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A Cognitive-Behavioral Group Intervention for Parents of Youth with Chronic Pain:

Development, Feasibility, and Preliminary Effectiveness

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## Abstract

**BACKGROUND:** Caregiving for a youth with chronic pain is associated with unique stressors. Parents can play important roles for youth coping and functional outcomes, although parents often report uncertainty about how to support their youth and may benefit from learning evidence-based strategies. However, few parent-targeted interventions for pediatric chronic pain exist, particularly delivered within a group format. **OBJECTIVES:** The aims of this study were to describe the development of a parent-targeted group intervention within an outpatient interdisciplinary pediatric chronic pain clinic, and to assess preliminary feasibility and effectiveness. **METHOD:** The development and content of the intervention are described in detail. Feasibility was assessed via enrollment, attendance, and attrition. Effectiveness was assessed via parent self-reported responses to pain and psychological flexibility (PF) at pre- and post-treatment. **RESULTS:** Seventy parents consented and participated in the 5-week group intervention (2 hours/session). Preliminary results demonstrated adequate feasibility, with attendance rates at 61.4% and attrition rates at 24.3%. Posttreatment, there were significant moderate to large sized decreases in three of four parent behaviors assessed (protectiveness, monitoring, minimizing) and large sized increases in PF. **CONCLUSIONS:** This group intervention for parents can produce positive changes in self-reported parent behavior and PF and may be a feasible way to intervene within an outpatient interdisciplinary setting.

**Keywords:** Pediatric chronic pain; parent intervention; group intervention; therapy

**Implications for Impact Statement:** Parents play important roles for supporting coping and functional outcomes in youth with chronic pain, although parents report uncertainty over how to best support their youth and may benefit from learning evidence-based strategies. This study suggests that a relatively brief parent-targeted group intervention (5 weeks, 2 hours/week) may help promote psychological flexibility and reduce ‘unhelpful’ parent behaviours that may reinforce pain.

Chronic pain is defined as pain that lasts for longer than 3 months, or beyond the expected time for tissue healing (Treede et al., 2015). In children and adolescents (herein “youth”), pediatric chronic pain is a common health concern with prevalence rates ranging from 11-38% (King et al., 2011). Youth with chronic pain commonly report decreased school attendance, greater academic difficulties, fewer peer relationships, and high levels of depression and anxiety (Campo et al., 2002; Forgeron et al., 2010; Kashikar-Zuck et al., 2001; Soltani et al., 2019; Vinall et al., 2016). As youth with chronic pain are at risk of experiencing chronic pain into adulthood, effective interventions are critical (Walker et al., 2010).

Pediatric chronic pain is a multifaceted experience that exists within a family system (Palermo et al., 2014). The operant conditioning model of chronic pain (Fordyce, 1976) has described how learning mechanisms (e.g., parent modeling) and social reinforcement (e.g., attention, permission to avoid unwanted activities) can contribute to the maintenance of pain behaviors and functional disability (Fordyce, 1976; Gatzounis et al., 2012). Conceptualized as “miscarried helping” (Fales et al., 2014), greater parent protectiveness (restricting daily activities such as going to school), monitoring (checking in about the pain), and minimizing (dismissing/downplaying the pain) have been associated with increased pain and disability (Claar et al., 2008; Sieberg et al., 2011), while greater parent distraction (attempts to take youth’s mind off of pain) appears to be related to poorer youth quality of life (Lee et al., 2020). This suggests that parent factors may be important to target within pediatric chronic pain interventions.

One study has found that parent protectiveness, monitoring, distraction, and minimizing behaviors can be reduced following intensive interdisciplinary pain treatment (Pielech et al., 2018). Moreover, evidence-based Cognitive Behavior Therapy (CBT) interventions for pediatric

chronic pain have also demonstrated improvements in parent protectiveness (e.g., Palermo, Law, Fales, et al., 2016) and monitoring behaviors (Coakley et al., 2018).

