's body.
- _____ 2) I leave the house and do something, such as going to the movies or shopping.
- _____ 3) I try to think of something pleasant.
- _____ 4) I don't think of it as pain but rather as a dull or warm feeling.
- _____ 5) It's terrible and I feel it's never going to get any better.
- _____ 6) I tell myself to be brave and carry on despite the pain.
- _____ 7) I read.
- _____ 8) I tell myself that I can overcome the pain.
- _____ 9) I count numbers in my head or run a song through my mind.
- _____ 10) I just think of it as some other sensation, such as numbers.

0	1	2	3	4	5	6
Never do that			Sometimes do that			Always do that

When I feel pain.....

- _____ 11) It's awful and I feel that it overwhelms me.
- _____ 12) I play mental games with myself to keep my mind off the pain.
- _____ 13) I feel my life isn't worth living.
- _____ 14) I know someday someone will be here to help me and it will go away
for a while.
- _____ 15) I pray to God it won't last long.
- _____ 16) I try not to think of it as my body, but rather as something separate
from me.
- _____ 17) I don't think about the pain.
- _____ 18) I try to think years ahead, what everything will be like after I've
gotten rid of the pain.
- _____ 19) I tell myself it doesn't hurt.
- _____ 20) I tell myself I can't let the pain stand in the way of what I have to do.
- _____ 21) I don't pay any attention to the pain.
- _____ 22) I have faith in doctors that someday there will be a cure for my pain..
- _____ 23) No matter how bad it gets, I know I can handle it.
- _____ 24) I pretend it's not there.
- _____ 25) I worry all the time about whether it will end.
- _____ 26) I replay in my mind pleasant experiences in the past.

0	1	2	3	4	5	6
Never do that			Sometimes do that			Always do that

When I feel pain.....

- _____ 27) I think of people I enjoy doing things with.
- _____ 28) I pray for the pain to stop.
- _____ 29) I imagine that the pain is outside of my body.
- _____ 30) I just go on as if nothing happened.
- _____ 31) I see it as a challenge and don't let it bother me.
- _____ 32) Although it hurts, I just keep on going.
- _____ 33) I feel I can't stand it anymore.
- _____ 34) I try to be around other people.
- _____ 35) I ignore it.
- _____ 36) I rely on my faith in God.
- _____ 37) I feel like I can't go on.
- _____ 38) I think of things I enjoy doing.
- _____ 39) I do anything to get my mind off the pain.
- _____ 40) I do something I enjoy, such as watching TV or listening to music.
- _____ 41) I pretend it's not a part of me.
- _____ 42) I do something active, like household chores or projects.

43.) Based on all the things you do to cope, or deal with, your pain, on an average day, how much control do you feel you have over it? Please circle the appropriate number. Remember, you can circle any number along the scale.

0	1	2	3	4	5	6
No control			Some control			Complete control

44.) Based on all the things you do to cope, or deal with, your pain, on an average day, how much are you able to decrease it? Please circle the appropriate number.

0	1	2	3	4	5	6
Can't decrease it at all			Can decrease it somewhat			Can decrease it completely

What pain were you rating these questions on? (please specify): _____

Appendix O: The Beck Depression Inventory (Parent Form)

Date: _____

Family # _____

The next sets of questions are groups of statements. Please read each group of statements carefully. Then pick out one statement in each group, which best describes the way you have been feeling the past week, including today. Circle the number beside the statement you picked. If several statements in the group seem to apply equally well, **CIRCLE EACH ONE**. Be sure to read all the statements in each group before making your choice.

1. 0 I do not feel sad.
 1 I feel sad.
 2 I am sad all the time and I can=t snap out of it.
 3 I am so sad or unhappy that I can=t stand it.

2. 0 I am not particularly discouraged about the future.
 1 I feel discouraged about the future.
 2 I feel I have nothing to look forward to.
 3 I feel that the future is hopeless and that things cannot improve.

3. 0 I do not feel like a failure.
 1 I feel that I have failed more than the average person.
 2 As I look back on my life, all I can see is a lot of failures.
 3 I feel I am a complete failure as a person.

