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Patients with pain are not all the same: Considering fear of pain and other individual factors in treatment outcomes

Laura E. Simons, PhD^{1,2}, Christine B. Sieberg, PhD^{1,2}, and Rachael M. Coakley, PhD^{1,2}

¹Division of Pain Medicine, Department of Anesthesiology, Perioperative and Pain Medicine, Boston Children's Hospital

²Department of Psychiatry, Harvard Medical School

Overcoming chronic pain is a daunting endeavor. Psychologists know a few things for certain about this process. We know that for many individuals psychological intervention is an integral part of successful treatment. We also know that cognitive, behavioral, biobehavioral, and acceptance-based models of care have proven to be the gold standards of psychological treatments for patients with pain. But, then our knowledge base gets a little fuzzier and here's why: evidence suggests that our prized gold standards of treatment only show modest to moderate effect sizes on pain-related outcomes^{1–3}, notably no better or worse than other modalities of treatment for chronic pain⁴. That's a big wake up call for all treatment providers and reminds us that we have quite a lot of work to do.

Indeed, psychologists are working fervently to build the evidence-base for the psychological treatment of chronic pain. We understand the need to move well beyond the generalities and get into the nitty-gritty. Broadly speaking, psychologists have generated a very strong evidence base for treating many emotional and behavioral disorders by learning how exactly to match effective treatments to specific presenting problems. But, it seems that in the world of pain management thus far, we have neglected the importance of matching the treatment to the patient⁵.

From a research perspective, it's easy to see how this has happened. Current evaluations of psychological treatment almost universally focus on specific subgroups of pain patients, such as patients with fibromyalgia, abdominal pain, or headache. This makes sense from a biomedical standpoint, but these diagnostic pain categories are not likely an effective means of distinguishing these patients from a psychological perspective. A patient struggling with pain is incredibly complex. They may or may not have significant depressive symptoms, adjustment difficulties, anxiety, avoidance behaviors, fear about re-injury, etc. Lumping patients together by presenting pain complaint does little to uncover the psychological challenges that may impact recovery.

At Boston Children's Hospital (BCH) we have an intensive day hospital rehabilitation program for children and adolescents with chronic pain that encompasses physical,

Correspondence to: Laura E. Simons, Ph.D. Boston Children's Hospital 21 Autumn St. Boston, MA 02115 Tel: (617) 919-4677; Fax: (617) 730-0759. Laura.Simons@childrens.harvard.edu.

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occupational, and psychological therapy with medical and nursing support, the Mayo Family Pediatric Pain Rehabilitation Center (PPRC)⁶. Psychological treatment at the PPRC currently includes a wide array of cognitive-behavioral, biobehavioral, and acceptance-based treatment strategies. Patients are exposed to many techniques and encouraged to ‘try them all’ and ‘keep what works’. Although we have the time and resources within this day-hospital setting to implement this ‘kitchen sink’ approach to psychological care, it is not an efficient model for outpatient treatment. Our goal is to be able to target our psychological interventions to maximize gains for each child.

The fallout from the failure to consider individual patient characteristics has had real and immediate consequences in our clinical treatment. Within our current model of care, patients with pain who engage in psychological treatment as part of their recovery progress through a series of trial-and-error attempts to determine what techniques are going to ultimately yield a positive result. Unfortunately, this can be quite discouraging to a patient with pain who may have already failed multiple other treatments before engaging in psychological services. In some cases this trial and error pattern of care can result in early termination of psychotherapy and a reluctance to return to treatment, with patients saying, “I tried it and it didn’t work”. Getting targeted psychological interventions in place early in treatment is essential. For this reason, psychologists are taking a new direction. Within the field of pain management, there is a growing literature demonstrating that the identification of patient-specific mood, cognitive, developmental, and behavioral patterns can help to inform individually tailored treatments leading to improved long-term pain-related outcomes.

One way we’re moving forward with targeting our care of pediatric pain is through examination of pain-related fear in children. Pain-related fear is well known to impede recovery in adults with pain⁷ and our recent work has demonstrated that it is associated with pain-related disability in children⁸. In examining how pain-related fear influences treatment outcomes in children, we found that a decrease in pain-related fear was associated with improvements in functional disability and depressive symptoms over the course of treatment⁹. However, we were surprised to find that patients with more pain-related fear consistently had less improvement in functional disability and depressive symptoms. We expected that children with *more* fear would actually derive *more* benefit from treatment (those with the most to gain, have the best results), but conversely pain-related fear was a risk factor for *less* treatment response. This suggests that patients who present with high levels of pain-related fear would benefit from psychological interventions that specifically target their fear response.