Cognitions and attitudes towards pain may also play a role in how parents respond to their youth in pain; for example, high levels of pain catastrophizing in parents (e.g., magnifying and/or ruminating about actual or anticipated pain) has been associated with higher parent protectiveness and poorer youth functional outcomes (Jaaniste et al., 2016; Stone & Wilson, 2016). In contrast, psychological flexibility (PF) about pain, defined as a parent's ability to tolerate their own distress related to having a youth with chronic pain and continue to encourage their youth to engage in valued daily activities, has been associated with lower protectiveness, and higher youth school attendance, mood, and pain acceptance (Lee et al., 2020; Sieberg et al., 2011; Wallace et al., 2015). PF is an integral component to Acceptance and Commitment Therapy (ACT; Hayes, Luoma, Bond, Masuda, & Lillis, 2006), which is a treatment approach that emphasizes increased PF (compared to inflexibility) and acceptance. Given that reinforcing “well” behaviors (e.g., school attendance, participation in exercise, and use of pain-management strategies) are the primary goals for chronic pain management, rather than reducing pain levels (Friedrichsdorf et al., 2016; Odell & Logan, 2013), promoting PF in parents may be an important and viable way to help parents continue to encourage adaptive functioning in their youth. Pediatric chronic pain ACT interventions for parents, which include skills such as mindfulness and values-focused behaviors, have been shown to increase parent PF from pre- to post-treatment (Kemani et al., 2018; Wallace et al., 2016).

Parents of youth with chronic pain report unique social, emotional, and financial stressors related to caregiving and commonly report feeling overburdened and uncertain around how to best support their youth (Jordan & Jaaniste, 2019). Thus, parents may benefit from learning

strategies to help them support their youth, as well as receiving support to manage the unique stressors related to caregiving. Interventions that include parents are increasingly being recognized as an important aspect of family-based care, although treatments have varied in the degree of parental involvement, with many studies including parents in only a portion of the youth's treatment (e.g., Degotardi et al., 2006). Of the parent-targeted interventions (e.g., parents received their own standalone treatment) that have been reported, most have been administered individually rather than in group format (e.g., Levy et al., 2017; Palermo et al., 2016). Yet, group interventions may be a cost-effective way to provide treatment within interdisciplinary settings (Goldfield et al., 2001), and provide opportunities for social support from other parents. To date, a few studies have reported on parent-targeted group interventions for pediatric chronic pain. However, these studies have not examined parent PF as an outcome for treatment effects (Guite et al., 2018), have focused on a specific pain-related condition, which may limit generalizability of findings (Wiertz et al., 2017), or have had small sample sizes (e.g.,  $n=8$ ; Wallace et al., 2016).

Thus, the aims of this paper are twofold: 1) to describe the development (e.g., format, structure, theoretical orientation, rationale) of a group intervention for parents of youth with chronic pain, including clinical considerations during development and for future group interventions; and 2) to determine the feasibility and initial estimates of the effectiveness of the intervention (i.e., establish preliminary effect sizes) to inform future studies. Based on previously reported average attendance and attrition rates from a review of behavioral-based parent interventions (Chacko et al., 2016), we expected adequate attendance ( $> 70\%$ ) and low attrition ( $<25\%$ ). In terms of effectiveness, we expected that parents would show significant reductions in their behavioral responses (i.e., protectiveness, monitoring, distraction, and minimizing; akin to Pielech et al., 2018), and significant increases in PF from pre- to post-treatment.

## Method

### Design, Recruitment, and Setting

A non-randomized, pre-post pilot study was conducted between May 2016 and February 2019. Parents (adults who played a caregiving role for the youth) of youth 8-17 years who completed an intake assessment at an outpatient pediatric chronic pain clinic within a tertiary pediatric hospital in Canada were invited to participate. The only inclusion criteria was the ability to speak and understand English. Parents were expected to attend all sessions, and it was explicitly noted that this was not a “drop-in” group. Both parents (when possible/applicable) were encouraged to attend, although this was not required for participation as long as the same parent attended all of the sessions. Parents participated in the intervention during their youth’s standard care within the outpatient clinic.

Pre-and post-treatment measures (i.e., before the first session and at the end of the last session) were collected as part of clinical practice and evaluation. Initially, only self-reported parent behavioral responses were examined as an outcome measure to assess effectiveness of the group. However, in November 2018, PF was added as an outcome, given that the intervention included content aimed to increase awareness to values, and since increased parent PF has been shown to be an important resiliency factor for maintaining youth functioning. Parents completed pre-treatment measures prior to the start of the first group session and the post-treatment measures at the end of the last session; questionnaires were completed individually either in the waiting room or group room. Individuals could not see each other’s answers. As part of an ongoing research database, families were also approached for consent to use their group measures for research purposes. Thus, data for this study came from parents who participated in

the group *and* provided consent for the research database. The relevant institutional ethics board approvals were obtained (hospital, university).

