

Commentary

Chronic pain is like...

The clinical use of analogy and metaphor in the treatment of chronic pain in children

*"Metaphors may be as necessary to illness as they are to literature,
as comforting as a bathrobe and slippers." (Broyard, 1992)*

Rachael Coakley and Neil Schechter

In this paper, we will review and catalog some of the analogies and metaphors that can be used to describe chronic pain and its treatment to children and their families. There are many reasons why, particularly in the field of chronic pain, it is valuable to use creative analogies and metaphors to explain complex medical phenomenon. Analogies and metaphors, it seems, may help patients to understand the complexity of chronic pain in an accessible way that likely reduces resistance and helps them to rethink preconceived notions about pain. If a clinician is explaining how heart failure impacts the body, he or she is creating the knowledge base of the patient. When a clinician is discussing how chronic pain can occur or persist without ongoing disease or trauma, he or she must undo the patient's intuitive understanding of pain, which stems primarily from a lifetime of experiencing acute pain and differs in many important ways from the experience of chronic pain.

Providers in the field of pain medicine need to be prepared to fully engage in a creative explanation of chronic pain that promotes diagnostic clarity and sets the stage for effective treatment. Many families present to pain clinics feeling defensive and disengaged because they were told by other providers (or perceive they were told) that their child's pain is likely the result of a psychological disorder. They may also carry a sense of frustration

and hopelessness because despite extensive evaluation and intensive treatment, they perceive that nothing seems to have helped their child's pain and incapacitation. Additionally, many of the treatments for chronic pain can seem counterintuitive for parents and children (i.e. increased activity, psychological therapy) and the provider must have effective strategies for helping patients to reconceptualize their understanding of pain and pain treatment. There is clear evidence demonstrating that accurate knowledge about the biology of pain is associated with increased pain thresholds, reduced frequency of pain, improved functioning and reduced catastrophizing (Moseley, 2002; Moseley et al., 2004). And there is emerging research to show that the use of metaphors is more effective as compared to standard educational interventions when it comes to helping patients understand the complexity of chronic pain (Gallagher et al., 2013).

The analogies and metaphors that will be discussed within this article can provide a template to explain the onset, maintenance, and treatment of chronic pain in a clear, meaningful, and jargon-free way. We recognize that many seasoned clinicians already have developed unique and creative analogies or metaphors of their own. We offer these, however, with the hope that they will spur new ways for those who care for children with chronic

pain to explain this confusing phenomenon. We also hope that the use of these child- and family-friendly explanations will help to foster the growth of a strong provider-patient alliance that may in turn improve the long-term trajectory of a family's experience with chronic pain.

Background

The past decade has witnessed an outpouring of research that has clarified our understanding of chronic pain. Through our increasing knowledge of the role of the hypothalamic pituitary axis, descending noxious inhibitory control, pain genetics, autonomic nervous system, immune system, and the neurochemistry and neurophysiology of the transmission of nociceptive information, we have come to appreciate the concept of central sensitization which describes the process by which nerves can become hypersensitive to noxious or minimally noxious stimuli. This explains how a variety of factors (e.g. genetic predispositions, inflammation, trauma, previous pain experience, anxiety, depression, stresses of all types) can create a vulnerability to pain that various triggers can then amplify. Children's experience of pain is further influenced by their interactions with their parents as well as social modeling. It is evident; therefore, that the etiology of chronic pain cannot be reduced to the traditional dichotomous view that it is either physical or psychological. It is far more complex, and consideration of all the factors that influence the experience of pain is necessary to help us to understand why a noxious stimulus may create persistent pain in one individual and not another.

Implicit in this model which emphasizes the complex multifactorial notion of pain perception is the need for a multidisciplinary approach to pain that often includes physical, psychological, and pharmacological interventions. It is critical for families to understand that reducing their child's experience of pain may require a cadre of interventions, none of which necessarily imply causation. For example, suggesting increased physical activity in fibromyalgia does not imply that decreased activity was responsible for its onset. Similarly, use of psychological strategies to dampen nerve hyperarousal does not imply psychological origin as the sole etiology for the problem.

Although it is always important that a clinician explain any medical condition or treatment to families in a way that can be easily understood, it is particularly important when dealing with chronic pain. We know that the sooner families are comfortable with the idea that pain can, and often does, persist without a clear underlying etiology, and that the recovery from chronic pain requires a multidisciplinary approach, the sooner they can interrupt the chronic pain cycle and begin the recovery process (Lindley et al., 2005).