4. 0 I get as much satisfaction out of things as I used to.
 1 I don't enjoy things the way I used to.
 2 I don't get real satisfaction out of anything anymore.
 3 I am dissatisfied or bored with everything.

5. 0 I don't feel particularly guilty.
 1 I feel guilty a good part of the time.
 2 I feel guilty most of the time.
 3 I feel guilty all of the time.

6. 0 I don't feel I am being punished.
1 I feel I may be punished.
2 I expect to be punished.
3 I feel I am being punished.

7. 0 I don't feel disappointed in myself.
1 I am disappointed in myself
2 I am disgusted with myself.
3 I hate myself.

8. 0 I don't think I am any worse than anybody else.
1 I am critical of myself for my weaknesses or mistakes.
2 I blame myself all the time for my failure.
3 I blame myself for everything bad that happens.

9. 0 I don't have any thoughts of killing myself.
1 I have thoughts of killing myself, but I would never carry them out.
2 I would like to kill myself.
3 I would kill myself if I had the chance.

10. 0 I don't cry anymore than usual.
1 I cry more than I used to.
2 I cry all the time now.
3 I used to be able to cry, but now I can't cry even though I want to.

11. 0 I am no more irritated than I ever am.
1 I get annoyed or irritated more easily than I used to.
2 I feel irritated all the time now.
3 I don't get irritated at all by the things that used to irritate me.

12. 0 I have not lost interest in other people.
1 I am less interested in other people than I used to be.
2 I have lost most of my interest in other people.
3 I have lost all my interest in other people.

13. 0 I make decisions about as well as I ever could.
 1 I put off making decisions more than I used to.
 2 I have greater difficulty in making decisions than before.
 3 I can't make decisions at all anymore.
14. 0 I don't feel I look any worse than I used to.
 1 I am worried that I am looking old and unattractive.
 2 I feel that there are permanent changes in my appearance that make me look unattractive.
 3 I believe that I look ugly.
15. 0 I can work about as well as before.
 1 It takes me extra effort to get started at doing something.
 2 I have to push myself very hard to do anything.
 3 I can't do any work at all.
16. 0 I can sleep as well as usual.
 1 I don't sleep as well as I used to.
 2 I wake up 1-2 hours earlier than I used to and find it hard to get back to sleep.
 3 I wake up several hours earlier than I used to and cannot get back to sleep.
17. 0 I don't get more tired than usual.
 1 I get tired more easily than I used to.
 2 I get tired from doing almost everything.
 3 I am too tired to do anything.
18. 0 My appetite is no worse than usual.
 1 My appetite is not as good as it used to be.
 2 My appetite is much worse now.
 3 I have no appetite at all anymore.
19. 0 I haven't lost much weight, if any, lately.
 1 I have lost more than 5 pounds.
 2 I have lost more than 10 pounds.
 3 I have lost more than 15 pounds.
- I am purposely trying to lose weight.
 _____ Yes _____ No

20. 0 I am no more worried about my health than usual.
1 I am worried about my problems such as aches and pains; or upset stomach; or constipation.
2 I am very worried about physical problems and it's hard to think of much else.
3 I am so worried about my physical problems, that I cannot think about anything else.
21. 0 I have not noticed any recent changes in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

Appendix P: Family Illness Questionnaire (FIQ)

Parent Form: Headache

Date: _____

Family # _____

Has anyone in your family ever had headache problems (for example, migraine, cluster, tension, or other problems involving headache)?

If yes, for EACH PERSON in the family who has had headache pain, answer the question below. If no, please Check here: _____

1. Person's relationship to your child: _____

Type of headache problem: _____

Is this person living? a) Yes b) No

Has he/she had the problem in the last 12 months? a) Yes b) No

Has he/she had the problem before the last 12 months? a) Yes b) No

Does he/she live with you? a) Yes b) No

2. Person's relationship to your child: _____

Type of headache problem: _____

Is this person living? a) Yes b) No

Has he/she had the problem in the last 12 months? a) Yes b) No

Has he/she had the problem before the last 12 months? a) Yes b) No

Does he/she live with you? a) Yes b) No

3. Person's relationship to your child: _____

Type of headache problem: _____

Is this person living? a) Yes b) No

Has he/she had the problem in the last 12 months? a) Yes b) No

Has he/she had the problem before the last 12 months? a) Yes b) No

Does he/she live with you? a) Yes b) No

4. (If applicable, please list additional persons and provide information in the space below)