### **Intervention: Development and Structure**

The group intervention was developed by a psychologist (XX) and social worker in a pediatric chronic pain clinic after recognizing the need and demand from parents to receive additional education and support regarding caregiving for their youth. The outpatient clinic follows an interdisciplinary ‘3P’ approach: psychosocial, physical, and pharmacological. Typically, youth are followed by a team including a medical professional (adolescent medicine pediatrician, anesthesiologist, nurse practitioner), physical therapist, psychosocial professional (social worker or psychologist), and occupational therapist. Depending on the youth (e.g., age, openness), parents are invited in to the end of psychosocial sessions to receive updates on progress and homework for their youth (with parents being more involved for younger children). Given the increasing demand for parent education and support, this group intervention was developed as the sole parent-targeted intervention within the outpatient clinic.

The intervention was developed to target parent factors that optimize youth outcomes (e.g., decrease maladaptive responses, increase attention to functioning and valued activities), as well as to provide parents with structured social support via the group setting. Consistent with evidence-based treatment for pediatric chronic pain, the intervention was predominantly cognitive-behavioral, although elements consistent with third wave treatments (e.g., ACT) such as focusing on values, mindfulness, and self-validation, are included. The first group cycle started as a four-week group (1.5-hour sessions weekly). However, following parent feedback, a fifth session focusing on school partnerships was added, and sessions were increased to two hours in length to allow more time for discussion and reflection. Thus, each subsequent group



cycle was 5 weekly sessions (2 hours, 4:00 pm-6:00 pm). The time at which the group could be offered was somewhat limited (e.g., access to rooms in the hospital), which may have impacted participation and attendance for some parents. Parent groups were also run concurrently with a group for adolescents in the program, which was thought to potentially be beneficial for enrollment and attendance. Groups were offered throughout the year, except during the summer as parents expressed challenges with committing to a 5-week program during that time.

The group was led by two facilitators, with at least one facilitator being a registered clinical psychologist or advanced clinical psychology graduate student. Co-facilitators were predominantly social workers, and all facilitators had experience working with families of youth with chronic pain. The facilitators remained the same for the duration of the group cycle, although it was not always the same facilitators who ran all of the group cycles due to staff availability, leaves, etc. The intervention followed a manualized approach: comprehensive facilitator notes and weekly handouts for the parents were developed to aid treatment fidelity and guide session activities and discussions. Facilitators also met weekly before the group to discuss session content and process. Facilitator training was dependent on the facilitator's knowledge and skill on the topic, although all new facilitators observed the group first prior to facilitating.

Please see Table 1 for details on session structure, content, and aims. Sessions included a guided mindfulness activity, homework review, session content/didactic activity, and homework/goal setting for the following week. Discussions among parents and reflection/application of group content were encouraged and facilitated. For example, each week included activities where parents were asked to reflect and share their own experiences with the group. Sessions 3 to 5 also included case study/scenarios that parents problem-solved in pairs/small groups with some facilitator support, and then discussed with the larger group.

Examples of scenarios included common barriers for parents (e.g., “*When I woke my daughter up for school yesterday, she told me that she’s in pain and not going to school. She told me I don’t understand what it’s like since I don’t have pain. I ended up letting her stay home from school. She watched television most of the day and slept.*”), and common questions from schools (e.g., “*Are we not enabling your child by allowing them to only do five minutes of gym? Should we not be supporting your child to “push through the pain” for all 60 minutes of gym class?*”).

Homework/goal setting each week was presented as a way to have parents reflect on session material through the week, practice new skills, model coping for their youth, and engage in problem-solving at the following session during homework take up.

## Measures

**Demographics and attendance.** Demographic information was obtained from intake measures (e.g., youth and parent gender, age). Attendance records were kept by facilitators.

