

Commentary

Challenges of assigning a biopsychosocial pediatric pain diagnosis, in a biomedical world

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The biopsychosocial model as applied to pain medicine provides a framework for understanding how diverse biological, psychological, and environmental factors interact to influence a person's overall experience of pain (Novy & Aigner, 2014; Maixner et al., 2016). This model can help clinicians in their approach to conceptualize and treat pediatric chronic pain. However, as most families have come to expect a biomedical model to direct their diagnosis and care, incorporation of the biopsychosocial model may be unsatisfying and foreign when utilized to explain pain diagnoses to patients and their families. Most diagnostic approaches point to a biomedical etiology and fail to incorporate knowledge related to the psychosocial mechanisms contributing to a child's chronic pain condition (Fillingim et al., 2014; Schechter, 2014). In addition, most healthcare providers are familiar with a biomedical rather than a biopsychosocial approach, and generally have limited training in pain medicine (Arnaudo, 2017; Zangoni & Thomson, 2017).

A recent experience in our pediatric complex pain clinic led us to question the importance (and challenge) of applying a pain diagnosis in a biopsychosocial framework. Given the widespread acceptance of the biomedical model, must we identify specific changes to the central or peripheral nervous system that are contributing to pediatric chronic pain, to get buy-in from patients and families? Would this serve as a gateway for a

biopsychosocial explanation, and psychosocial pain treatments that are essential in many cases?

A 16-year-old female was referred to our clinic with chronic hip pain. During our interdisciplinary consultation, we found that she had biological, psychological, and social factors contributing to her pain presentation. Psychological factors included symptoms of depression and anxiety, and poor sleep. Social factors included having a disabled older sister. Physical examination revealed that there was evidence of a hip tendinopathy, which contributed to the overall pain she was reporting, although this contribution was minor.

When it came time to explain her pain utilizing the biopsychosocial framework, her mother latched onto the diagnosis of her daughter's possible underlying tendinopathy. She wanted further management of the tendinopathy, even though our assessment determined that her accompanying psychological and social factors were significant (and likely the major) drivers of her chronic pain. This led us to question, if chronic pain is present and recognized to be driven by a combination of biopsychosocial factors, from a pathophysiological standpoint, does the diagnostic label really matter? Are most patients and families expecting a biomedical diagnosis? In our experience, it seems easier for patients and families to accept a biological explanation for the pain, rather than a psychological or social one. Most diagnostic tests rely on pain provocation, but this only informs us of

mechanical sensitivity, not a specific kinesiopathology, which is often assumed. In chronic pain with peripheral sensitization, mechanical sensitivity is often not related to ongoing tissue injury.

The biopsychosocial model has been well-validated within pediatric pain medicine. Initiated by Varni (1995), it has been corroborated in multiple studies, including recently whereby pediatric functional disability was significantly associated with patient pain intensity, anxiety, pain coping, and parent functional disability – all factors identified within the biopsychosocial model (Vetter et al., 2013). The biopsychosocial model also provides a framework by which pediatric pain is managed, emphasizing the roles of biological, psychological and social/environmental interventional pain therapies in the management of pediatric pain (McGrath et al., 2014). Conversely, the biomedical model is often not supported in most current research. For example, in adolescent neck pain, a randomized controlled trial of 1108 patients found no association between poor posture and neck pain or headaches, although a significant association was found between pain and mood (Richards et al., 2016).

However, it remains that the medical world we live in often compels us to apply a specific biological diagnosis when communicating with our referring colleagues. This is especially true of our patients and their families, who tend to seek closure and comfort with a label or diagnosis, preferably with a biological derivative. This is challenging to do when we recognize that the pathophysiology of pediatric pain is multifaceted. It may also give more credence to one factor over another, which can be difficult to discern or may even be inappropriate. There is evidence to suggest that focusing on tissue or kinematic dysfunction may actually reinforce fear-avoidance and pain-related disability (Darlow et al., 2013; Moseley & Butler, 2015). Referring to the case of the 16-year-old presented above, we questioned whether explaining her pain primarily as a tendinopathy would help her manage her co-occurring psychosocial factors? Would explaining the pathophysiology of the child's pain condition to the mother in the context of biomedical

underpinnings help her buy into the chronic pain diagnosis and the biopsychosocial model?

We believe the biopsychosocial model should provide the framework for how pediatric pain is diagnosed, explained to patients/families, and shared with colleagues. When describing chronic pain pathophysiology with families, it is important to underscore that the child's pain experience is influenced by physical/biological, psychological and social factors. The explanation to the family requires a re-education (from the biomedical model) that needs to come from the pain physician and team. They must present the diagnosis in such a way that the family understands that chronic pain is multifactorial, and it requires a multifaceted approach for effective treatment. There is a risk that emphasizing the psychological contributions of chronic pain will leave the impression with the family that the child's pain is all in their head, which is an adage that is all too common. This is an often an unintended and unfortunate consequence of an unsuccessful explanation of the biopsychosocial model. Conversely, taking an approach that focuses on biological factors can overmedicalize the pain and lead patients/families away from the necessary therapeutic interventions that will address the co-occurring factors that can serve to maintain their child's pain condition. The key for providers is to strike an appropriate balance in their conceptualization of the child's chronic pain to the family, avoiding a biomedical emphasis, but also steering away from explaining chronic pain solely as a psychological phenomenon. This can be facilitated by the use of analogies and metaphors (Coakley & Schechter, 2013). Similarly, education of colleagues should include a discussion of the various biopsychosocial factors that are contributing to a child's pain experience, and the multidisciplinary approach required for treatment.

The introduction of chronic primary pain to the ICD-11 classification is a welcome addition to this classification system that is long overdue. Going forward, this classification will guide future pain research and health policy. However, a chronic primary pain diagnosis may still be challenging for patients and their families to accept if they believe strongly that a concrete identification of an underlying illness (usually biomedical) leads to a

cure (Schechter, 2014; Treede et al., 2015). Unless an ICD-11 category explicitly states the importance of a biopsychosocial approach, it may still remain hollow in obtaining buy-in.

Our clinic includes the following statement in our handouts to patients at the end of our initial consultations – “treatment for chronic pain is multimodal, thus requiring a biopsychosocial approach.” Simply put, it shouldn’t really matter what the pain diagnosis is, as long as we recognize the interplay of these factors in propagating the pain cycle, and do our due diligence in explaining this to the patient and family. Our clinic consultations are attended by practitioners from multiple disciplines, including medicine, physiotherapy and psychology to emphasize to families the biopsychosocial framework and importance of multidisciplinary management. Having initial consultations with our entire team demonstrates to patients that one practitioner and one approach alone are often insufficient to manage chronic pain.

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We believe broad utilization of the statement above by others who provide care for patients with chronic pain complaints will underscore the importance of the biopsychosocial model in all domains of chronic pain – reflexively, from diagnosis to management. Though the biopsychosocial model is accepted by many, the introduction of this model earlier in the patient’s journey by all care providers would decrease uncertainty and improve acceptance by families. As a pain specialist, we often need to undo previous beliefs about pain, improve understanding and knowledge, and move towards acceptance of the diagnosis and treatment. Moving away from the biomedical model and towards the biopsychosocial model in chronic pain, while improving education of the patient, family and all providers, will ultimately bring us closer to where we need to go in the field of pain.

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