

Practice Perspective Protocol

Kids B.E.A.R. Pain

A Pediatric Chronic Pain Protocol

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Abstract

Patients with chronic pain utilize health care services up to five times the rate of the general population while pediatric chronic pain admissions from 2004-2010 increased by 831% (Coffelt et al., 2013; Reddy, 2006). Further complicating this public health epidemic are comorbid conditions resulting in poor sleep, depression, and anxiety as well as psycho-social problems related to school truancy and poor social networks. Caregiver attitude towards pain may also negatively contribute to the illness, i.e., caregivers may increase chronic pain and functional disability by promoting sedentary lifestyles due to fear avoidance behaviors (Palermo et al., 2014). Interventions are needed to assist adolescents that experience chronic pain. The following is a detailed overview of the Kids B.E.A.R. Pain intervention protocol, a support program for pediatric patients experiencing chronic pain and their caregivers.

Keywords

Pediatric, chronic pain, recreational therapy, intervention protocol

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Introduction

The Kids B.E.A.R. (**B**ecoming **E**nergized and **R**ejuvenated in Pain) Pain Protocol uses a 1-week residential therapeutic camp design embedded with clinically proven techniques in an environment that may be more conducive to improved compliance than a traditional clinic setting. The program design includes a 5-day residential component for adolescent patients with chronic pain finishing with a 3-day family weekend to inform caregivers of the skills taught and to enhance family functioning. Kids B.E.A.R. Pain Protocol is a therapeutic program with an aim of improving psychosocial functioning to enhance engagement in everyday activities (Huguet & Miró, 2008) while experiencing pain. The following paper describes in detail the Kids B.E.A.R. Pain Protocol through the lens of the recreational therapy process of assessment, planning, implementation, and evaluation for five adolescent female patients that took part in this program.

Pediatric Pain Literature

Pediatric chronic pain is a common clinical concern, affecting 1.7 million children and adolescents in the United States and costing \$19.5 billion annually to assess and treat (Goenewald et al., 2014). From 2004-2010, pediatric chronic pain admissions increased by 831% (Coffelt et al., 2013; Reddy, 2006). Median prevalence estimates range from 11%–38%, with 3%–5% of youth estimated to experience significant pain-related disability (Hassett et al., 2013; Kashikar-Zuck et al., 2011). Youth with chronic pain experience decreased academic, physical, and social functioning, changes in sleep, mood, and anxiety (Huguet & Miro, 2008; King et al., 2011), and pain-specific maladaptive cognitive patterns such as catastrophizing (magnification of the actual threat from pain) according to Quartana et al. (2009), and kinesiophobia (the fear of movement), if pain is anticipated (McGarrigle et al., 2020; Vervoort et al., 2006). The use of opioid therapy for pain relief comes with several side effects such as constipation, comorbidities in the psychiatric domain, possible dependency, depression of respiratory system, and cognitive problems (Berde & Nurko, 2008; Wren et al., 2019). Due to this large pain burden and risk profile for opioid therapy, new programs are needed that target increasing active lifestyles and engagement in non-pharmacological means for chronic pain management. Although limited in the literature, the non-opiate related treatment approaches that show the most promise take a rehabilitative approach (Claus et al., 2022) and include cognitive behavioral therapy (Noel et al., 2012), yoga (Evans et al., 2013), physical activity (Ostelo & Vlaeyen, 2008) mindfulness activities (Jastrowski Mano et al., 2013), cognitive behavioral programs for both the youth and caregiver (Carter et al., 2013), and include a family program component (Harris et al., 2013).

Chronic pain is a significant stressor that primarily threatens, interrupts, and eventually interferes with daily tasks of life, becoming associated with stress, anxiety, and depression (Van Damme et al., 2008). These daily living activities include self-care, mobility, social, academic functioning, and household responsibilities. Notable hindrances to youth can include fear of pain and pain avoidance while caregiver responses to youths' pain may contribute to increased disruptions in physical, social, and emotional functioning across the lifespan (Pielech et al., 2017). One study reported that more than two-thirds of the 749 respondents reported restrictions in daily activities due to pain, about 40% reported negative effects of pain on school attendance (Logan et al., 2012), maintenance of social contacts, decreased involvement in family

social activities, and increased utilization of health services (Roth-Isigkeit et al., 2005). When caregivers express a high level of fear-avoidance or respond to a youth's pain, this increases the levels of distress and disability (Guite et al., 2011).

Family-based Approaches to Pediatric Chronic Pain

Social Learning Theory suggests that when certain illness behaviors or pain responses receive social rewards, these behavior patterns are maintained and strengthened (Levy et al., 2007) (i.e., caregivers may unconsciously reward “pain behavior” instead of helping the youth to find ways to cope with ongoing pain while still participating in activities). Reinforcement examples include, increased expression of caregiver support or concern, more time with caregivers, or enabling avoidance of stressors such as staying home from school. Furthermore, caregivers, such as parents or guardians, who have strong negative thoughts about pain and are overprotective of their youth while in pain, may unwittingly reinforce requests to remain home from school or other social functions. This pattern may be further reinforced if school absence is experienced as an avoidance of a negative or uncomfortable situation, for example being in school with pain. Caregivers may also engage in certain styles of thinking, including catastrophizing, (i.e., thinking of the worst-case scenario, rumination, and exaggeration of anticipated or actual pain [Lewandowski et al., 2010; Quartana et al., 2009]), and overly protective parental styles that are more likely to interpret teachers' or schools' responses to their youth's condition as unsympathetic, overly demanding, or disbelieving. Palermo (2009) emphasizes the importance of caregiver modeling, supporting independence, and enhancing communication with the child. Due to the importance of caregivers and guardians in coping with pediatric pain, a family component was included in the Kids B.E.A.R. Pain Protocol in addition to a five-day residential component for adolescent female patients.

Program Purpose

Investigations have revealed the impact perceived pain has on the daily lives and activities of youth (Roth-Isigkeit et al., 2005). It is relevant that caregivers, teachers, and health care professionals assist these youth in managing pain, so they can be self-efficient in positively intervening in their conditions and respond to life's cues. To reverse trends of increasing disability, a multidisciplinary rehabilitation approach is highly recommended for youth with chronic pain. Disciplines involved in this care usually include physical therapists, occupational therapists, psychologists, psychiatrists and recreational therapists. The Kids B.E.A.R. Pain Program plan is geared toward coping with pain through a rehabilitative approach including diversion of attention given to pain and adaptive strategies to allow youth with pain to more fully participate in age-appropriate activities (Loeser & Melzack, 1999) while experiencing pain. Interventions for the Kids B.E.A.R. Pain Protocol were selected to be engaging activities aimed at improving the ability to maintain participation while still experiencing discomfort and distress from pain (Pielech et al., 2017). Teaching positive and constructive coping strategies within the context of a safe and supportive camp environment was thought to be a novel way to engage with youth, infusing the learning process with fun and challenge. The camp approach was chosen as a pilot to reinforce the rehabilitative treatment approach taken during the normal course of therapies in the pediatric pain clinic. Learning to cope with chronic pain while staying engaged in camp activities was a key element of the Kids B.E.A.R. Protocol (Van Damme et al., 2008).

Theoretical Foundation of the Kids B.E.A.R. Pain Protocol

Gate-Control Theory of Pain (GCT)

Psychological approaches for the management of chronic pain initially gained popularity in the late 1960s with the emergence of Melzack and Wall's (1965) Gate-Control Theory (GCT). It was the first theory to introduce the concept that pain experience is not simply the result of a linear process that begins with the stimulation of pain pathways in the peripheral nervous system and ends with the experience of pain in the central nervous system. Rather, neural impulses that signal pain from the peripheral nervous system are subject to several variations in the spinal cord by a "gate like" mechanism in the dorsal horn of the spinal cord (Melzack & Wall, 1965). The gate mechanism is influenced and modulated by emotions, cognitive state, and past experiences. While this theory is based on physiology (functioning), it explains both sensory and psychological aspects of pain perception. Melzack and Wall (1965) proposed the concept of a central control trigger consisting of nerve impulses that descend from the brain and influence the gating mechanism. They predicted that this system consists of large neurons that conduct impulses rapidly. These impulses from the brain affect the opening and closing of the gate in the spinal cord and are affected by cognitive processes. Simply put, the authors believe that the experience of pain is influenced by beliefs and prior experience, i.e., pain has sensory components as well as motivational and emotional components. Anxiety, worry, and depression, can increase pain by affecting the central control trigger, thus opening the gate. Conversely, distraction, relaxation, and positive emotions can cause the gate to close, thereby decreasing pain (Campbell et al., 2013). Although some of the interventions in the Kids B.E.A.R. Pain Protocol may be seen as helping to "close the gate," the focus of this program is to assist patients to cope with existing and chronic pain rather than to alleviate pain altogether. Thus, a more nuanced theoretical approach is needed given the difficulty with engaging current patients in the pediatric chronic pain clinic that have become resistant to treatment due to their inability to alleviate pain well enough to participate in life activities.