**Adult Responses to Children’s Symptoms (ARCS).** The ARCS is a 29-item measure of parent responses to their child’s pain on a 5-point scale ranging from 0 (“Never”) to 4 (“Always”; Van Slyke & Walker, 2006), with higher scores indicating greater use of a particular response style. The four-factor structure was computed for this study (Noel et al., 2015). In previous studies, internal reliabilities have been variable between subscales, with protectiveness and monitoring showing adequate reliability ( $\alpha=.84$  and  $\alpha=.80$ , respectively), and distraction and minimizing showing poorer reliability ( $\alpha=.64$  and  $\alpha=.59$ , respectively; Noel et al., 2016). Baseline internal reliabilities for all subscales were adequate in this study ( $\alpha=.86$  for protectiveness,  $\alpha=.88$  for monitoring,  $\alpha=.72$  for distraction, and  $\alpha=.74$  for minimizing).

**Parent Psychological Flexibility Questionnaire (PPFQ).** The PPFQ is a 17-item measure of parent PF regarding their youth’s chronic pain. Items are rated on a 7-point scale

ranging from 0 (“Never True”) to 6 (“Always True”), with higher scores indicating greater parent PF. Examples include “*When my child is suffering with pain, I feel that I have to make it stop*” and “*Even though my child has pain we can continue to do things that are important and enjoyable*”. The PPFQ has demonstrated high internal consistency ( $\alpha=0.91$ ) and good convergent validity (McCracken & Gauntlett-Gilbert, 2011; Wallace et al., 2015). In this sample, internal reliability was high ( $\alpha=.92$ ).

### **Analytic Plan**

Analyses were conducted using the Statistical Package for Social Sciences software program (SPSS version 26). All data were checked and found to be normally distributed (i.e., Shapiro-Wilk test  $p>.05$ ). Each parent who participated in the group intervention and completed pre- and post-treatment measures were included in the analyses (i.e., couples counted as individual participants). Descriptive statistics were calculated to determine feasibility of the intervention (e.g., participant enrollment, attendance, and attrition). Paired samples  $t$ -tests were used to compare means for parent behavioral responses and PF for parents who completed both the pre-treatment and post-treatment measures. Cohen’s  $d$  was used to calculate effect size estimates (i.e., 0.20 indicating small, 0.50 indicating medium, and  $>0.8$  indicating large sized effect). A power analysis was conducted using R studio; to test study hypotheses using paired sample  $t$ -tests with a power of 0.8 and a significance (alpha) level of .05, a minimum sample of 34 participants was required. In order to account for an estimated 25% attrition rate (Chacko et al., 2016), we aimed to enroll a minimum of 43 parents. The current sample size exceeds the minimum sample size requirements to calculate paired samples  $t$ -test for the four response styles but is underpowered for PF (due to it being added later as an outcome measure); however, preliminary results pertaining to PF are presented.

## Results

### Participants

Eleven group cycles were run within the study recruitment period; on average each group had approximately 6 parents. Data from the first group cycle were removed from subsequent analyses due to the change in the intervention design following that cycle (e.g., additional session added discussing school partnerships, increased length of each session from 1.5 to 2 hours). Thus, in the final sample, participants were 70 parents of 8-17 year old youth ( $M=14.59$ ,  $SD=2.44$ ; 74.3% female). Of the parents, 78.6% were mothers, 17.1% fathers, and 4.3% other (i.e., grandparent, stepparent). Six couples attended together; in total, parents of 58 youth participated in the study. Youth pain conditions were varied and included headache, abdominal pain, complex regional pain syndrome (CRPS), and musculoskeletal pain.

### Feasibility of the Group Intervention

Please see Figure 1 for participant flow. Approximately one-third of parents who completed an intake in the clinic enrolled in the group (33.4% enrollment rate). On average, parents attended at least 3 sessions (mean attendance: 3.59/5), and 61.4% attended 4 or more sessions. Attrition (participating in <2 sessions) was 24.3%.

### Preliminary Effectiveness of the Intervention

See Table 2 for pre- and post-treatment means and standard deviations. Consistent with hypotheses, large-sized reductions in parent protectiveness [ $t(41)=5.70$ , 95% CI [.26, .55],  $d=.88$ ,  $p<.001$ ] and monitoring [ $t(41)=7.65$ , 95% CI [.71, 1.21],  $d=1.18$ ,  $p<.001$ ] and a moderate sized reduction in minimizing [ $t(41)=3.18$ , 95% CI [.08, .37],  $d=.49$ ,  $p<.01$ ] was found after the group intervention. There was also a large-sized increase in PF at post-treatment [ $t(27)=-6.53$ , 95% CI [-1.22, -.64],  $p<.001$ ,  $d=1.23$ ]. There were no changes in parent reported use of distraction.