Fortunately, there are specific treatments to address pain-related fear in patients with chronic pain. For example, graded in-vivo exposure, a cognitive-behavioral treatment developed by Vlaeyen and colleagues¹⁰ exposes patients to activities previously avoided due to fear of pain or re-injury. Targeted treatments such as this have been shown to be very effective at improving functioning among individuals suffering with chronic pain and fear¹¹. But, this does not mean that *everyone* with chronic pain should engage in graded in-vivo exposure. Within our pediatric pain program, only half of patients report clinically significant pain-related fears. Thus, it is very likely that other individual psychological factors (i.e.,

depression, school avoidance) are more salient to address in other subgroups of pediatric patients.

Another way we are tailoring treatments is to go beyond addressing the impact of pain just on the individual patient. Within our pediatric population we are always mindful that targeted psychological care must also include parents. For example, we know that the way parents respond to their child's pain is associated with pain severity, functional disability, and other somatic complaints¹² and that even in the absence of poor coping strategies in the child, protective parenting responses lead to greater pain-related disability¹³. For this reason, at BCH we have initiated an intensive one-day workshop, "The Comfort Ability" that provides early and targeted parent training to parents of children with chronic pain¹⁴. Preliminary results suggest that parent behaviors can change after a one-day intervention and that these changes are still evident 3-months after the intervention.

With an extensive body of research showing that psychological factors are implicated in the recovery from chronic pain, psychologists have a very important task. We must identify what individual or family-level factors influence outcomes in patients with chronic pain, use theoretically grounded and well-tested interventions to target these factors, and test these outcomes in scientifically rigorous randomized control studies. In the field of chronic pain management we've known for a long time that psychological interventions are important. Now it is time to go beyond the 'one-size-fits-all kitchen sink' approach and start asking ourselves, "How do I tailor the psychological treatment to meet the needs of this particular patient with pain?"

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References

1. Williams AC, Eccleston C, Morley S. Psychological therapies for the management of chronic pain (excluding headache) in adults. *Cochrane Database Syst Rev.* 2012; 11:CD007407. [PubMed: 23152245]
2. Eccleston C, Palermo TM, Williams AC, Lewandowski A, Morley S. Psychological therapies for the management of chronic and recurrent pain in children and adolescents. *Cochrane Database Syst Rev.* 2009:CD003968. [PubMed: 19370592]
3. Palermo TM, Eccleston C, Lewandowski AS, Williams AC, Morley S. Randomized controlled trials of psychological therapies for management of chronic pain in children and adolescents: an updated meta-analytic review. *Pain.* 2010; 148:387–97. [PubMed: 19910118]
4. Turk DC, Wilson HD, Cahana A. Treatment of chronic non-cancer pain. *Lancet.* 2011; 377:2226–35. [PubMed: 21704872]
5. Turk DC. The potential of treatment matching for subgroups of patients with chronic pain: lumping versus splitting. *Clin J Pain.* 2005; 21:44–55. discussion 69–72. [PubMed: 15599131]
6. Logan DE, Carpino EA, Chiang G, et al. A day-hospital approach to treatment of pediatric complex regional pain syndrome: initial functional outcomes. *Clin J Pain.* 2012; 28:766–74. [PubMed: 22688602]
7. Vlaeyen JW, Linton SJ. Fear-avoidance model of chronic musculoskeletal pain: 12 years on. *Pain.* 2012; 153:1144–7. [PubMed: 22321917]

8. Simons LE, Kaczynski KJ. The Fear Avoidance model of chronic pain: examination for pediatric application. *J Pain*. 2012; 13:827–35. [PubMed: 22832693]
9. Simons LE, Kaczynski KJ, Conroy C, Logan DE. Fear of pain in the context of intensive pain rehabilitation among children and adolescents with neuropathic pain: associations with treatment response. *J Pain*. 2012; 13:1151–61. [PubMed: 23085089]
10. Vlaeyen JW, De Jong JR, Onghena P, Kerckhoffs-Hanssen M, Kole-Snijders AM. Can pain-related fear be reduced? The application of cognitive-behavioural exposure in vivo. *Pain research & management : the journal of the Canadian Pain Society = journal de la societe canadienne pour le traitement de la douleur*. 2002; 7:144–53.
11. Bailey KM, Carleton RN, Vlaeyen JW, Asmundson GJ. Treatments addressing pain-related fear and anxiety in patients with chronic musculoskeletal pain: a preliminary review. *Cognitive behaviour therapy*. 2010; 39:46–63. [PubMed: 19697175]
12. Claar RL, Simons LE, Logan DE. Parental response to children's pain: the moderating impact of children's emotional distress on symptoms and disability. *Pain*. 2008; 138:172–9. [PubMed: 18221837]
13. Simons LE, Claar RL, Logan DL. Chronic pain in adolescence: parental responses, adolescent coping, and their impact on adolescent's pain behaviors. *J Pediatr Psychol*. 2008; 33:894–904. [PubMed: 18375447]
14. Coakley RM, Barber BN. Overcoming common barriers to engagement in psychological services for chronic pain: A one-day intensive pain management workshop for youth and parents. *Pediatric Pain Letter*. 2012; 14:10–5.