Acceptance and Commitment Therapy Model (ACT)

More recent studies have focused on behavioral motivation in the pursuit of adaptation in the hopes of reengaging youth to a new valuable and realistic set of goals that will impact their well-being and quality of life (Esteve et al., 2007). The Acceptance and Commitment Therapy (ACT) Model focuses on a willingness to experience adversity and the readiness to engage in valued activities despite adversity (Vlaeyen et al., 2002; Vowles & McCracken, 2008). This approach aims to increase engagement in activities that bring meaning, vitality and value to the lives of youth while they are experiencing chronic pain. Recognizing there are natural responses to pain that may not be the most adaptive (e.g., withdrawing from participation), this model assumes a philosophical angle of proffering a practical and functional contextualism (Zettle, 2005). This model is aimed at curating effective adaptive and functional goal-oriented behavior, not just for the immediate, but over the long term. The ACT model has been proven successful in its use with a wide range of pediatric populations with chronic pain (Kemani et al., 2018; Martin et al., 2021), other medical disorders, conditions reporting pain as its key symptom (Arch & Craske, 2008; Casier et al., 2011; Wicksell et al., 2009), and relates to caregivers' responses to the youth experiencing pain (McCracken &

Vowles, 2007; Vowles et al., 2014) (e.g., caregivers' responses may provide a barrier for the youth in their acceptance of pain and discomfort).

Based on the ACT model rather than GCT, Kids B.E.A.R. Pain Protocol is designed with therapeutic activities that address accepting pain rather than eliminating it, facilitating effective responses to difficult or aversive experiences of pain through coping skills, and being involved and engaged in important areas of life maintained at a level that meets the sufficient needs of the youth. Instead of focusing on pain control and avoidance, an acceptance and commitment approach provides a framework for healthy and balanced pain management in youth with chronic pain through engaging recreational therapy activities supervised by a recreational therapist and child psychologist team.

Patient Protocol Background

Patient

Females are at higher risk for chronic pain (Keogh & Arendt-Nielsen, 2004; Sorge & Totsch, 2017) as compared to male peers. As a result, this protocol was focused on five female adolescents from the Midwest between the ages of 12–17 with a variety of diagnoses leading to chronic pain such as amplified musculoskeletal pain syndrome (AMPS), chronic headaches, chronic stomach pain, complex regional pain syndrome (CRPS), pain in limbs due to injury or surgery, arthritis, lupus, systemic medical illnesses, and pain related to sickle cell disease.

All five adolescent patients were associated with a pediatric pain management clinic within a regional pediatric hospital and were invited to participate. A total of five patients and their caregivers volunteered to take part in this pilot program after being made aware of the resource by the child psychologist treating the patients. Criteria for being invited to participate included being between 12–17, having chronic pain, a willingness to participate in the camp, had guardians available for the caregiver weekend, and experienced difficulties with social participation in school and the community activities despite ongoing appointments at the chronic pain clinic. Patients also had to be free of active suicidal ideation, free of serious mental illness, and not actively engaged in a substance use disorder. These criteria were established through psychological interview with one of the authors, a licensed clinical psychologist. Upon acceptance into the program, each patient and their caregiver or guardian filled out a medical history intake form (consistent with American Camp Association forms), a liability form, and a photo release. Once completed, the Certified Therapeutic Recreation Specialist (CTRS®) from the therapeutic camp, reached out to the adolescent patients and their caregivers via e-mail and phone to inform families of the logistics of checking into and attending the program.

Purpose

Though the pediatric pain management clinic works with physicians that prescribe pharmacological pain medications, the clinic was seeking non-pharmacological means to enable these patients to return to a realistic level of normalcy and functionality (i.e., pharmacological medications alone where not successful). The purpose of this program is to provide a recreational therapy-based program in partnership with child psychology that encourages an acceptance of pain, improved coping skills, as well as a return to inclusion in recreational, social, and school-based pursuits. While the

approach at the camp includes similar treatment elements as the traditional hospital clinic, camp was designed to be more fun, and include real-world activities, such as walking, running, hiking, and playing games, than is usually included in the clinic.

Entrance and Exit Requirements for Patient Involvement in the Protocol

Requirements for entry into the program consisted of a current affiliation with the regional pediatric pain management clinic with continued difficulties in attending school (> than 50% of the time) or participating in age appropriate community activities. Upon acceptance into the program, each patient and their caregiver filled out the aforementioned paperwork packet. Once completed and returned to the camp director, the CTRS® from the therapeutic camp program contacted the patients and guardians via e-mail and phone to inform them of the logistics of checking into and attending the Kids B.E.A.R. Pain Protocol and to answer any outstanding questions that they had.

Individual or Group

This is a group-based intervention that seeks to capitalize on the social impact patients may experience through association with similar peers. Patients can compare with one another and understand they are not the only ones going through chronic pediatric pain. For adolescent females, it is unlikely they will have the opportunity to meet or speak to another teen with a similar chronic pain condition (Kohut et al., 2016). The Kids B.E.A.R. Pain Protocol allows for an individual treatment plan to be created for each patient while facilitating this intervention through a supportive group experience.

Frequency and Duration of Intervention Sessions

This protocol includes a Sunday–Friday residential adolescent patient camp experience. During this program, the patients are together at a camp setting with counselors and the camp director without their caregivers. Although the current pilot program enlisted five youth, it is feasible this camp could support upwards of 20–30 total youth. Caregivers are then invited for a Friday–Sunday family weekend at the end of the residential patient experience. In total, the youth are engaged with the program for 7 full days while caregivers participate for three days.

Safety Considerations, Facility and Equipment Requirements

The medical camp follows over 300 safety standards governed through the American Camp Association Accreditation (www.acacamps.org/accreditation). Additionally, the program is supervised by a CTRS®, nurse, and child psychologist. Medical regulations from these three fields are followed throughout including standards of care and medical ethics regularly implemented in more clinical settings such as a hospital (e.g., see American Therapeutic Recreation Association, American Psychological Association, American Nurses Association). The camp has also trained all staff prior to working with patients for a minimum of 1 week, and the child psychologist was viewed as the treatment team lead during the protocol implementation in case of any risk management issue that came up.

Methods of Implementation

A therapeutic camp model (Dawson et al., 2012; Devine et al., 2015) was used for this program and is outlined in detail (see Table 1, pp. 182–184). The main components of a therapeutic camp for this program included social comparison opportunities amongst

campers with similar issues, evidence based interventions, and the inclusion of the recreational therapy process. Individual camp activities were designed in partnership between the child psychologist, camp director, and the recreational therapist. A focus on acceptance of present pain, learning coping skills, and taking part in physical activities were the overarching themes used to design the camp programming.

Patient Outcomes

Ostensibly, a pediatric chronic pain program would be focused on decreasing chronic pain. However, the focus of this program is to manage and accept pain in order to improve quality of life and functionality within social, recreational, and school based settings (Esteve et al., 2007). Although pain was measured via the Pain Self-Efficacy Questionnaire (PSEQ; Nicholas, 1989), a variety of other outcomes were also captured utilizing the Pediatric Quality of Life Inventory (Powers et al., 2003; Varni et al., 2001), Visual Analogue Scale (Varni et al., 1987), Chronic Pain Acceptance Questionnaire, Adolescent Version (McCracken et al., 2010), Bath Pain Questionnaire (Eccleston et al., 2005), Functional Disability Inventory (FDI) (Claar & Walker, 2006; Kashikar-Zuck et al., 2011; Walker & Green, 1991), Spence Children's Anxiety Scale (Spence, et al., 2003), and the Brief Family Assessment Measure (Skinner et al., 2000). These psychosocial instruments were utilized within the structure of the recreational therapy process of assessment, planning individualized treatment goals, implementation of camp activities, and evaluation of any progress patients made. More specifically, the outcomes were captured in the assessment phase as a pre-test and again in the evaluation phase as a post-test and then compared.

Recreational Therapy Process

Assessment

As previously mentioned, a battery of assessments were administrated as part of this protocol. All were associated with typical assessment procedures implemented at the pain clinic in the regional children's hospital patients attended. Assessments were applied to this protocol by establishing a pre-assessment prior to the protocol (1-3 weeks prior), attendance in the protocol, and then a post assessment (1-3 weeks after) using the same battery of assessments listed below:

- Functioning in emotional, social, and school domains was assessed using the subscales of the Pediatric Quality of Life Inventory (PedsQL) Generic Core Scales (Varni et al., 2001). The measure includes 23 self-report items assessing physical (e.g., "It is hard for me to run"), emotional (e.g., "I feel angry"), social (e.g., "Other kids tease me"), and school (e.g., "It is hard to pay attention in class") functioning over the past month. All items are rated on a 5-point Likert scale of 0 ("never") to 4 ("almost always"). Items are then reverse scored and transformed into a 0 to 100 scale, with higher scores reflecting better quality of life. The PedsQL is frequently used in studies of pediatric chronic health conditions, which have shown the measure to be reliable and valid (Powers et al., 2003; Varni et al., 2001). The emotional, social, and school functioning subscales were examined for the current study.
- The Visual Analogue Scale was utilized as a quantitative measure of pain intensity rating on a 0-10 numeric rating scale (Varni et al., 1987). This scale is noted as having moderate to good reliability and validity for clients with disabilities (Boonstra et al., 2008).