## Discussion

The primary aim of this paper was to describe the development and pilot study of a parent-targeted group intervention for pediatric chronic pain. Results suggest that the group intervention is generally feasible and attrition rates were consistent with previous research (Chacko et al., 2016). Attendance rates were somewhat lower than expected. However, it is likely that attendance rates were somewhat higher than found in this study because some parents who missed a session (e.g., due to previous commitments, being sick) were offered 30-minute “catch up” sessions the following week to receive missed information. Unfortunately, these “catch up” sessions were inconsistently recorded in attendance data. It is also possible that certain barriers (e.g., financial costs to travel and park at the hospital, scheduling) made it more difficult for parents to attend consistently. Further research incorporating parents’ perspectives on barriers to attending treatment will likely be important to maximize attendance.

Consistent with hypotheses and in line with previous studies, significant reductions in parental protectiveness, monitoring, and minimizing were found post-treatment (e.g., Coakley et al., 2018; Pielech et al., 2018). Only one other study to date has examined the effect of a group-based parent intervention on distraction and minimizing responses, and found significant decreases for both at post-treatment (Pielech et al., 2018). Though results for minimizing were consistent, this study found no changes for distraction at post-treatment. The role of parent distraction in pediatric chronic pain is understudied and less clear (Lee et al., 2020), and likely depends on context. For example, parent distraction that encourages youth to engage in valued activities may be more helpful compared to passive forms of distraction (e.g., watching TV). While this intervention did not aim to decrease parent use of distraction, the content aimed to increase parents’ PF and awareness of values. Thus, some items on the distraction subscale of the

ARCS such as “*Try to involve your child in some activity*” could be interpreted as congruent with this aim (e.g., engage child in a *valued* activity). Further research on the impact of parent distraction on youth pain and functioning will be important to better understand whether and how to target distractive responses in treatment.

A large-sized increase in parent PF was found, demonstrating that parents felt more able to tolerate their own distress and continue to engage their youth in valued activities despite pain. To date, PF has been examined as an outcome solely for ACT interventions. Although this group intervention included ACT components, it was predominantly informed by CBT. Therefore, interventions that include ACT components (though are not solely ACT) may still be able to produce changes in PF. Further research into key treatment mechanisms and ingredients utilizing larger sample sizes will be important to optimize interventions. In sum, a relatively brief, parent-targeted, group intervention appears to be an effective way to help parents decrease responses to pain that may be inadvertently reinforcing, as well as increase parent psychological flexibility. A strength of this paper is that it described the “real world” development, implementation, and feasibility/effectiveness of a novel group intervention within an existing outpatient interdisciplinary hospital clinic. Further, this is one of very few parent-targeted group intervention studies that has reported on pre- and post-treatment changes on all four parent responses subscales of the ARCS.

There are limitations that are inherent to conducting research and clinical trials in this setting. The intervention was offered as an augmented component to the youth’s treatment, and youth continued to receive other care within the clinic while parents participated in the group. Further, details on the youth/parent’s length of treatment prior to enrolling in the group intervention was not collected. Therefore, it is challenging to conclude the extent to which

changes can be accounted for solely by the intervention. Future research utilizing control groups (e.g., parents receiving individual interventions, waitlist controls) will be important. It is also possible that social desirability may have played a role in parental self-report (e.g., reporting less protectiveness because this was discussed as an ‘unhelpful’ parent response). This study did not control for other factors that may have impacted outcomes (e.g., youth’s duration of pain), and these may also be important to consider and control for in future research. Additionally, not all parents who participated in the intervention completed the pre- and post-treatment measures, highlighting feasibility considerations for conducting clinical evaluations within a “real world” outpatient setting. Finally, the parents who participated in this study were predominantly parents of White, adolescent females. Future research should strive to include diverse families and systematically collect and report racial demographic data to aid transparency. It is also critical for future research to examine whether interventions are generalizable and/or culturally sensitive.

