

Commentary

Treatment-related expectations in pediatric chronic pain

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Positive expectations for treatment and recovery are associated with better health outcomes in adults with a range of health problems (Mondloch et al., 2001). However, less is known about treatment expectations in pediatric populations. Treatment-related expectations are cognitive beliefs and appraisals about the likelihood that certain events will occur during the course of treatment or as a result of treatment (Kirsch, 1990). Assessment of treatment expectations is a complex undertaking as both child and parent expectations may play a role in predicting outcomes. Despite this challenge, treatment expectations are particularly important to consider in pediatric chronic pain populations because patients frequently consult multiple providers to find pain relief (Bennett et al., 2000) and experience many encounters as unsatisfactory (Carter, 2002). These repeated, unsatisfactory experiences can reinforce expectations that future providers or treatments will not be helpful. In this commentary, we review the literature on treatment expectations for chronic pain outcomes in adults and the limited research focusing on children. We also provide future directions for measure development and research.

Variables associated with treatment-related expectations in adult populations

Health-related beliefs and treatment expectations are associated with the degree to which patients seek help, adhere to treatment recommendations, and/or become disabled. Treatment expectations are conceptually related to cognitive appraisals (e.g., Lazarus & Folkman, 1984), expectancy constructs including locus of

control and learned helplessness (e.g., Norman & Bennett, 1995), and nonspecific and placebo effects (e.g., Turner et al., 1994). In adults, expectations influence a range of health outcomes, including pain and analgesic use following surgeries and injuries (Mondloch et al., 2001). In adults with chronic back pain, high positive expectations for either massage or acupuncture predicted significant reductions in disability scores after treatment; such that the odds of improvement were 5 times higher in patients with high expectations for the treatment they received (Kaluokalani et al., 2001). However, among adults receiving procedural treatments (e.g., nerve blocks, infusions), physician expectations of pain relief, but not patient expectations, predicted pre-post procedure changes in pain ratings (Galer et al., 1997). Thus, there are mixed findings in adult populations about whether patient expectations directly affect outcomes.

Measurement of treatment-related expectations in pediatric and adult populations

In a review of randomized trials of psychological treatments for pediatric pain, Eccleston et al. (2002) noted that 8 of 18 studies (44%) included measures of treatment credibility or expectations. However, few of these studies specifically report how expectations predicted outcomes, despite calls to assess treatment-related expectations in psychological trials for pain as potential predictors or mediators of effects (Turner et al., 1994; Yates et al., 2005). In the pediatric literature, measures to assess expectations tend to be simple and have been used to control for bias rather

than as primary predictors of treatment outcomes. For example, measures have included Likert scale items to assess child and parent confidence and credibility ratings of a biofeedback treatment (Scharff et al., 2002) or a single VAS rating (anchored with "Don't think it will help at all" and "Think it will help a lot") to assess children's expectations for how much a psychological treatment would help (Hicks et al., 2006). Tsao and colleagues (2005) conducted a comprehensive assessment of patient and parent expectations regarding various complementary and alternative medicine (CAM; e.g., hypnosis, acupuncture) and conventional treatments (e.g., medications, surgery) using closed-ended, 5-item response scales ranging from 1 = "Not at all helpful" to 5 = "Completely helpful", however this study did not examine the relationship between expectations and outcomes. The one study reporting on the relationship between expectations and outcome found no relationships between either parent or child expectations and the outcome of a psychological treatment for recurrent pain (Hicks et al., 2006).

Studies in adults have utilized similar methods to assess treatment-related expectations (Mondloch et al., 2001), but some researchers have developed more comprehensive measures. Measures typically assess general expectations for prognosis, but some broaden the scope of assessment by averaging expectations across a number of treatments (e.g., Kalauokalani et al., 2001). Other investigators have examined expectations related to specific outcomes, such as whether patients expected reductions in pain severity, frequency, more rapid relief, improved quality of life, or a cure for the pain condition (Patrick et al., 2003; Kelman, 2006). While more complex, multidimensional measures seem promising, they have not been used in pediatric populations and little is known about their psychometric properties.

Need for development of pediatric measures of treatment expectations

The development of pediatric measures of treatment expectations is important from both a research and clinical standpoint. The assessment of treatment expectations is an important component of high-quality clinical trials (Yates et al., 2005),

therefore the development of reliable and valid measures will improve the quality of future trials. In clinical settings, treatment expectations are frequently assessed unsystematically via intake questionnaires and interviews. Incorporating standardized measures into clinical contexts can help clarify patient beliefs and expectations that are often difficult for clinicians to determine, as patients do not always share expectations with providers (Bell et al., 2001). Treatment recommendations frequently entail multiple components and providers. Thus, measures need to be developed that account for expectations for individual components of a multimodal pain treatment program, and for the program as a whole. For example, outpatient psychology services may be perceived as more or less helpful relative to physical therapy. Moreover, it is advisable to assess both parent and child perspectives related to treatment expectations, as parents communicate their own expectations to their children.