- Pain coping style and self-efficacy was measured by the Pain Self-Efficacy Questionnaire (PSEQ; Nicholas, 1989), quantifying patient's ability to cope effectively with pain. There is adequate support for the reliability and validity of this instrument according to Tonkin (2008).
- The Chronic Pain Acceptance Questionnaire, Adolescent Version was implemented to determine any changes in perceived acceptance of their life situation (McCracken et al., 2010). There is evidence for the reliable and valid use of this instrument in adolescents with chronic pain (Wallace et al., 2011).
- Pain and functional outcomes were measured using the caregiver and adolescent version of the Bath Adolescent Pain Questionnaire (Eccleston et al., 2005). It is a 61-item scale validated with 11- to 18-year-olds and measures multiple domains including social functioning, physical functioning, depression, general anxiety, pain specific anxiety, family functioning, and development. This tool has been documented as having appropriate psychometric properties to be utilized with adolescents from the United States (Gagnon et al., 2011).
- The Functional Disability Inventory (FDI) (Walker & Green, 1991) was utilized as a self-report inventory to measure difficulty in performing activities in school, home, recreation, and social interaction. The items are summed to create a total score, with higher scores reflecting greater functional disability. The FDI was found to be reliable and valid in several different pediatric pain populations (Claar & Walker, 2006; Kashikar-Zuck et al., 2011).
- The Spence Children's Anxiety Scale (SCAS) was utilized as a self-report instrument measuring anxiety in adolescents as defined by DSM-IV (Spence et al., 2003). A systematic review of 32 studies confirms this instrument has strong psychometric properties (Orgiles et al., 2016).
- The Brief Family Assessment Measure (Brief FAM) provided an overview of family functioning consisting of three scales to assess general functioning, individual functioning in the family, and the relationship between two family members (Skinner et al., 2000). At least seven studies confirm reliability and validity of this instrument (Hamilton & Carr, 2016).

The measurements obtained from using these scales will be referenced in the planning stage below and discussed further in the evaluation part of the recreational therapy process used for the Kids B.E.A.R. Pain Protocol below.

Planning

A child psychologist, recreational therapist, and camp director worked as a treatment team to determine goals and objectives for the camp as well as appropriate interventions to be implemented during the implementation phase. The team worked together on multiple occasions in the six months prior to the camp taking place to determine goals/objectives and corresponding interventions to be utilized. It was determined that program goals/objectives would be created to be consistent with the current clinical assessments utilized within the clinic in addition to camp specific participation outcomes, and a return to school attendance. The following are overarching goals and corresponding objectives for those three areas of treatment.

Goal 1: Patient Will Improve on Psychosocial Indicators

- Objective 1: After comparing pre and post Peds QoL Health scores, patient will show improvement of at least x 1 point or more.

- Objective 2: After comparing pre and post Peds QoL Feelings scores, patient will show improvement of at least x 1 point or more.
- Objective 3: After comparing pre and post Peds QoL Social scores, patient will show improvement of at least x 1 point or more.
- Objective 4: After comparing pre and post Peds QoL School scores, patient will show improvement of at least x 1 point or more.
- Objective 5: After comparing pre and post FDI scores, patient will show improvement of at least x 1 point or more.
- Objective 6: After comparing pre and post Bath-Social scores, patient will show improvement of at least x 1 point or more.
- Objective 7: After comparing pre and post Bath-Activities scores, patient will show improvement of at least x 1 point or more.
- Objective 8: After comparing pre and post Bath-Depression scores, patient will show improvement of at least x 1 point or more.
- Objective 9: After comparing pre and post Bath-Development, patient will show improvement of at least x 1 point or more.
- Objective 10: After comparing pre and post SCAS General Worries scores, patient will show improvement of at least x 1 point or more.
- Objective 11: After comparing pre and post SCAS General Pain Worries scores, patient will show improvement of at least x 1 point or more.
- Objective 12: After comparing pre and post Brief Family Assessment scores, patient will show improvement of at least x 1 point or more.

Goal 2: Patient Will Take Part in a Therapeutic Medical Camp Designed for Pediatric Chronic Pain

- Objective 13: While participating in camp, patient will complete activities (excluding meals and sleeping) with cooperation and enjoyment 80% of the time.
- Objective 14: When presented with a week-long residential camp experience for adolescents only, patient will take part in 80% of activities presented
- Objective 15: When presented with a 3-day family residential camp experience for adolescence and caregivers, patient will take part in 80% of activities presented

Goal 3: Patient Will Improve School Attendance

- Objective 16: After completing residential adolescent camp and family camp during summer months, patient will return to school during the fall semester, 51% of possible school attendance days.

Implementation

The program consisted of a week-long program of activities in a therapeutic camp setting for the patients and ended with the caregivers joining in at the weekend. Treatment approaches included cognitive and behavioral therapy (Noel et al., 2012) in partnership with the child psychologist in addition to other interventions outlined in the recreational therapy literature (Austin; 2013; Dattilo & McKenney, 2000) and supervised by the recreational therapist such as yoga, physical activity, adaptive outdoor recreation, adventure therapy, equine-assisted therapy, social skills training, and mindfulness activities. These interventions were based on common elements of comprehensive pediatric pain treatment (Hechler et al., 2015) shown to be effective in improving youth functioning for chronic pain. Overall, this therapeutic camp experience was a pilot program for both adolescent patients and caregivers channeled

towards improvements in accepting and pushing through chronic pain as highlighted in the ACT model. The family weekend was also included to address family problem solving, improved family communication, and cognitive restructuring through effective communication mediums (text, e-mail, video-teleconferencing as well as discussions) between family members, professional caregivers and other specialists to reduce unnecessary hospital visits, improve psycho-social functioning and integration (Dougherty et al., 2021). Table 1 below provides an overview of the specific interventions utilized as part of the KIDS B.E.A.R. Pain Program.

Table 1
KIDS B.E.A.R. Pain Interventions

Relaxation training: The focus of relaxation training was to reduce mental and physical levels of tension via the activation of the parasympathetic nervous system. Campers were encouraged to come to a greater understanding of and an awareness of their physical and mental states. According to Söderberg et al., 2011, this results in achieving reductions in pain and increasing control over pain. Campers discussed with the leader the importance of relaxation and came up with different activities that may help them cope with their pain. The following are examples of the specific types of activities the clients participated in with a facilitator:
Biofeedback: Biofeedback is a treatment intervention in which patients learn to assess signals from their own bodies to determine stress levels. Thermal biofeedback (recording skin temperature) as well as resting heart rate are two of many different biofeedback indicators (Russoniello et al., 2013). Patients from the Kids B.E.A.R. Pain Protocol documented both skin temperature and heart rate prior to taking part in relaxation techniques and then again afterwards to determine any changes that took place.
Diaphragmatic breathing: The focus of diaphragmatic breathing is to use the muscles of your diaphragm as opposed to the muscles of your chest to engage in deep breathing exercises. This entails breathing by contracting the diaphragm allowing the lungs to expand down (marked by the expansion of the abdomen during inhalation) and thus increase oxygen intake (Phillips, 1988). During this session, the group of campers were all taught how to practice diaphragmatic breathing. Education was also provided during this session on why diaphragmatic breathing can help as a coping skill and pain management facilitator demonstrating technique, asking campers to attempt breathing, and providing feedback.
Progressive muscle relaxation (PMR): PMR is characterized by engaging in a combination of muscle tension and relaxation exercises for specific muscles or muscle groups throughout the body (Bernstein & Borkovec, 1973). During this session, a leader explained to the campers what PMR is and how it can benefit each of the campers. The campers were then guided through a PMR session by the leader. After the session, the leader debriefed how the campers felt after the session and how they could incorporate this into everyday life to improve pain management.
Visualization/Guided Imagery: The goal of this modality is to create relaxation with a “specific outcome in mind” such as pain relief (Posadzki & Ernst, 2011). This technique encourages participants to use all their senses in imagining a vivid, serene, and safe environment to achieve a sense of relaxation and distraction from the campers’ pain. During the week of camp, staff hosted a session where the teens were taught how to incorporate guided imagery into their daily lives along with mindfulness to help manage or distract from their pain. For example, this technique could be implemented at night if pain was creating a barrier to sleep or in the morning to help cope with pain to tolerate participating in a day of school.
Physical Activity through Adapted Sport: Adapted sports allow participation in sports despite disability or diagnosis. Examples of this would be the utilization of adapted cycles or the use of sports chairs to participate in activities like tag and basketball. Utilizing these pieces of equipment allows individuals to participate in exercise and experience active living. Not only can participation in adaptive sports improve physical fitness, but research suggests that it can also improve psychosocial outcomes such as quality of life and body image. During the week, adapted sports such as wheelchair tag, basketball, and hand cycling were introduced to the campers. When debriefing the activities, the girls stated that they didn’t think they would be able to participate simply due to typically not having this equipment available. Many also stated that they had not ridden a cycle in several years as they did not think they still had the ability.

Table 1 (cont.)