So, how can we best explain the complicated and often counterintuitive nature of chronic pain treatment to parents and children? How do we get families to understand that chronic pain is indeed a medical problem that needs treatment, though the treatments may be different from what the family has expected? And how do we create a strong alliance with families that will halt their search for more medical solutions and encourage them to truly engage in a multidisciplinary plan of treatment? We propose that the use of analogy or metaphor may provide a creative inroad to these challenging aspects of care that are inherent in our practice. Providers may also find that a simple quick sketch or visual aid can readily accompany many of the following explanations and may help to further solidify the concrete visual elements that are described within these analogies and metaphors.

Pain analogies

Below we review many of the pain analogies we have collected from books, manuscripts, Internet resources, and our esteemed colleagues. We have classified the analogies into four explanatory groups: (a) the difference between acute and chronic pain, (b) pain transmission/spreading, (c) factors that impact the experience of pain, and (d) pain rehabilitation.

The difference between acute and chronic pain. It appears that the nociceptive pathway evolved, at least in part, to protect the organism from harm by alerting him or her to pending danger. For example, the pain that emanates from walking on a broken leg may prevent the further damage that will accrue with additional weight bearing. Similarly, the searing pain associated with inadvertently placing your hand on a hot stove will

cause reflexive withdrawal, which will minimize additional burning. We know that individuals with the rare anomaly of congenital insensitivity to pain often have missing digits, poorly healed fractures, and persistent infections because that alerting system is not present. In chronic pain, as opposed to

acute pain, pain has lost its protective function; as opposed to congenital insensitivity to pain, it is always present even if there is no danger. Several analogies have evolved to describe this phenomenon.

Alarm system

There are several variations on the use of an alarm system as an analogy for persistent pain. The idea is that the original trigger for the pain has ceased, but the pain signals (alarm) continue to be transmitted.

- Persistent pain is like a doorbell that goes haywire. Usually when you press a doorbell it rings one house one time and that's all. But, in the case of chronic pain, it's as if the doorbell on one house actually rings every house on the block. And the doorbell doesn't just ring once, it rings all day and all night (Tupper, 2012).
- Chronic pain is like a broken alarm clock. Imagine that your morning alarm clock goes off at 7 am, and you roll over to hit the snooze button, but it doesn't turn off like it's supposed to do. You try banging the snooze bar, switching the alarm off, unplugging the clock, taking out the batteries, and even throwing it out the window, but it still keeps ringing. You're clearly awake at this point, so the ringing alarm clock is not doing any good anymore, but it just won't turn off. The pain alarm in our body can be just like this broken alarm clock. It can just keep ringing and ringing even though it's not helping us in any way (R. Coakley).
- Chronic pain is like a car alarm. Sometimes a car alarm can go off even when there is no sign of danger. For example, sometimes a large truck passing by can accidentally set off a car alarm in a parked car. Or, sometimes a car just needs to be gently bumped in order to activate the car alarm. Some car alarms, it seems, are very sensitive, while others hardly go off at all. The purpose of the car alarm is to alert other people that the car is in danger. However, when the alarm goes off accidentally and there is no sign of danger, it's really just a false alarm. Cars with sensitive alarms send out more false alarms and people with more sensitive nervous system can have more false alarms (pain sensations) as well (C.T. Chambers, personal communication, 2013).

Technology glitch

Everyone has had the experience of technology that has not worked as planned. This analogy works well when discussing that persistent pain itself can be like a technology failure or glitch.

- Persistent pain is like a software failure. When your computer freezes or crashes, it's almost always a software error. If you looked inside the computer you wouldn't find anything wrong with the hardware. You don't run out to a computer store and replace the hard drive or internal modem, because the problem is the software, not the hardware. Chronic pain is a problem with the software. There is nothing wrong with the hardware in the body (e.g. bones, muscles, organs), but the software that sends messages throughout your system has a glitch (N. Schechter).

Pain transmission. Over the past 20 years we have gained tremendous knowledge in our understanding of pain transmission and nociception. This is very important for families to understand in

non-technical terms. Reducing the severity and frequency of pain transmission is a major goal of treatment and families need to understand how we conceptualize and approach that goal.

Railroad crossing gate

The gate control theory is a very popular theory, originated in the early 1960's by Melzack and Wall. This theory posits that there is a virtual gate that controls the magnitude of the pain signal that reaches the brain (Melzack & Wall, 1965). It can be effective to describe the path to families as an actual gate.