Well-developed measures in the child mental health literature might be adapted to address this need, including measures of parental expectations for treatment (Nock & Kazdin, 2001) and measures assessing perceived barriers to treatment efficacy and adherence (Colonna-Pydyn et al., 2007). These measures include simple items with closed-ended responses such as: "I expect that because of this treatment my child" (1 = "will not improve" to 5 = "will improve quickly"), and items assessing potential reasons why expectations are positive or negative, such as: "(This treatment) did not focus on my life and problems" (1 = "never a problem" to 5 = "very often a problem"). In addition, methodology that indirectly taps into patient and parent perspectives by eliciting treatment-related expectations may assist with additional measure development. This approach may help to obtain a more accurate assessment of beliefs and expectations that families have prior to an initial pain evaluation by reducing potential social desirability bias that can influence responses (Logan et al., 2008). Standardized vignettes have been used in which children respond to scenarios about a peer with problems similar to the patient (Guite et al., 2008)¹. Other constructs that may inform the development of pediatric measures of treatment

expectations include pain beliefs such as appraisals about a child's ability to accept or reduce their own pain (Walker et al., 2005). A patient's "readiness to change" or adopt a self-management approach to coping, which is associated with improvement in multidisciplinary pain treatment and pain coping in adults (Kerns & Rosenberg, 2000; Jensen et al., 2004), may also be a useful construct. Readiness to change has been studied related to health behaviors and adherence in other pediatric populations, but would also be applicable to pediatric chronic pain, particularly when treatment recommendations require substantial self-management and behavior change (Sindelar et al., 2004). Taken together, this existing work can inform the development of measures that not only accurately capture how helpful children and parents think a treatment will be, but also elicit information about how realistic expectations are, why expectations are positive or negative, and what barriers to positive expectations might exist.

Other future directions for research

Beyond measure development, there are two broad areas that need further study. First, how important are child and parent expectations in predicting outcomes in this population? This could be examined both in pain clinics and in the context of clinical trials. In the pain clinic setting, expectations might be examined as predictors of treatment outcome, use of services, and satisfaction. In clinical trials, expectations might be examined as covariates or potential mediators of treatment effects. Positive expectations may inflate the observed effects of treatments, and novel treatments, which are often tested in clinical trials, have been shown to have higher nonspecific effects (Turner et al., 1994). These will be important hypotheses to examine in future research.

Second, if expectations prove to be important predictors of treatment outcomes, how can we best improve or enhance patient expectations? The process of referral, assessment, and feedback to families likely varies significantly across pain clinics and providers, but much of the communication that occurs throughout this process may impact expectations. Collaborative and clear communication can lead to shared decision-making

and goal-setting, in which both patient and provider knowledge and expectations are taken into account. In adults, there is evidence that when physicians provide clear explanations about symptoms and optimistic predictions, this raises patient expectations and leads to better health outcomes for minor ailments (Fassaert et al., 2008). Adult studies have also shown that actively engaging patients in shared decision-making about treatment options increases the likelihood that treatments they receive are aligned with their most positive expectations (Frantsve & Kerns, 2007). Similar physician communication patterns are likely to be important in pediatric populations. Examining the communication of expert clinicians might provide some clues about things providers can do to help patients have more positive and realistic expectations. Clinicians who are better able to adjust and communicate necessary treatment recommendations based on verbal and nonverbal cues provided by children and their parents may be more likely to facilitate successful treatment outcomes (Lewis et al., 1991). Research on specific psychological techniques designed to increase collaborative problem-solving, improve health behaviors, and increase readiness to change, including motivational interviewing, may elucidate how providers can help create optimal treatment expectation conditions so that treatments can most effectively relieve pain and improve functioning (Sindelar et al., 2004). There is evidence that an educational video can impact parental knowledge and attitudes about pain management in acute pain settings, and this type of standardized educational approach might be helpful in chronic pain settings (Greenberg et al., 1999). Individual clinics have developed educational materials for patients, but these types of resources have not typically been researched and it is largely unknown whether they impact treatment expectations.

While the pediatric pain field has made some initial progress in assessment of treatment-related expectations, more work is needed to standardize and validate assessment. Furthermore, additional research is needed to determine how providers can best impact expectations, and to examine the role that both patient and parent expectations play in treatment outcomes. Ultimately, efforts to improve

measurement of pediatric pain-related treatment expectations will provide a foundation from which to further understand the role that treatment-related expectations play in clinical outcomes.

Endnote

¹ This measure is available from JW Guite (guite@email.chop.edu).

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