Physical Activity through Adapted Outdoor Recreation: Physical activity can occur through outdoor activities (e.g., canoeing, hiking, and swimming). Utilizing adapted outdoor recreation, can increase participants' self-efficacy, decrease the risk of ongoing major depressive symptoms (Wilson, 2012) and promote functional improvements for the whole family system (Dorsch et al., 2016). During the week, participants and their families had many opportunities to engage in outdoor activities such as canoeing, boating, hiking, and high ropes courses such as zip lining and the alpine tower.
Pain Journal: The focus of this technique was to facilitate self-expression in the form of free writing and stream of consciousness writing to clarify feelings about their pain during the week. Journaling with adolescents has multiple benefits such as, identity formation, regulation of emotions, and problem solving. At camp, the girls had time to decorate and create the cover for their own individualized journals. Throughout the week they were given time to write and provided with writing prompts/ questions to facilitate reflection which was later debriefed.
Adventure Therapy: Adventure Therapy incorporates outdoor activities that are physically and mentally challenging that also incorporate a degree of risk (Bastemur, 2019). When participating in this type of therapy, metaphors help clients relate their participation to real-life experiences (Bastemur, 2019). Adventure Therapy during the week of camp included zip lining, climbing the Alpine Tower, and also a rock ceremony in which clients wrote down something on the rock they would like to change and then had the opportunity to throw the rock into the lake from an overlook. The family weekend included the raft building activity and low ropes family V trust activity. Structured frontloading and debriefing before and after each activity were utilized throughout the adolescent and family weekend. This differed from outdoor recreation in that it was more purposeful, and goal driven.
Song Writing: Campers used music to cope with discomfort through musical performances in a form of cathartic release in a group setting and when they created new lyrics to popular songs as a way to describe their experience of dealing with chronic pain. According to Baker et al. (2008), a common goal for the use of song writing is to allow clients to tell their story through the writing of lyrics.
Horticulture Therapy: This modality utilizes gardening and plant-based activities to improve the mental and physical health of its participants (Horticultural Therapy Institute, 2021). In this context, the use of this intervention can encourage relaxation and coping skills as well as healthy eating to minimize pain. During the week of camp, the girls spent a session where they made homemade salsa from fresh ingredients and discussions occurred on the benefits of eating healthy and how it could help with pain management.
Warm Water Aquatic Activities The physical properties of water can assist the patient or client to improve functioning (Zamuner et al., 2018). The buoyancy of the water, warm temperature of the water is known to provide pain relief (Zamuner et al., 2018). This modality was used with the campers by doing a group evening swim in the camp's pool, which was heated to provide increased muscle relaxation.
Yoga: Yoga incorporates postures for exercise and breathing techniques with meditation (Pearson et al., 2020) to improve active coping with pain. It has been shown that yoga can provide improvement in "function, psycho-emotional comorbidities and pain" (Pearson et al., 2020, p. 125). A certified yoga instructor came to our program to lead an adapted yoga session with debrief to encourage and problem-solve ways campers planned to use yoga in their lives outside of camp.
Art Intervention: Art interventions have been shown to provide positive mental health outcomes in community-based settings (Lipe et al., 2012) During the week, campers participated in group art intervention by completing a mosaic that encapsulated a visual metaphor that represented their experience of life at camp while also living with ongoing pain. All campers were asked to paint a tile representing who they felt like they are as a person. Then, as a physical outlet, all the girls were asked to smash their tile to represent the hurdles they go through feeling "broken" or in pain. To conclude the activity, the girls took all of the broken pieces and made them part of a larger mosaic that represented the value of shared experiences and showed them that beautiful things can come from difficult experiences. During the family weekend, family units were asked to create a family bumper sticker or family movie poster that provided insights into the chronic pain experienced within the family unit. This facilitated the sharing of information in a non-threatening manner, and at times, in a humorous way (e.g., through a funny bumper sticker or movie poster in a comedy genre).
Best Faking Story Skit: Many individuals with chronic pain are often accused of "faking it" and struggle with having to explain themselves or convince people that their pain is real. To encourage campers to cope using humor about their experiences of stigmatization and marginalization, campers created and performed a humorous skit about their experience of living with pain. The creative process and performance fostered camaraderie, community, and group cohesion through this shared experience. Developing a story that can be told to others about illness opens a door to role-play with peers. This then led to the discussion of situations in which this has been difficult for the campers. It has been shown that the use of humor therapy shows a "stronger reduction in pain perception and quality of life impairment, and a stronger increase in the use of coping humor through self-enhancement" than individuals who have "treatment-as-usual" (Kugler et al., 2021, p. 3128).

Table 1 (cont.)

Challenge Day: This is a tradition at the camp in which the research took place. Campers can choose challenges that they want to achieve throughout the day. This may include scheduled interventions/activities such as Adventure Race, climbing the Cargo Tower, walking up a physically challenging hill named “Cardiac Hill” or participating in a lake swim. These physically demanding challenges can lead to improvements in pain, sleep, cognitive and physical functioning as well as increased independence in individuals with chronic pain (Ambrose & Golightly, 2015). Challenge day can also incorporate personal challenges that campers wanted to achieve throughout the day. Challenges are processed at the end of the day and related back to how the campers process their pain.
Equine-Assisted Learning: This is an experiential learning approach that promotes the development of life skills for educational, professional, and personal goals through equine-assisted activities (Professional Association of Therapeutic Horsemanship International, n.d.). During the session, the campers lead the horses without the use of any equipment other than their voice and hands with assistance from the facilitator that was PATH Certified. The facilitator was able to compare how as the girls’ increasing confidence led to success with the horse how they could incorporate this assertiveness into their day-to-day life and in their pain management. Campers also observed the horses in their natural state (i.e., herd observation). Campers were encouraged to identify horses within the social hierarchy in which they could relate. Processing then focused back to the emotions related to their own personal social situation outside of camp.
Leisure Education: This area of practice in recreational therapy is well defined (Dattilo, 2015) and typically focuses on educating patients in areas such as self-determined leisure interests, benefits of leisure participation, and ways to navigate barriers to leisure. During the Kids B.E.A.R. Pain Protocol, patients were encouraged to identify personal leisure interest and the benefits associated with participation as a coping method for chronic pain.
Inclusive Family Recreation: Participating together through the vehicle of recreation is seen as a beneficial endeavor for families that have a child with a disability (Scholl et al., 2003). During the family weekend, families took part in pontoon rides on the lake, a campfire, cookout, and a sand building initiative at the beach focused on family foundation and identity. Families also watched a side show of the adolescent patient camp, seeing the activities participated in during the previous five days and hearing testimonials about all that was learned during the camp. This helped the parents to understand what was possible despite the presence of chronic pain. There were also opportunities for families to talk informally during the evenings and meals as well as to participate in billiards such as a game of pool or board games during free time experiences.
Closing Ceremony for Pain Management: The use of metaphor was again used throughout the closing ceremony of the camp and the campers were asked to talk about what barriers they overcame while at camp. The facilitator then asked them to write on a rock what that barrier was and they then hiked with their rock and went to an overlook at a lake. The girls then threw their rock into the lake from a raised deck, symbolizing that they are leaving those barriers that they had here at camp since they have overcome them. They do not need to bring the “weight” of that barrier with them when they go back to their life outside of camp.

Pain Management Camp Schedule

Table 2 highlights specific interventions that were facilitated on each respective day of the 7-day Kids B.E.A.R. Pain Protocol. A more detailed description of each individual intervention may be found in Table 1. Interventions were selected specifically for the adolescent patient Sunday–Friday camp as well as the family-based Friday–Sunday weekend that followed the adolescent patient camp. All interventions were purposeful and agreed on in collaboration between the recreational therapist, director of camp, and child psychologist based on the goals/objectives of the protocol as well as the scientific literature on chronic pain in this population.

Table 2*Interventions Facilitated Each Day of Camp*

Residential camp week for adolescents: Schedule of activities				
Monday	Tuesday	Wednesday	Thursday	Friday
• Check-in • Leisure education • Biofeedback • Journaling • Campfire	• Breathing tech. • Adapted sports • 350' zipline challenge • Solo journaling • Free time	• Guided imagery and progressive muscle relaxation • Music intervention • Socializing with peers • Horticulture therapy	• Yoga • Canoeing • 50' alpine tower • Adapted cycling • Warm water aquatic activities	• Lake swimming • Climbing tower/adventure race/cardiac hill • Campfire and rock ceremony • Closing ceremony
Family weekend camp schedule				
Friday		Saturday	Sunday	
• Slide show testimonials from 5-day camp (show parents) • Pre-test parent survey • Family raft building • Beach cookout • Family pontoon rides • Family sandcastle initiative • Family free time		• Cabin time • Low V family trust* • School and healthy roles discussion • Socialization • Family chronic pain theme as poster or bumper sticker • Family free time	• Family free time • Pack up • Closing ceremony • Sharing of contact information	

Note: Each intervention is explained in detail in Table 1.

Evaluation and Documentation

In total, five patients met the criteria for inclusion and agreed to participate in the protocol. All five patients were evaluated at the therapeutic camp with corresponding documentation for each individual patient listed below. Table 3 provides an overview of the progress all five patients made collectively as a group on the psychosocial assessments as well as school attendance from pre-test (assessment) to post-test (evaluation). Bold font in Table 3 indicates that 50% or more of the five patients improved on a given psychosocial outcome.