Has anyone in your family recently (in the past 12 months) had any other serious health problems or disability? For EACH PERSON, answer the questions below. Include acute problems such as pneumonia or an injury and chronic problems such as diabetes:

5. Person's relationship to your child: _____

Health problem: _____

Does he/she live with you? a) Yes b) No

6. Person's relationship to your child: _____

Health problem: _____

Does he/she live with you? a) Yes b) No

7. Person's relationship to your child: _____

Health problem: _____

Does he/she live with you? a) Yes b) No

8. (List additional persons and provide information on the back of this sheet)

Appendix Q: Pain Coping Questionnaire (PCQ)

Parent Form

Age (in years) _____

Sex (circle): Male Female

Everyone has had a time when they have been hurt or in pain for a few hours or longer. For example, you might have had a headache, a stomachache, a bad muscle pull, pain in your joints (elbow, knee), back pain, an earache, etc. Below are some things that people might say, do, or think when they are hurt or in pain. We are interested in the things your child does when he/she is in pain for a few hours or days.

Circle one number for each question to show how often your child does each thing listed:

1=never, 2=hardly ever, 3=sometimes, 4=often, or 5=very often.

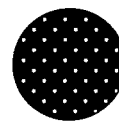
	Never	Hardly ever	Sometimes	Often	Very often
WHEN MY CHILD IS HURT OR IN PAIN FOR A FEW HOURS OR DAYS, HE/SHE.....					
1) Asks questions about the pain.	1	2	3	4	5
2) Focuses on the pain and see how he/she can make it better.	1	2	3	4	5
3) Talks to a friend about how he/she feels.	1	2	3	4	5
4) Tells his/her self, don't worry everything will be ok.	1	2	3	4	5
5) Go and play.	1	2	3	4	5
6) Forget the whole thing.	1	2	3	4	5
7) Say mean things to people.	1	2	3	4	5
8) Worry that he/she will always be in pain.	1	2	3	4	5
9) Ask a nurse or doctor questions.	1	2	3	4	5
WHEN MY CHILD IS HURT OR IN PAIN FOR A FEW HOURS OR DAYS HE/SHE.....					
10) Think about what needs to be done to make the pain better.	1	2	3	4	5
11) Talk to someone about how he/she is feeling.	1	2	3	4	5

	Never	Hardly ever	Sometimes	Often	Very often
WHEN MY CHILD IS HURT OR IN PAIN FOR A FEW HOURS OR DAYS, HE/SHE.....					
12) Say to him/her self, be strong.	1	2	3	4	5
13) Do something fun.	1	2	3	4	5
14) Ignore the pain.	1	2	3	4	5
15) Argue or fight.	1	2	3	4	5
16) Keep thinking about how much it hurts.	1	2	3	4	5
17) Find out more information.	1	2	3	4	5
18) Think of different ways to deal with the pain.	1	2	3	4	5
19) Tell someone how he/she feels.	1	2	3	4	5
20) Tell him/her self, it's not so bad.	1	2	3	4	5
21) Do something he/she enjoys.	1	2	3	4	5
22) Try to forget it.	1	2	3	4	5
23) Yell to let off steam.	1	2	3	4	5
24) Think that nothing helps.	1	2	3	4	5
25) Learn more about how my his/her body works.	1	2	3	4	5
26) Figure out what he/she can do about the pain.	1	2	3	4	5
27) Talk to a family member about how he/she feels.	1	2	3	4	5
28) Say to him/her self, things will be ok.	1	2	3	4	5
29) Do something active.	1	2	3	4	5
WHEN MY CHILD IS HURT OR IN PAIN FOR A FEW HOURS OR DAYS HE/SHE.....					
30) Puts the pain out of his/her mind.	1	2	3	4	5
31) Gets mad and throws or hits something.	1	2	3	4	5
32) Thinks that the pain will never stop.	1	2	3	4	5
33) Try different ways to make the pain better until he/she find one that works.	1	2	3	4	5