Longer term follow-up studies are needed to better understand trajectories of change. Additionally, including youth outcomes to assess whether there are positive downstream effects is important; one study has found potential for benefits for youth whose parents participated in a problem solving intervention, although results were not maintained at 3-month follow-up (Palermo, Law, Bromberg, et al., 2016). Further, though this intervention included treatment components hypothesized to impact parent distress, this study did not include outcomes measures to assess change in these domains. Moreover, most of the research examining parent interventions has relied solely on quantitative data. There is a need to include qualitative research methods, such as focus groups and interviews, to obtain detailed information regarding the perceived benefit, barriers, and most important components of a parent intervention from parents themselves.

### **Clinical Considerations for Future Groups**

Diagnostic uncertainty is a common experience for parents (Neville et al., 2019). Given that we did not have specific inclusion/exclusion criteria (e.g., completion of all other medical diagnostics for pain), it is unclear whether diagnostic uncertainty may have impacted parent readiness and motivation for change in treatment. Research examining whether diagnostic uncertainty moderates intervention effectiveness and/or adherence is warranted. For example, it could be understandable that a parent may not complete the group intervention or “buy in” to this treatment approach if they are still seeking additional medical explanations for the chronic pain. Thus, it may be important to openly address the parent’s diagnostic uncertainty prior to their involvement in a group intervention, as well as include some discussion of diagnostic uncertainty within the group itself.

Additionally, whether the intervention is presented as mandatory or optional may be an important consideration, as parents with lower readiness to change may choose to not engage in an optional psychological treatment. Yet, making participation a mandatory part of the youth’s treatment may increase participation, but also the likelihood that some parents have not yet “bought in” to the treatment rationale, which may have implications for group discussion, cohesion, and process. Therefore, it may be important to assess parent readiness to change via questionnaires such as the Pain Stages of Change Questionnaire (parent report; Guite, Logan, Simons, Blood, & Kerns, 2011) and to target readiness via brief interventions such as motivational interviewing (Erickson et al., 2005) prior to treatment in order to optimize interventions.

Finally, most of the participants were mothers, although both parents were encouraged to attend the group. A previous study has found that a one-day parent-targeted pain workshop may



help mothers and fathers become more congruent in their perceptions about their youth's pain, although the impact of this on the youth's functioning was less clear (Donado et al., 2019).

Recruiting and retaining both mothers and fathers throughout an intervention will likely be more challenging and require greater flexibility on the part of the group facilitators that is still feasible within the setting (e.g., condensing into fewer weeks, delivering the group online).

### **Conclusions**

This paper outlined the development and implementation of a parent-targeted group intervention for pediatric chronic pain and is also one of two studies to date to examine the effects of a parent intervention on a variety of parent response styles, including distraction and minimizing responses. This intervention appears to be beneficial in decreasing maladaptive parent behaviors and increasing parents' PF. Future research examining additional outcomes, utilizing control groups, and including qualitative methods will be important to better understand important treatment components and optimizing intervention delivery. Continuing to develop standardized/manualized group intervention protocols will also be important to ensure consistency among parent interventions for pediatric chronic pain.

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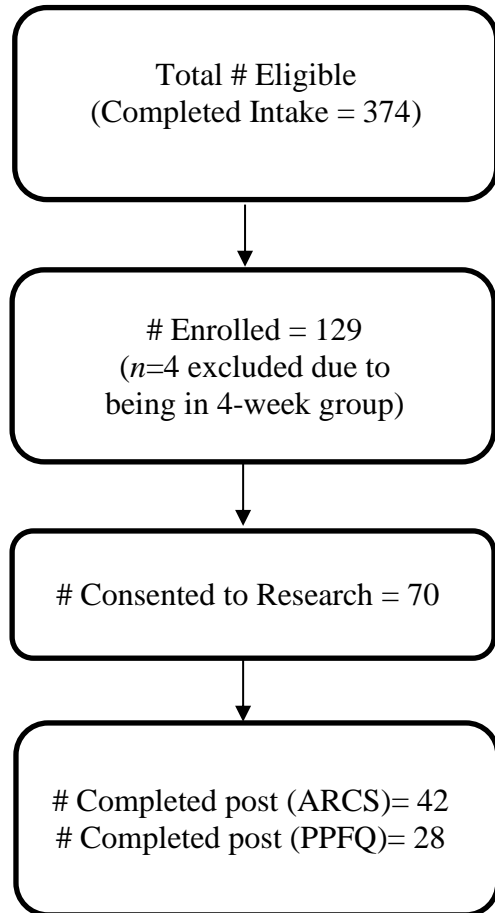
**Figure 1***Chart of Participant Flow*