Figure 1 further highlights and indicates the percentage increase in attendance of patients in school-based settings beginning in August after taking part in the Kids B.E.A.R. Pain Protocol in the summer months. Descriptive statistics show a 100% increase in school attendance after participation for all five patients (i.e., all five patients were not attending school in the spring and returned to school in the fall after attending camp in the summer). This was a major aim of the program as a result of the patients withdrawing from life activities due to their pain the spring before the therapeutic camp took place.

Table 3

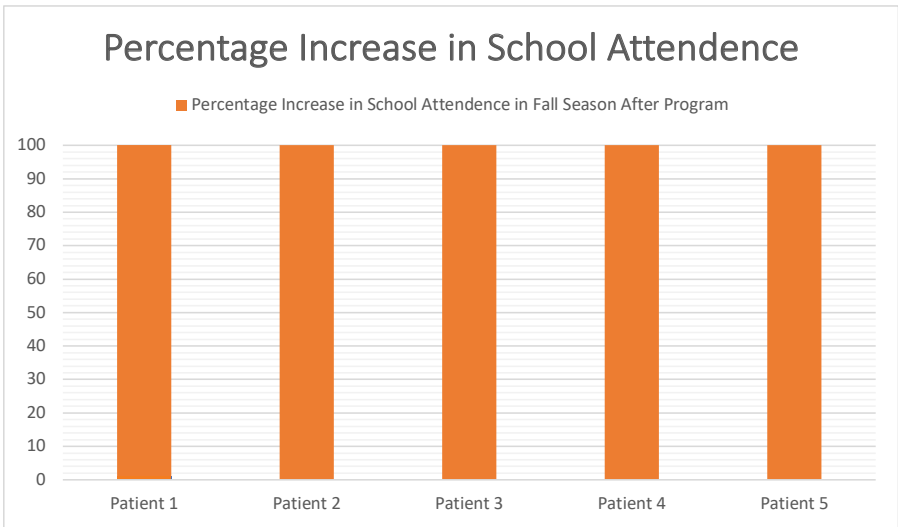
Groups Assessment Scores

Assessment Type	> 50% Objectives Achieved by Entire Group	Desired Direction
Visual Analogue Scale (Pain)	20%	Lower
QoL Health	20%	Higher
QoL Feelings	40%	Higher
QoL Social	40%	Higher
QoL School	0%	Higher
Functional Disability Inventory	20%	Lower
Pain Self-Efficacy	60% (achieved)	Higher
Bath Social	40%	Higher
Bath Activities	100% (achieved)	Higher
Bath Depression	40%	Lower
Bath Development	40%	Higher
SCAS (General Worries)	20%	Lower
SCAS (Pain Worries)	60% (achieved)	Lower
Brief Family Assessment	60% (achieved)	Higher
Returned to School	100% (achieved)	Return to School

Note: Quality of Life (QoL); Spence Children's Anxiety Score (SCAS)

Figure 1

Percentage Increase in School Attendance in Fall Season After Program



Tables 4–7 display the pre-assessment, post-evaluation scores, as well as the desired direction of the instrument. A check mark indicates if the desired objective (> +1 improvement) was achieved followed by individual notes below each table for further explanation. Each table corresponds with a written progress note for each of the five patients as well (e.g., Table 4 [patient 1], Table 5 [patient 2], Table 6 [patient 3], Table 7 [patient 4], and finally Table 8 [patient 5] are represented).

Patient 1 Progress Note

The patient took part in the KIDS B.E.A.R. Pain Protocol with participation at 80% or above for both the residential patient camp and family weekend. Patient displayed outwardly positive signs of enjoyment throughout the program on a consistent basis. After pre- and post-assessment scores, the patient showed improved scores in QoL Feelings, Pain Self-Efficacy, Bath Social, Bath Activities, and improvement on the Brief Family Assessment. Patient returned to school in fall season directly after camp ended. Patient referred to pediatric pain program for further follow up.

Table 4

Client #1 Pre-Assessment, Post Evaluation Scores, and Objectives Achieved

Type of Test	Pre-Assessment Score	Post Evaluation Score	Desired Direction	Objective Achieved
Visual Analogue Scale (Pain)	10	10	Lower	
QoL Health	37	28	Higher	
QoL Feelings	55	60	Higher	✓
QoL Getting Along with Others	70	55	Higher	
QoL School	55	30	Higher	
Functional Disability Inventory	29	30	Lower	
Pain Self-Efficacy	3	12	Higher	✓
Bath Social	19	20	Higher	✓
Bath Activities	18	21	Higher	✓
Bath Depression	7	9	Lower	
Bath Development	20	20	Higher	
SCAS (General Worries)	7	11	Lower	
SCAS (Pain Worries)	4	9	Lower	
Brief Family Assessment	14	18	Higher	✓

Note: Spence Children's Anxiety Score (SCAS); Pediatric Quality of Life (QoL)

Patient 2 Progress Note

The patient took part in the KIDS B.E.A.R. Pain Protocol with participation at or above the 80% rate for both the residential camp and family weekend. Patient was bright and social throughout the program. After pre- and post-assessment scores, patient showed improvement in Quality of Life Social, Bath Social, Bath Activities, and SCAS Pain Worries. Patient returned to school in fall season directly after camp ended. Patient referred to pediatric pain program for further follow up.

Patient 3 Progress Note

The patient took part in the KIDS B.E.A.R. Pain Protocol with participation at or above 80% for both residential camp and family weekend. Patient was outgoing and displayed signs of enjoyment throughout. After pre- and post-assessment scores, this patient showed improved scores in Pain Self-Efficacy, Bath Activities, Bath Depression, and Bath Development, and Brief Family Assessment. Patient returned to school in fall directly after camp ended. Patient referred to pediatric pain program for further follow up.

Table 5*Client # 2 Pre-Assessment, Post Evaluation Scores, & Objectives Achieved*

Type of Test	Pre-Assessment Score	Post Evaluation Score	Desired Direction	Objective Achieved
Visual Analogue Scale (Pain)	2	6	Lower	
QoL Health	37	18.75	Higher	
QoL Feelings	40	55	Higher	
QoL Social	55	60	Higher	✓
QoL School	50	50	Higher	
Functional Disability Inventory	31	34	Lower	
Pain Self-Efficacy	28	25	Higher	
Bath Social	17	23	Higher	✓
Bath Activities	19	20	Higher	✓
Bath Depression	16	16	Lower	
Bath Development	24	21	Higher	
SCAS General Worries	15	19	Lower	
SCAS Pain Worries	7	6	Lower	✓
Brief Family Assessment	39	39	Higher	

Note: Spence Children's Anxiety Score (SCAS); Pediatric Quality of Life (QoL)

Table 6*Client # 3 Pre-Assessment, Post Evaluation Scores, and Objectives Achieved*

Type of Test	Pre-Assessment Score	Post Evaluation Score	Desired Direction	Objective Achieved
Visual Analogue Scale (Pain)	2	2	Lower	
QoL Health	84	59	Higher	
QoL Feelings	60	50	Higher	
QoL Social	90	70	Higher	
QoL School	100	60	Higher	
Functional Disability Inventory	6	15	Lower	
Pain Self-Efficacy	18	22	Higher	✓
Bath Social	23	23	Higher	
Bath Activities	11	18	Higher	✓
Bath Depression	10	5	Lower	✓
Bath Development	19	26	Higher	✓
SCAS General Worries	N/A	18	Lower	
SCAS Pain Worries	N/A	11	Lower	
Brief Family Assessment	20	22	Higher	✓

Note: Spence Children's Anxiety Score (SCAS); Pediatric Quality of Life (QoL)

Patient 4 Progress Note

The patient took part in the KIDS B.E.A.R. Pain Protocol with participation at or above 80% of the required level. Patient was engaged, social, and displayed positive affect throughout. After pre- and post-assessment scores, this patient showed improved scores in a variety of areas including, Quality of Life Health, Quality of Life Social, Functional Disability Inventory, Bath Activities, Bath Depression, Bath Development, SCAS General Worries, and SCAS Pain Worries. Patient returned to school in fall directly after camp ended. Patient referred to pediatric pain program for further follow up.

Table 7

Client #4 Pre-Assessment, Post Evaluation Scores, and Objectives Achieved

Type of Test	Pre-Assessment Score	Post Evaluation Score	Desired Direction	Objective Achieved
Visual Analogue Scale (Pain)	8	8	Lower	
QoL Health	15.63	37.5	Higher	✓
QoL Feelings	45	40	Higher	
QoL Social	45	75	Higher	✓
QoL School	25	25	Higher	
Functional Disability Inventory	44	25	Lower	✓
Pain Self-Efficacy	24	11	Higher	
Bath Social	31	23	Higher	
Bath Activities	20	23	Higher	✓
Bath Depression	16	10	Lower	✓
Bath Development	13	16	Higher	✓
SCAS General Worries	14	10	Lower	✓
SCAS Pain Worries	18	10	Lower	✓
Brief Family Assessment	24	19	Higher	

Note: Spence Children's Anxiety Score (SCAS); Pediatric Quality of Life (QoL)

Patient 5 Progress Note

The patient took part in the KIDS B.E.A.R. Pain Protocol with participation at or above 80% level for residential camp and family weekend. Patient was socially engaged with a bright affect the majority of the therapeutic camp. After pre- and post-assessment scores, this patient showed improved scores in Visual Analogue Scale (Pain), Quality of Life Feelings, Pain Self-Efficacy, Bath Activities, SCAS Pain Worries, and Brief Family Assessment. Patient returned to school in fall directly after camp ended. Patient referred to pediatric pain program for further follow up.