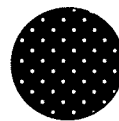
	Never	Hardly ever	Sometimes	Often	Very often
WHEN MY CHILD IS HURT OR IN PAIN FOR A FEW HOURS OR DAYS, HE/SHE.....					
34) Let his/her feelings out to a friend.	1	2	3	4	5
35) Tell him/her self, he/she can handle anything that happens.	1	2	3	4	5
36) Do something to take his/her mind off the pain.	1	2	3	4	5
37) Don't think about the pain.	1	2	3	4	5
38) Curse or swear out loud.	1	2	3	4	5
39) Worry too much about the pain.	1	2	3	4	5

People have different feelings when they are hurt or in pain. For each of the 7 feelings listed below, circle the one response that shows how your child feels when he/she is hurt or in pain for a few hours or days. In other words, circle one of the following for each question: Not at all, A little, Pretty, or Really.

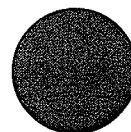
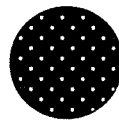
Happy

Not at all
HappyA little
HappyPretty
HappyReally
Happy

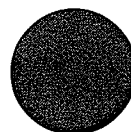
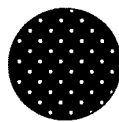
Sad

Not at all
SadA little
SadPretty
SadReally
Sad

Excited

Not at all
ExcitedA little
ExcitedPretty
ExcitedReally
Excited

Angry



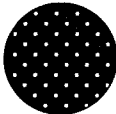



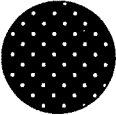



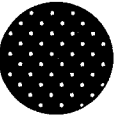



Not at all

A little

Pretty

Really

	Angry	Angry	Angry	Angry
Calm/ Relaxed				
	Not at all Calm/ Relaxed	A little Calm/ Relaxed	Pretty Calm/ Relaxed	Really Calm/ Relaxed
Scared/ Afraid				
	Not at all Scared/ Afraid	A little Scared/ Afraid	Pretty Scared/ Afraid	Really Scared/ Afraid
Nervous/ Worried				
	Not at all Nervous/ Worried	A little Nervous/ Worried	Pretty Nervous/ Worried	Really Nervous/ Worried

Dealing with Pain

1) When your child is hurt or in pain for a few hours or days, how often does he/she think they can do something to change it?

Never Hardly Ever Sometimes Often Very Often

2) Being hurt or in pain can be hard or easy to deal with. How hard or easy is it for your child to deal with being in pain?

Really Easy Kind of Easy Kind of Easy/
Kind of Hard Kind of Hard Really Hard

3) How often does your child think he/she can do something to change his/her moods or feelings when they are hurt or in pain?

Never Hardly Ever Sometimes Often Very Often

Please answer the next seven questions in terms of how your child's problems with pain turned out or how your child felt about being in pain after it was over. How your child's problems with hurt/ pain turned out: In terms of when your child has been hurt or in pain for a few hours or a few days, how much do you agree with the following statements.

1 = I strongly disagree with the statement	Strongly Disagree	Sort of Disagree	Agree/Disagree	Sort of Agree	Strongly Agree
2 = I sort of disagree with the statement					
3 = I agree and disagree with the statement					
4 = I sort of agree with the statement					
5 = I strongly agree with the statement					
1) He/she handled the pain well.	1	2	3	4	5
2) He/she learned from this problem. ..	1	2	3	4	5
3) He/she felt better about him/her self. ..	1	2	3	4	5
4) He/she handled his/her feelings well in dealing with the pain.	1	2	3	4	5
5) He/she did a good job of solving the problems that came up. ..	1	2	3	4	5
6) He/she became a stronger person . .	1	2	3	4	5
7) The things that he/she did when he/she was in pain were helpful. ...	1	2	3	4	5

Pain Experiences

Which of the following different kinds of hurt or pain were you thinking about while answering the questions above? Circle as many of the different types of pain you were thinking about.