- You can think about pain signals being like trains passing through a railroad crossing gate. When the gate is all the way open, trains pass right through. Similarly, when the gate to your brain is open, pain signals have free access to your brain. Medication might close the gate partway, but for many people, medications do not close the gate completely. Other interventions such as learning cognitive behavioral therapy skills, distraction, engaging in acupuncture, and increasing activity can all be effective ways to close the gate and help to keep it closed.

Factors that affect the experience of pain. Pain is influenced by many factors including the amount of attention given to the pain, the meaning that is ascribed to the pain, past experience, family history, and both physical and emotional stressors.

There are several analogies that help people to understand that the interpretation of the pain stimulus plays an important part in how much suffering and disability is associated with pain.

Old house

- Pain is affected by how much we attend to the pain sensation. You can think of pain intensity being like the experience of trying to go to sleep in an old house. If you listen quietly, an old house will often creak and groan at night. If these sounds are familiar because they happen all the time, you assume they are just normal creaks and groans, do not pay much attention to them, and drift off to sleep. But, if someone had broken into the house recently, then you'd be on high alert. You'd pay close attention to every creak or groan, wonder if it meant that someone was trying to break into the house again, and stay awake for hours. Similarly, if you don't attend to your pain you may find you don't have too much difficulty doing what you want to do. But, if you think a lot about what all your pain might mean, or attend to how much the pain is bothering you, you will find that the pain interferes more with your life (S. Tupper, personal communication, 2012).

Scratch on leg

- Pain is affected by our past experiences. If you are walking through the woods and feel a scratch on your leg, you'd probably keep going and not pay much attention to the scratch because you'd assume, perhaps, that a small twig had just scratched you. But, suppose you discovered that the scratch you felt was actually from a snake bite and was a very serious injury. Then, the next time you were walking in the woods and felt a small scratch on your leg, you'd probably jump up and down and scream in pain. Even if the second scratch was very small and really was from a twig, your brain would make it feel like it was the worst pain in the world because it would want it to make sure that you could not possibly ignore the injury this time (Moseley, 2007).

Volume control / Dimmer switch

- The nervous system in your body is like the volume control on your iPod. When the nervous system volume is low, you have little pain. When the nervous system volume is up high, you may experience a lot of pain. Alternatively, the nervous system can be described as a dimmer switch. When the light is low, the nervous system is calm and there is little pain, and when the brightness is turned up the nervous system is more activated which can lead to more pain. This dial in your nervous is turned up or down depending on many factors including how much you think about your pain, how much activity you do, the medications you take, your past experiences, how much you worry about what's wrong, how good you are at distracting yourself (K. Goldschneider, personal communication, 2012; N. Schechter).

Foreign language

- Pain is like your body trying to tell you something in a foreign language. Sometimes it's very difficult to understand what your body is saying. For example, ongoing pain can sometimes be your body's way of telling you there's another problem in your life, like being overworked at school, having family stress, or being very worried about other things. Once you learn how to understand your body's language, you may learn that the onset of pain is your body's way of saying you need to take a break, increase activity, or find new ways to manage stress (S. Remke, personal communication, 2012).

Pain rehabilitation. Motivating patients to participate in a multidisciplinary approach to care is an important aspect in pain treatment. The analogies below help to frame the recovery from chronic pain.

By likening this process to something familiar, patients may be more inclined to feel they can be successful with recovery.

Athlete

- The recovery from chronic pain is more like an athlete on the mend, than a sick person waiting for a cure. Athletes don't wait until they feel entirely better to get back to the game. They get back to their sport a little bit at a time as soon as they can. They follow a careful schedule to increase their function, being mindful not to overdo it in the beginning. The goal is to restore their function and get back on the field. Most athletes know that it can be hard work to get back in the game, but they keep their eye on the goal and move forward bit by bit. Athletes in training also recognize that while training to get back to a sport, some muscle pain or conditioning pain can often be a good sign - it can mean that muscles are getting stronger (C. von Baeyer, personal communication, 2012).

Seesaw balance

- The recovery from chronic pain is like learning to balance a seesaw. In the recovery from chronic pain it's important to get the skills and tools you need to keep the seesaw balanced. Sometimes people may have a really good day and the seesaw tilts up too high. On really good days, people may deny that pain is a problem at all, overdo activities, stay up too late, or skip medications altogether. These behaviors can unfortunately lead to one or more really bad days when the seesaw tilts down too far. On a really bad day people may feel they can't do any activity, feel they are sick, and believe they cannot function in their daily life. The goal is to keep the seesaw balanced by pacing with new activities and maintaining slow, steady progress. The tools you need might need to keep the seesaw in balance may include medication, physical therapy, and cognitive behavioral therapy to name a few (C. von Baeyer, personal communication, 2012).