Table 8

Client #5 Pre-Assessment, Post Evaluation Scores, and Objectives Achieved

Type of Test	Pre-Assessment Score	Post Evaluation Score	Desired Direction	Objective Achieved
Visual Analogue Scale (Pain)	5	3	Lower	✓
QoL Health	34.38	28.13	Higher	
QoL Feelings	60	70	Higher	✓
QoL Social	55	45	Higher	
QoL School	50	50	Higher	
Functional Disability Inventory	21	21	Lower	
Pain Self-Efficacy	21	22	Higher	✓
Bath Social	19	16	Higher	
Bath Activities	10	11	Higher	✓
Bath Depression	13	13	Lower	
Bath Development	26	26	Higher	
SCAS General Worries	17	19	Lower	
SCAS Pain Worries	14	13	Lower	✓
Brief Family Assessment	14	19	Higher	✓

Note: Spence Children's Anxiety Score (SCAS); Pediatric Quality of Life (QoL)

Discussion

The purpose of the Kids B.E.A.R. Pain Protocol was to provide patients that were not responding to traditional treatment with an alternative approach to rehabilitation. The focus of this approach was to promote the acceptance of pain, rather than the removal of pain, in order to improve quality of life and functionality within recreational, social, and school based settings. This was accomplished through a therapeutic camp approach consisting of a Sunday–Friday adolescent female patient specific program followed directly by a family-based weekend on Friday–Sunday (7-day program in total).

The Kids B.E.A.R. Pain Protocol uses the ACT Model, rather than the GCT, as the theoretical foundation of this program. As a result, the focus of the interventions throughout the 7-day experience reinforces that coping with pain is possible even when pain cannot be eliminated. Interventions such as yoga or deep breathing may help patients to cope enough to attend school or community events in the future, for example. Processing with patients also centered on supporting one another socially by understanding and empathizing but also pushing through pain within physical activities such as climbing, hiking, or adapted sports. Caregiver education during the weekend experience was also geared towards instructing caregivers on the methods used during the previous adolescent patient only camp and the need to reinforce these approaches at home after the program ended. Caregivers were encouraged to avoid pain catastrophizing while encouraging coping strategies learned at camp.

The outcomes of this paper include the detailed documentation of the protocol including a schedule of interventions conducted with the patients that are evidence based. Individual goals for each patient as well as corresponding outcomes on

psychosocial assessments were also identified. Each client improved on some of the measures but not all the measures. This indicates the unique nature of each patient and the need for individualized treatment plans that document progress through progress notes even though the protocol is set up through a group approach. Figure 1 provides an overview of the school attendance of the five patients after taking part in the Kids B.E.A.R. Pain Protocol and the improvements made in attending school after the program ended once the fall school season began. All five participants (100%) returned to school, indicating that the program may have impacted this important outcome. There were four outcomes that at least 50% of all five participants achieved. These included Pain Self-Efficacy (60% achieved), Bath Activities (100% achieved), SCAS Pain Worries (60% achieved), and Brief Family Assessment (60% achieved). This indicates that the program may help to meet several of the intended outcomes of improving family functioning while increasing participation in activities despite the presence of pain. Research is needed in the future to confirm these speculations.

Challenges

While there were many successes during this therapeutic camp, there were also challenges that were present in creating the first camp. Creating a new therapeutic camp meant the staff needed to establish many different interventions and a new schedule that differed from the typical weekly camp itinerary. Many different modalities were used, and while most were familiar to the camp staff, some required outside facilitation (e.g., yoga instructor), which posed challenges for scheduling.

The youth had great buy-in when explaining the purpose of the camp and what the staff were trying to accomplish. Despite this, staff still had to push patients to continue to participate in the activity or modality being offered. The camp staff struggled, at times, to know how much to push and when to encourage campers to take breaks or stay out of an activity. Staff had to communicate often with the camp director, recreational therapist, and child psychologist to ensure that they were having the youth participate appropriately while also acknowledging real pain and discomfort. The youth, however, were able to quickly create bonds of trust and empathy with each other and the staff during this period and maintained positive lines of communication.

An important piece of this camp was having consistency with the youth and their families. There was a desire to ensure that the families were given a correct representation of what happened at the patient residential therapeutic camp. Thus, it was important to keep the staffing the same throughout both the five-day residential camp and the family weekend. Due to this, it meant staff working several days in a row, which proved to be tiring despite the staff receiving some breaks along the way. In this case, creative means for providing breaks was needed to ensure staff received appropriate time off to stay healthy.

Limitations

This pilot program enrolled a small number of patients ($n = 5$) and did not include statistical analysis of the data, only descriptive statistics. Due to the lack of statistical analysis and low n size, it is impossible to attach causation to any of these reported outcomes. The nature of this paper is to highlight the protocol for therapist and directors and to describe general clinical observations. Therefore, this is a limitation of the findings and thus conclusions cannot be generalized to a broader population of patients. Future research on the Kids B.E.A.R. Pain Protocol should seek to increase

the n size of the enrollees and begin testing effectiveness of this intervention utilizing rigorous scientific research approaches to determine effect size and statistically significant changes from pre-test (assessment) to post-test (evaluation) on all psychosocial indicators as well as school attendance.

Implications for Future Practice

It is recommended to develop an online therapeutic program that would continue to keep the youth and families connected after the residential component of the Kids B.E.A.R. Pain Protocol is finished. For example, once per month online gatherings focused on social support and psychoeducational topics could be useful. A child psychologist and a recreational therapist may co-lead these sessions designed to continue to build upon the work accomplished during the residential camp components with the patients and their families. Previous research and innovative program design ideas focusing on the need for follow-on programs in the therapeutic camp setting may be useful as a guide for building the online follow-on programming (Dawson et al., 2021; Dawson, 2017). Implementing and testing a follow-on program should also be a priority for future research.

Conclusion

The Kid's B.E.A.R. Pain Chronic Pain Program highlights the versatility of recreational therapy when used in conjunction with a child psychologist specializing in pain to meet a diversity of needs for adolescent patients. This program may be especially useful for child psychologists running pediatric chronic pain clinics that find their patients becoming resistant to more traditional pain approaches. This protocol incorporates structure and content shown to be effective for rehabilitation, is socially supportive, and most importantly, enjoyable for the patient as they learn coping mechanisms for their chronic pain while still participating in activities.

References

- Ambrose, K., & Golightly, Y. (2015). Physical exercise as a non-pharmacological treatment of chronic pain: Why and when. *Clinical Rheumatology*, 29(1), 120–130.
- American Art Therapy Association. (2023, January 15). *About art therapy*. <https://art-therapy.org/about-art-therapy/>
- American Camp Association. (2023, January 15). *ACA accreditation*. [www.https://www.acacamps.org/accreditation](https://www.acacamps.org/accreditation)
- Arch, J. J., & Craske, M. G. (2008). Acceptance and commitment therapy and cognitive behavioral therapy for anxiety disorders: Different treatments, similar mechanisms? *Clinical Psychology: Science and Practice*, 15(4), 263–279.
- Austin, D. R. (2013). *Therapeutic recreation processes and techniques: Evidence-based recreational therapy* (7th ed.). Sagamore.
- Baker, F., Wigram, T., Stott, D., McFerran, D. (2008). Therapeutic songwriting in music therapy. *Nordic Journal of Music Therapy*, 17(2), 105–123. doi:10.1080/08098130809478203
- Bastemur, S. (2019). Adventure therapy. *Psikiyatride Guncel Yaklasimler*, 11(2), 178–190. <http://dx.doi.org/10.18863/pgy.434071>