- a) headache b) stomach ache c) muscle pain d) joint pain (e.g., elbow, knee)
- e) back pain f) earache g) (for women) menstrual pain
- h) other _____

Appendix R: Functional Disability Inventory (FDI)

Parent Form

Date: _____

Family # _____

When people are sick or not feeling well it is sometimes difficult for them to do their regular activities. In the last few days, would your child have had any physical trouble or difficulty doing these activities?

1. Walking to the bathroom.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

2. Walking up stairs.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

3. Doing something with a friend (for example, playing a game).

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

4. Doing chores at home.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

5. Eating regular meals.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

6. Being up all day without a nap or rest.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

7. Riding the school bus or traveling in the car.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

Remember, you are being asked about difficulty due to physical health.

8. Being at school all day.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

9. Doing the activities in gym class (or playing sports).

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

10. Reading or doing homework

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

11. Watching TV.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

12. Walking the length of a football field.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

13. Running the length of a football field.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

14. Going shopping.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

15. Getting to sleep at night and staying asleep.

No Trouble	A Little Trouble	Some Trouble	A Lot of Trouble	Impossible
0	1	2	3	4

Appendix S: Coping Strategy Study: Letter to Parents (Headache)

Dear Parent,

Children with chronic pain are confronted with a series of stressful circumstances including the events contributing to the pain condition, dealing with the pain condition itself, undergoing stressful medical procedures, and disruption in social and school relationships. We are presently conducting a research project with children who are experiencing headache. We are interested in learning the styles of coping that children with headache use and to evaluate the effectiveness of these strategies in alleviating pain. This is important because early coping experiences resulting in desirable or positive adjustment may foster the likelihood of effective stress management in adulthood.

Specifically, we will be investigating the ways that both parent and child manage painful experiences. Your participation in this study will be valuable to you and your child because this information can help us to better understand the styles of childhood coping related to positive adjustment as well as providing information for designing optimal treatment programs.

I would appreciate your participation by asking you and your child to complete several questionnaires, which are commonly used to measure coping in children and adults. We can schedule a time convenient for you to complete the questionnaires. Your participation is anticipated to take sixty minutes.

I would also like to inform you that your participation is completely voluntary and will *not* affect any medical treatment that your child receives now or in the future at the Manitoba Clinic or any other clinic. You and your child may also withdraw from the study at any time. With the exception of sharing certain information with your child's pediatrician at the Manitoba Clinic, the information will be strictly confidential and used only for research purposes. I have taken the following measure to ensure anonymity. No names will appear on the questionnaires, only a family identification number.

I would very much appreciate your cooperation and time. If interested, please phone me at the Psychological Service Center (P.S.C.) located at the University of Manitoba at **474-9222**. If necessary, please leave your name (first name) and telephone number and I will return your call as soon as possible. You can also include your telephone number on the permission slip for me to contact you. This study is for partial fulfillment for my Master of Arts degree. In order to participate in the study, you will need to sign the consent form that is attached. Thank you.

Debra L. Konyk, B.A. (Hons.)

Department of Psychology,
University of Manitoba

Michael R. Thomas, Ph.D.,
C. Psych.
Supervising Psychologist
Department of Psychology

Appendix T: Coping Strategy Study: Letter to Parents (Controls)

Dear Parent,

Children with chronic pain are confronted with a series of stressful circumstances including the events contributing to the pain condition, dealing with the pain condition itself, undergoing stressful medical procedures, and disruption in social and school relationships. We are presently conducting a research project that will examine the styles of coping that children with headache as well as children without current or past chronic pain problems use to manage painful experiences and to evaluate the effectiveness of these strategies in alleviating pain. Although your child does not have a pain problem, children experience pain in everyday situations such as scraping their knee, getting a cut, or falling off their bicycle. These situations are important to examine due to the high frequency that children encounter these types of painful experiences.

Specifically, we will be investigating the ways that both parent and child manage painful experiences. Your participation in this study will be valuable to you and your child because this information can help us to better understand the styles of childhood coping related to positive adjustment as well as providing information for designing optimal treatment programs. In addition, at the end of the study we will schedule a feedback session to discuss the questionnaire results for both your child and yourself.