Table 1

*Parent Group Structure, Content, and Aims*

<b>Content &amp; Activities</b>	<b>Aims</b>
<p><b>Week 1: Chronic Pain 101</b></p> <ul style="list-style-type: none"> <li>• <i>Mindfulness</i>: mindful breathing</li> <li>• Review group rules, privacy/confidentiality, and limits to confidentiality</li> <li>• Psychoeducation (acute vs. chronic pain, central sensitization)</li> <li>• Biopsychosocial model (<i>activity: apply to your child</i>), rationale for treatment</li> <li>• <i>Homework</i>: (1) Mindfulness, (2) reflect on responding to child in acute vs. chronic pain</li> </ul>	<ul style="list-style-type: none"> <li>• Introduce treatment approach and rationale; increase parent engagement, motivation, and group cohesion</li> <li>• Provide psychoeducation about chronic pain and encourage focus on functioning</li> </ul>
<p><b>Week 2: Impact of Pain on Families</b></p> <ul style="list-style-type: none"> <li>• <i>Mindfulness</i>: body scan</li> <li>• Chronic pain and youth development</li> <li>• Values and priorities (<i>activity: identify values</i>)</li> <li>• Coping strategies for parents (maintaining routines, social support, self-care)</li> <li>• <i>Homework</i>: (1) (re-)implement a family routine, (2) parent self-care activity</li> </ul>	<ul style="list-style-type: none"> <li>• Identify values; encourage responses that are aligned with values and not dictated by chronic pain</li> <li>• Target parent stress, increase coping</li> <li>• Encourage parent modelling of strategies</li> </ul>
<p><b>Week 3: Tools for Managing Your Child’s Chronic Pain</b></p> <ul style="list-style-type: none"> <li>• <i>Mindfulness</i>: mindful eating</li> <li>• Chronic pain and parent responses (<i>activity: case study</i>)</li> <li>• Tools for managing youth’s chronic pain</li> <li>• Validation and change strategies (<i>activity: case study</i>)</li> <li>• <i>Homework</i>: (1) Practice validation and change skills, (2) use a parent tool</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and alter unhelpful parent behaviors (e.g., protectiveness); provide alternative behaviors (e.g., modelling, attention to coping)</li> <li>• Reduce parent uncertainty around how to best support their youth</li> </ul>



**Week 4: Identifying and Overcoming Barriers**

- *Mindfulness*: loving kindness meditation
- Self-validation (*activity: generate a self-validating statement*)
- Common barriers to using parent tools (*activities: scenarios; identify personal barriers*)
- Overcoming barriers (*activity: identify ways to overcome barriers*)
- *Homework*: (1) Identify one way to overcome a barrier, (2) use a parent tool

- Target parent distress and encourage coping (e.g., self-validation)
- Encourage reflection and application of skills learned

**Week 5: School Partnerships and Celebrating Successes**

- *Mindfulness*: gratitude exercise
- School collaboration, accommodations, and school planning (*activities: ways to educate schools about chronic pain; scenarios*)
- Maintenance of gains, setbacks, and celebrating successes
- Wrap up

- Reduce parent uncertainty around how to best support their youth
- Identify and alter unhelpful behaviors
- Encourage reflection and application of skills learned
- Validate/normalize setbacks

Table 2

Range, means, and standard deviations of pre- and post-treatment outcome measures

<b>Outcome</b>	<b>n</b>	<b>Pre-treatment</b>	<b>Post-treatment</b>	<b><i>t</i></b>
		<b>Mean (SD)</b>	<b>Mean (SD)</b>	
Protectiveness	42	1.42 (.58)	1.01 (.52)	5.70***
Monitoring	42	2.84 (.84)	1.88 (.81)	7.65***
Distraction	42	2.77 (.63)	2.77 (.66)	0.00
Minimizing	42	0.63 (.58)	.40 (.41)	3.18**
Psychological Flexibility	28	3.49 (1.05)	4.42 (.78)	-6.53***

Note: \*\* represents  $p < .01$ , \*\*\* represents  $p < .001$