- Berde, C., & Nurko, S. (2008). Opioid side effects—Mechanism-based therapy. *New England Journal of Medicine*, 358(22), 2400–2402.
- Bernstein, D. A., & Borkovec, T. D. (1973). *Progressive relaxation training: A manual for the helping professions*. Research Press.
- Boonstra, A. M., Preuper, H. R. S., Reneman, M. F., Posthumus, J. B., & Stewart, R. E. (2008). Reliability and validity of the visual analogue scale for disability in patients with chronic musculoskeletal pain. *International Journal of Rehabilitation Research*, 31(2), 165–169.
- Carter, B. D., Kronenberger, W. G., Threlkeld, B., Townsend, A., & Pruitt, A. (2013). The Children's Health & Illness Recovery Program (CHIRP): Feasibility and preliminary efficacy in a clinical sample of adolescents with chronic pain and fatigue. *Clinical Practice In Pediatric Psychology*, 1(2), 184–195. doi:10.1037/cpp0000012
- Casier, A., Goubert, L., Theunis, M., Huse, D., De Baets, F., Matthys, D., & Crombez, G. (2011). Acceptance and well-being in adolescents and young adults with cystic fibrosis: A prospective study. *Journal of Pediatric Psychology*, 36(4), 476–487.
- Claar, R. L., & Walker, L. S. (2006). Functional assessment of pediatric pain patients: Psychometric properties of the functional disability inventory. *Pain*, 121(1–2), 77–84.
- Claus, B. B., Stahlschmidt, L., Dunford, E., Major, J., Harbeck-Weber, C., Bhandari, R. P., Baerveldt, A., Neb, V., Grochowska, K., Hubner-Mohler, B., & Zernikow, B., (2022). Intensive interdisciplinary pain treatment for children and adolescents with chronic noncancer pain: A preregistered systematic review and individual patient data meta-analysis. *Pain*, 163(12), 2281–2301.
- Coffelt, T., Bauer, B., & Carroll, A. (2013). Inpatient characteristics of the child admitted with chronic pain. *Pediatrics*, 132(2), e422–9.
- Dattilo, J. (2015). *Leisure education program planning* (4th ed.). Venture.
- Dattilo, J., & McKenney, A. (2000). *Facilitation techniques in therapeutic recreation*. Venture.
- Dawson, S. (2017). Social inoculation and the extinguishing effects of pediatric medical camps: Proposing a framework for the other 51 weeks. *Recreation, Parks, and Tourism in Public Health*, 1(1), 5–20.
- Dawson, S., Knapp, D., & Farmer, J. (2012). Camp war buddies: Exploring the therapeutic benefits of social comparison in a pediatric oncology camp. *Therapeutic Recreation Journal*, 46(4), 313–325.
- Dawson, S., McCormick, B., Piatt, J., Knapp, D., & Dickinson, S. (2021). Effect of a mentoring program for adolescents with physical disabilities attending a therapeutic camp. *Journal of Pediatric Rehabilitation Medicine*, 14(2), 275–284.
- Devine, M. A., Piatt, J., & Dawson, S. L. (2015). The role of a disability-specific camp in promoting social acceptance and quality of life for youth with hearing impairments. *Therapeutic Recreation Journal*, 49(4), 293–309.
- Dorsch, T. E., Richards, A. R., Swain, J., & Maxey, M. (2016) The effect of an outdoor recreation program on individuals with disabilities and their family members. *Therapeutic Recreation Journal*, 50(2), 155–171.
- Dougherty, B. L., Zelikovsky, N., Miller, K. S., Rodriguez, D., Armstrong, S. L., & Sherry, D. D. (2021). Longitudinal impact of parental catastrophizing on child functional disability in pediatric amplified pain. *Journal of Pediatric Psychology*, 46(4), 474–484.

- Eccleston, C., Jordan, A., McCracken, L. M., Slead, M., Connell, H., & Clinch, J. (2005). The Bath Adolescent Pain Questionnaire (BAPQ): Development and preliminary psychometric evaluation of an instrument to assess the impact of chronic pain on adolescents. *Pain, 118*(1–2), 263–270.
- Esteve, R., Ramírez-Maestre, C., & López-Martínez, A. E. (2007). Adjustment to chronic pain: The role of pain acceptance, coping strategies, and pain-related cognitions. *Annals of Behavioral Medicine, 33*(2), 179–188.
- Evans, S., Sternlieb, B., Zeltzer, L., & Tsao, J. (2013). Iyengar yoga and the use of props for pediatric chronic pain: A case study. *Alternative Therapies In Health & Medicine, 19*(5), 66–70.
- Fisher, E., Law, E., Dudeney, J., Palermo, T. M., Stewart, G., & Eccleston, C. (2018). Psychological therapies for the management of chronic and recurrent pain in children and adolescents. *Cochrane Database of Systematic Reviews 2018, Issue 9*. Art. No.: CD003968. doi: 10.1002/14651858.CD003968.pub5
- Gagnon, C., Amstutz, D., & Revivo, G. (2011). Psychometric evaluation of the Bath Adolescent Pain Questionnaire (BAPQ) in a US-based clinical population. *The Journal of Pain, 12*(4), P17.
- Groenewald, C. B., Essner, B. S., Wright, D., Fesinmeyer, M. D., & Palermo, T. M. (2014). The economic costs of chronic pain among a cohort of treatment-seeking adolescents in the United States. *The Journal of Pain, 15*(9), 925–933. doi.org/10.1016/j.jpain.2014.06.002
- Guite, J. W., McCue, R. L., Sherker, J. L., Sherry, D. D., & Rose, J. B. (2011). Relationships among pain, protective caregiver responses, and disability for adolescents with chronic musculoskeletal pain: The mediating role of pain catastrophizing. *The Clinical Journal of Pain, 27*(9), 775–781.
- Hamilton, E., & Carr, A. (2016). Systematic review of self-report family assessment measures. *Family Process, 55*(1), 16–30.
- Harris, M. A., Spiro, K., Heywood, M., Wagner, D. V., Hoehn, D., Hatten, A., & Labby, D. (2013). Novel Interventions in Children's Health Care (NICH): Innovative treatment for youth with complex medical conditions. *Clinical Practice In Pediatric Psychology, 1*(2), 137–145. doi:10.1037/cpp0000016
- Hassett, A. L., Hilliard, P. E., Goesling, J., Clauw, D. J., Harte, S. E., & Brummett, C. M. (2013). Reports of chronic pain in childhood and adolescence among patients at a tertiary care pain clinic. *The Journal of Pain, 14*(11), 1390–1397.
- Hayes, S. C., Bissett, R. T., Korn, Z., Zettle, R. D., Rosenfarb, I. S., Cooper, L. D., & Grundt, A. M. (1999). The impact of acceptance versus control rationales on pain tolerance. *The Psychological Record, 49*, 33–47.
- Hechler, T., Kanstrup, M., Holley, A. L., Simons, L. E., Wicksell, R., Hirschfeld, G., & Zernikow, B. (2015). Systematic review on intensive interdisciplinary pain treatment of children with chronic pain. *Pediatrics, 136*(1), 115–127.
- Horticulture Therapy Institute. (2023, January 15). *Turn your passion into a rewarding career*. <https://www.htinstitute.org/about/about-hti/>
- Huguet, A., & Miró, J. (2008). The severity of chronic pediatric pain: An epidemiological study. *The Journal of Pain, 9*(3), 226–236.
- Jastrowski Mano, K., Salamon, K., Hainsworth, K., Anderson Khan, K., Ladwig, R., Davies, W., & Weisman, S. (2013). A randomized, controlled pilot study of mind-

- fulness-based stress reduction for pediatric chronic pain. *Alternative Therapies In Health & Medicine*, 19(6), 8–14.
- Kashikar-Zuck, S., Flowers, S. R., Claar, R. L., Guite, J. W., Logan, D. E., Lynch-Jordan, A. M., Polermo, T.M., & Wilson, A. C. (2011). Clinical utility and validity of the Functional Disability Inventory among a multicenter sample of youth with chronic pain. *Pain*, 152(7), 1600–1607.
- Keogh, E., & Arendt-Nielsen, L. (2004). Sex differences in pain. *European Journal of Pain*, 8, 395–396.
- King, S., Chambers, C. T., Huguet, A., MacNevin, R. C., McGrath, P. J., Parker, L., & MacDonald, A. J. (2011). The epidemiology of chronic pain in children and adolescents revisited: A systematic review. *Pain*, 152(12), 2729–2738.
- Kohut, S. A., Stinson, J. N., Ruskin, D., Forgeron, P., Harris, L., van Wyk, M., Luca S., & Campbell, F. (2016). iPeer2Peer program: A pilot feasibility study in adolescents with chronic pain. *Pain*, 157(5), 1146–1155.
- Kugler, L., Kuhbandner, C., Gerum, S., Hierl, C., Münster, T., Offereins, B., & Lutterbach, L. S. (2021). Evaluation of a humor training for patients with chronic pain: A randomized clinical trial. *Journal of Pain Research*, 14, 3121–3133. doi: 10.2147/JPR.S313868
- Levy, R. L., Langer, S. L., & Whitehead, W. E. (2007). Social learning contributions to the etiology and treatment of functional abdominal pain and inflammatory bowel disease in children and adults. *World Journal of Gastroenterology: WJG*, 13(17), 2397.
- Lewandowski, A. S., Palermo, T. M., Stinson, J., Handley, S., & Chambers, C. T. (2010). Systematic review of family functioning in families of children and adolescents with chronic pain. *The Journal of Pain*, 11(11), 1027–1038.
- Lipe, A. W., Ward, K. C., Watson, A. T., Manley, K., Keen, R., Kelly, J., & Clemmer, J. (2012). The effects of an arts intervention program in a community mental health setting: A collaborative approach. *The Arts in Psychotherapy*, 39(1), 25–30.
- Loeser, J. D., & Melzack, R. (1999). Pain: An overview. *The Lancet*, 353(9164), 1607–1609.
- Logan, D. E., Simons, L. E., & Carpino, E. A. (2012). Too sick for school? Caregiver influences on school functioning among children with chronic pain. *Pain*, 153(2), 437–443.
- McCracken, L.M., Gauntlett-Gilbert, J., & Eccleston, C. (2010). Acceptance of pain in adolescents with chronic pain: Validation of an adapted assessment instrument and preliminary correlation analyses. *European Journal of Pain*, 14, 316–320.
- McCracken, L. M., & Vowles, K. E. (2007). Psychological flexibility and traditional pain management strategies in relation to patient functioning with chronic pain: An examination of a revised instrument. *The Journal of Pain*, 8(9), 700–707.
- McGarrigle, L., Wesson, C., DeAmicis, L., Connolly, S., & Ferreira, N. (2020). Psychological mediators in the relationship between paediatric chronic pain and adjustment: An investigation of acceptance, catastrophising and kinesiophobia. *Journal of Contextual Behavioral Science*, 18, 294–305.
- Melzack, R., & Wall, P. D. (1965). Pain Mechanisms: A New Theory: A gate control system modulates sensory input from the skin before it evokes pain perception and response. *Science*, 150(3699), 971–979.