Car with flat tires / Legs on a stool

- The recovery from chronic pain is like trying to get a car with four flat tires moving again. You can fill one tire with medication, but you still won't go anywhere unless you fill the other three tires. You might fill one tire with cognitive behavioral skills, one with physical therapy, and one with acupuncture (The American Chronic Pain Association, 2013). A similar analogy is that a stool requires all four legs to stand. Each treatment modality can be conceptualized as a leg on the stool and without all four legs; the stool won't stand (B. Dick, personal communication, 2013).

Bonfire

- Recovery from chronic pain is like the challenge of trying to put out a bonfire that's been burning for a long time. When you throw water on a fire like this, only the flames go away. The coals are still smoldering underneath and the fire can flame back up at any time. Many pain medications are kind of like throwing water on this bonfire. They may put out the flames temporarily, but don't work well on the hot coals. We have to look beyond medication treatments to figure out how to get those coals extinguished (Conway, 2012).

Onion

- Chronic pain is like an onion. It has many layers and you have to peel back all the layers to understand the whole experience of pain. In the middle of the onion may be the injury, illness, or event that got the pain started in the first place. But, around that are many other layers. One layer is the perception of pain, another layer is the suffering caused by the pain, another layer is how people express their pain in actions (i.e. pain behaviors), and another layer includes understanding the social environment in which the pain occurs. Effective treatments for pain must address all of these layers (Loeser, 2000).

Mountain climber

- The recovery from chronic pain is like climbing a mountain. Mountain climbers don't often plan a direct route straight to the top of the mountain. Instead they often have to zigzag their way to the top. When they run into obstacles such as bad weather, too rocky a terrain, or too steep a climb, they don't fall off the mountain altogether. Instead, they pick a new path up to the summit. Sometimes this means that they may have to backtrack a bit, but they do this knowing it will help them to reach the top. Minor setbacks don't mean they have to go back to the base of the mountain, just that they need to get a new plan on board to reach the summit (C.T. Chambers, personal communication, 2013).

Discussion

By the time patients finally make their way to a pain clinician, they often feel frustrated, confused and dismissed. Additionally, most patients are in a diagnostic holding pattern - unable to engage in treatment because they don't fully understand the problem, much less the treatments that are indicated. For this reason, it is critical that pain clinicians find a way to help them understand the complex nature of chronic pain and build an alliance that can help

foster improved long-term outcomes.

Explaining the physiology and treatment of chronic pain in an accessible way to children and families not only demystifies the often counterintuitive world of chronic pain, but may further promote a strong alliance between provider and patient which can translate to improved long-term outcomes (Smith, 1995). In our clinical experience we have found that the use of analogies and metaphors can be a very useful way to help

explain the often complex nature of chronic pain and chronic pain rehabilitation. Additionally, emerging research provides empirical support for this approach. In a recent blinded randomized-controlled partial cross-over trial, Gallagher and associates found that the use of metaphor increases knowledge of pain biology and decreases catastrophic thought processes about pain and injury when compared to general educational approaches (i.e. psychoeducation, advice giving; Gallagher, et al., 2012). Of course, these pain explanations are not sufficient on their own and we recognize their utility as part of a broader discussion about chronic pain and pain treatment. Moreover, we suggest that providers who use these analogies have a comprehensive understanding of the underlying mechanisms that they are trying to explain.

There are enormous deficits in our research base regarding teaching tools for chronic pain education. We have identified no evidence that compares the efficacy or comprehensibility of these particular analogies and metaphors, examines whether or not their use directly fosters additional adherence with medical advice, reduces subsequent doctor shopping, or yields better outcomes. It is clear, however, that our historic approach to explaining pain to children and families has been suboptimal. New approaches are clearly necessary and it is our hope that this paper stimulates

discussion and research into new ways to convey important information to families, which may result in improved confidence in our care, increased adherence to our prescribed interventions, and, most importantly, improved outcomes.

Rachael Coakley, PhD
Pain Treatment Service, Boston Children's Hospital; Department of Psychiatry, Harvard Medical School, Boston, MA, USA
email: rachael.coakley@childrens.harvard.edu

Neil Schechter, MD
Chronic Pediatric Pain Multidisciplinary Clinic, Boston Children's Hospital; Department of Anesthesia, Harvard Medical School, Boston, MA, USA

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