I would appreciate your participation by asking you and your child to complete several questionnaires, which are commonly used to measure coping in children and adults. We can schedule a time convenient for you to complete the questionnaires. Your participation is anticipated to take sixty minutes.

I would also like to inform you that your participation is completely voluntary and will *not* affect any medical treatment that your child receives now or in the future at the Manitoba Clinic or any other clinic. You and your child may also withdraw from the study at any time. With the exception of sharing certain information with your child's pediatrician at the Manitoba Clinic, the information will be strictly confidential and used only for research purposes. I have taken the following measure to ensure anonymity. No names will appear on the questionnaires, only a family identification number.

I would very much appreciate your cooperation and time. If interested, please phone me at the Psychological Service Center (P.S.C.) located at the University of Manitoba at **474-9222**. If necessary, please leave your name (first name) and telephone number and I will return your call as soon as possible. This study is for partial fulfillment for my Master of Arts degree. In order to participate in the study, you will need to sign a consent form allowing your child and yourself to participate. We will complete this form during the appointment. It is also necessary that your child provide verbal consent to participate in the study. Thank you for your time and consideration.

Debra L. Konyk, B.Sc.; B.A. (Hons.)
Department of Psychology
University of Manitoba

Michael R. Thomas, Ph.D., C. Psych.
Supervising Psychologist, Dept. of
Psychology
University of Manitoba

Appendix U: Consent Form for Participation

1. I have had the purpose of the *coping strategy study* letter explained to me. I understand the contents of this letter and have received a copy for my own use.

2. NAME OF CHILD

I am the parent or legal guardian of the child named above.

Yes _____ No _____

I give permission for the child named above to participate in the study.

Yes _____ No _____

Also, I agree to participate in the study.

Yes _____ No _____

NAME OF PARENT (PLEASE PRINT):

SIGNATURE OF PARENT:

TELEPHONE NUMBER:

SIGNATURE OF RESEARCHER:

DATE: _____

Appendix V: Form of Confidentiality

The following steps must be followed to ensure that all information that is gathered by yourself remains strictly confidential.

A.) Any discussion between yourself and the participants in the study will remain strictly confidential; there will be no mention about what has been discussed outside of the session to anyone, unless:

- 1.) The participant expresses concerns about how the study is being conducted,
- 2.) The participant is upset regarding the content of the questionnaires,
- 3.) There is a concern regarding the participant's safety.

If any of the above 3 issues arise, I will immediately inform Debra Konyk or Dr. M. Thomas using the least amount of identifying information.

B.) Completed questionnaires will be kept in a locked office in the Duff Roblin Building located at the University of Manitoba.

C.) The information gathered in the questionnaire will remain strictly confidential; there will be no discussion of the results to anyone who is not part of the Coping Strategy Study project.

I, _____ understand the role of confidentiality as described to me by the primary investigator of the study, Debra Konyk.

Signature

Date

Appendix W: Debriefing Form

The purpose of this study is to investigate the ways that children with chronic pain problems cope with painful episodes. In particular, we are interested in examining the types of coping strategies used by children with headache in dealing with their pain and to evaluate the effectiveness of these strategies in alleviating pain. In addition, this study will examine the relationship between parent- and child- reports of coping. We are interested in examining the impact of parent coping strategies in managing pain on the child's mechanisms in dealing with their own pain.

I would like to thank you for participating in this study and I hope it has been a positive experience for you. The results to the study will be available in August, 2002, and confidentially will be maintained. If you have any comments or further questions, please contact Dr. Michael Thomas at 474-9633.

Thank you for your time and cooperation. Your participation is greatly valued.

Sincerely,

Debra Konyk

Appendix X

Pain Coping Questionnaire: Coping Factor Scoring Procedures

• Approach Coping = Mean (questions 1, 2, 3, 4, 9, 10, 11, 12, 17, 18, 19, 20, 25, 26, 27, 28, 33, 34, 35)

Problem-Focused Avoidance Coping = Mean (questions 5, 6, 13, 14, 21, 22, 29, 30, 36, 37)

Emotion-Focused Avoidance Coping = Mean (questions 7, 8, 15, 16, 23, 24, 31, 32, 38, 39)