- Miller, R. P., Kori, S. & Todd, D. (1991). The tampa scale: A measure of kinesiophobia. *Clinical Journal of Pain*, 7(1), 51–52.
- Nicholas, M. K. (1989). *Self-efficacy and chronic pain*. Paper presented at the annual conference of the British Psychological Society. St. Andrews.
- Noel, M., Petter, M., Parker, J. A., & Chambers, C. T. (2012). Cognitive behavioral therapy for pediatric chronic pain: The problem, research, and practice. *Journal Of Cognitive Psychotherapy*, 26(2), 143–156. doi:10.1891/0889-8391.26.2.143
- Orgiles, M., Fernandez-Martinez, I., Guillen-Riquelme, A., Espada, J. P., & Essau, C. A. (2016). A systematic review of the factor structure and reliability of the Spence Children's Anxiety Scale. *Journal of Affective Disorders*, 190, 333–340.
- Ostelo, R. G., & Vlaeyen, J. S. (2008). Editorial: Attitudes and beliefs of health care providers: Extending the fear-avoidance model. *Pain*, 1353–4. doi:10.1016/j.pain.2007.12.003
- Palermo, T. M., Valrie, C. R., & Karlson, C. W. (2014). Family and caregiver influences on pediatric chronic pain: A developmental perspective. *American Psychologist*, 69(2), 142–152. doi:10.1037/a0035216
- Palermo, T. M., Wilson, A. C., Peters, M., Lewandowski, A., & Somhegyi, H. (2009). Randomized controlled trial of an Internet-delivered family cognitive-behavioral therapy intervention for children and adolescents with chronic pain. *Pain*, 146(1–2), 205–213.
- Pearson, N., Prosko, S., Sullivan, M., Taylor, M. J. (2020). White paper: Yoga therapy and pain: How yoga therapy serves in comprehensive integrative pain management, and how it can do more. *International Journal of Yoga Therapy*, 30(1), 117–133.
- Phillips, H. C. (1988). *The psychological management of chronic pain: A treatment manual*. Springer Publishing.
- Picavet, H. S. J., Vlaeyen, J. W., & Schouten, J. S. (2002). Pain catastrophizing and kinesiophobia: Predictors of chronic low back pain. *American Journal of Epidemiology*, 156(11), 1028–1034.
- Pielech, M., Vowles, K., & Wicksell, R. (2017). Acceptance and commitment therapy for pediatric chronic pain: Theory and application. *Children*, 4(2), 10.
- Posadzki, P. & Ernst, E. (2011). Guided imagery for musculoskeletal pain: A systematic review. *The Clinical Journal of Pain*, 27(7), 648–653. doi: 10.1097/AJP.0b013e31821124a5
- Powers, S. W., Patton, S. R., Hommel, K. A., & Hershey, A. D. (2003). Quality of life in childhood migraines: Clinical impact and comparison to other chronic illnesses. *Pediatrics*, 112(1), e1–e5.
- Professional Association of Therapeutic Horsemanship International. (2023, January 15). PATH international. <https://www.pathintl.org/>
- Quartana, P. J., Campbell, C. M., & Edwards, R. R. (2009). Pain catastrophizing: A critical review. *Expert Review of Neurotherapeutics*, 9(5), 745–758.
- Reddy, B. (2006). The epidemic of unrelieved chronic pain: The ethical, societal, and regulatory barriers facing opioid prescribing physicians. *Journal Of Legal Medicine*, 27(4), 427–442.

- Roth-Isigkeit, A., Thyen, U., Stöven, H., Schwarzenberger, J., & Schmucker, P. (2005). Pain among children and adolescents: Restrictions in daily living and triggering factors. *Pediatrics*, 115(2), e152–e162.
- Russoniello, C. V., Fish, M., Paton, H., & Styron, R., (2013). The use of biofeedback in recreational therapy practice. *American Journal of Recreation Therapy*, 12(2), 8–18.
- Scholl, K., McAvoy, L., Rynders, J., & Smith, J., (2003). The influence of an inclusive outdoor recreation experience on families that have a child with a disability. *Therapeutic Recreation Journal* 37(1), 38–57.
- Skinner, H., Steinhauer, P., & Sitarenios, G. (2000). Family Assessment Measure (FAM) and process model of family functioning. *Journal of Family Therapy*, 22(2), 190–210.
- Söderberg, E. I. , Carlsson, J. Y., Stener-Victorin, E. & Dahlöf, C. (2011). Subjective well-being in patients with chronic tension-type headache. *The Clinical Journal of Pain*, 27(5), 448–456. doi: 10.1097/AJP.0b013e318208c8fe.
- Sorge, R. E., & Totsch, S. K. (2017). Sex differences in pain. *Journal of Neuroscience Research*, 95(6), 1271–1281.
- Spence, S. H., Barrett, P. M., & Turner, C. M. (2003). Psychometric properties of the Spence Children's Anxiety Scale with young adolescents. *Journal of Anxiety Disorders*, 17(6), 605–625.
- Tonkin, L. (2008). The pain self-efficacy questionnaire. *Australian Journal of Physiotherapy*, 54(1), 77.
- Van Damme, S., Crombez, G., & Eccleston, C. (2008). Coping with pain: A motivational perspective. *Pain*, 139(1), 1–4.
- van Uden-Kraan, C. F., Drossaert, C. H., Taal, E., Shaw, B. R., Seydel, E. R., & van de Laar, M. A. (2008). Empowering processes and outcomes of participation in online support groups for patients with breast cancer, arthritis, or fibromyalgia. *Qualitative Health Research*, 18(3), 405–417.
- Varni, J. W., Seid, M., & Kurtin, P. S. (2001). PedsQL™ 4.0: Reliability and validity of the Pediatric Quality of Life Inventory™ Version 4.0 Generic Core Scales in healthy and patient populations. *Medical Care*, 800–812.
- Varni, J. W., Thompson, K. L., & Hanson, V. (1987). The Varni/thompson pediatric pain questionnaire. I. Chronic musculoskeletal pain in juvenile rheumatoid arthritis. *Pain*, 28(1), 27–38.
- Vlaeyen, J. W., de Jong, J., Geilen, M., Heuts, P. H., & van Breukelen, G. (2002). The treatment of fear of movement/(re) injury in chronic low back pain: Further evidence on the effectiveness of exposure in vivo. *The Clinical Journal of Pain*, 18(4), 251–261.
- Vowles, K. E., Fink, B. C., & Cohen, L. L. (2014). Acceptance and Commitment Therapy for chronic pain: A diary study of treatment process in relation to reliable change in disability. *Journal of Contextual Behavioral Science*, 3(2), 74–80.
- Vowles, K. E., & McCracken, L. M. (2008). Acceptance and values-based action in chronic pain: A study of treatment effectiveness and process. *Journal of Consulting and Clinical Psychology*, 76(3), 397.
- Vowles, K. E., McCracken, L. M., Sowden, G., & Ashworth, J. (2014). Psychological flexibility in coping with chronic pain: Further examination of the brief pain coping inventory-2. *The Clinical Journal of Pain*, 30(4), 324–330.

- Walker, L.S., & Greene, J.W., (1991). The Functional Disability Inventory: Measuring a neglected dimension of child health status. *Journal of Pediatric Psychology*, 16 (1), 166–172.
- Wallace, D. P., Harbeck-Weber, C., Whiteside, S. P., & Harrison, T. E. (2011). Adolescent acceptance of pain: Confirmatory factor analysis and further validation of the chronic pain acceptance questionnaire, adolescent version. *The Journal of Pain*, 12(5), 591–599.
- Wicksell, R. K., Melin, L., Lekander, M., & Olsson, G. L. (2009). Evaluating the effectiveness of exposure and acceptance strategies to improve functioning and quality of life in longstanding pediatric pain—a randomized controlled trial. *Pain*, 141(3), 248–257.
- Wilson, J. F. (2012). *The relationship of outdoor recreation and gardening with depression among individuals with disabilities*. Utah State University (Order No. 1516436). ProQuest Dissertations & Theses Global.
- Wren, A. A., Ross, A. C., D'Souza, G., Almgren, C., Feinstein, A., Marshall, A., & Gollan, B. (2019). Multidisciplinary pain management for pediatric patients with acute and chronic pain: A foundational treatment approach when prescribing opioids. *Children*, 6(2), 33.
- Zamuner, A. R., Andrade, C. P., Arca, E. A., & Avila, M. A. (2019). Impact of water therapy on pain management in patients with fibromyalgia: Current perspectives. *Journal of Pain Research*, 12, 1971–2007. doi:10.2147/JPR.S161494.
- Zettle, R. D. (2005). The evolution of a contextual approach to therapy: From comprehensive distancing to ACT. *International Journal of Behavioral Consultation and Therapy*, 1(2), 77.