

LETTERS TO THE EDITOR-IN-CHIEF

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REGARDING “UNRAVELING THE COMPLEXITY OF LOW BACK PAIN”

We are writing regarding the invited commentary by O’Sullivan et al titled “Unraveling the Complexity of Low Back Pain,” published in the November 2016 issue of *JOSPT*.⁸ First, we would like to thank the authors for their excellent and timely article on the topic of low back pain (LBP). We hope this article will push clinicians to question some of their beliefs about LBP management and take a more inclusive view of the patient’s pain experience. As stated in the article, few gains in the management of LBP have been seen over the last several decades. Between 1990 and 2011, Global Burden of Disease studies identified LBP as the most burdensome nonfatal condition, with a prevalence 6 times that of angina and twice that of depression.¹⁵ As we examine how to improve on our clinical and societal management of LBP, however, we would like to draw attention to a few points of discussion from the perspective of the clinician.

While recognizing the nature of clinical commentaries as a unique perspective on a particular issue, we perceive a bit of a pendulum swing in the article’s lack of mention of any nociceptive contributors to LBP. Certainly, nociceptive contributors exist, and are a crucial component of Louis Gifford’s “mature organism model.”⁷ Smart et al¹³ have also highlighted identification of 6 symptoms and 1 sign associated with presumed dominance of nociceptive contributors. As the article by O’Sullivan et al⁸ refers

to LBP in general, it may be lost on some readers that some acute presentations of LBP have a biochemical or mechanical component that should not be ignored. In some patients with lumbar radiculopathy, for example, severe and progressive neurological deficits are an indication for surgery.⁶ While it is our opinion that surgery is best avoided, there is some evidence that recovery from single-level nerve root symptoms can be faster with surgery than with conservative management,^{9,10,16} and we should all recognize that patients have the right to such information as part of a shared decision-making process. It is assumed that O’Sullivan et al⁸ were referring primarily to chronic LBP or patients with evidence of psychosocial barriers, but this is not stated in the commentary.

As clinicians and clinical educators, we have noticed that some are having difficulty integrating this information with manual therapy and with exercise, both of which were seldom mentioned in the commentary as interventions for LBP. While all of our patients (not just patients with LBP) could benefit from a psychosocially informed approach, certainly not all would benefit from a psychosocially dominant approach. This may lead some less-informed physical therapists to espouse a “hands-off” approach to clinical management. Whether the effects of manual therapy occur via mechanical stimulus, neurophysiological stimulus, or spinal or supraspinal mechanisms (or, more likely, a combination of all of the above),² the fact is that a “hands-on” approach does still seem to offer value. A randomized trial of patients with LBP and radiating pain compared lumbar manipulation to sham manipulation, and found greater pain reduction at 6 months in those who underwent lumbar manipulation (55% versus 20%).¹¹ The lumbar clinical prediction rule for manipulation in those with acute LBP is also one of the few to be validated, using exercise as a control.⁴ O’Sullivan et al⁸ have a brief sentence about integrating hands-on therapy to

re-educate motion near the end of their commentary, but they could have been clearer in rationalizing this with the evidence questioning manual therapy in their background.

On the topic of classification, O’Sullivan et al⁸ describe subgrouping attempts as a way to “neatly categorize” patients and later describe it as “‘boxing’ patients into rigid subgroups.” We agree that subgrouping claims of LBP have been overstated in the literature, as several independent reviewers have acknowledged.^{12,14} Both researchers and editors who publish such research have a responsibility to guard against overreach when interpreting findings. However, some authors of classification methods have described them only as clinical decision-making aids to be considered within the context of an entire examination, not as dogma.¹ It is our belief that classification models attempt to capture the clinical pattern recognition exhibited by experts in any field, including chess grandmasters, who store patterns in familiar “chunks” to allow easier recognition.³ We should expect that identifying and translating this information would be difficult and undergo many iterations, but it should remain a priority, and indeed was recognized as a research priority by the National Institutes of Health Task Force on research standards for chronic low back pain.⁵

Finally, we commend the authors for including an Opportunities section near the end of their commentary. Developing better clinical reasoning and communication skills certainly appears to be an educational priority, and we hope educators strive to do this in the context of the complex patients we see daily in clinical practice. We would like to simply add that as research in innovative treatments for chronic pain continues to grow, clinicians will benefit from more case reports and commentaries that demonstrate application and integration of these often foreign concepts (like graded motor imagery and sensory discrimination train-

ing) in the context of a real-life clinical encounter.

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RESPONSE

We thank Mr Peterson and colleagues for their thoughtful comments on our article.¹³ They raise a number of impor-

tant points that we would like to discuss further.

Has the Pendulum Swung Too Far Away From Nociception in LBP?

Among the public and many health care practitioners, nociception is still considered the main contributor to LBP, reflecting the belief that LBP is caused by tissue damage/injury or faulty structures. While we acknowledge the potential contributing role of structure and nociception in LBP, we believe the pendulum needs to swing away from this position. This is supported by inherent problems with a purely nociceptive/structural understanding of LBP, highlighted by the following evidence:

- So-called pathology is prevalent in pain-free populations,⁴ is a poor predictor of future pain,⁶ and can be present after pain subsides¹
- LBP for many persists after the “pathology” has been “fixed” (eg, spinal fusion⁸), emphasizing that nociception is not necessary for LBP¹⁰
- While associations exist between some findings on magnetic resonance imaging scan and LBP,³ they do not correlate well with a person's pain experience and disability levels.² This highlights that even in the presence of a noxious stimulus, pain experience varies according to its meaning⁹

Contemporary understanding of LBP supports the interaction of multidimensional factors (eg, genetic, psychosocial, lifestyle, physical loading, and maladaptive motor responses) with structural factors (eg, advanced disc generation) via neuro-immune-endocrine system changes, resulting in sensitization of spinal structures.¹³ The factors that underpin a person's pain experience and disability appear to be less about structural pathology and nociception and more about pain and illness perceptions and behavioral coping responses to pain.¹⁶

The authors highlight the work of Smart and colleagues¹⁷ as demonstrating nociceptive contributors. However,

we caution that these criteria describe a clinical phenotype, not nociception, and are based on Delphi opinions of health care practitioners rather than on quantitative data. As illustrated by the case reported in our article,¹³ we don't exclude structural/nociceptive or physical factors from our understanding of LBP; rather, we reflect on their role as parts of the puzzle, not the entire puzzle.

Can We Separate Acute From Chronic LBP?

The authors suggest that we have ignored that some acute presentations of LBP have a biochemical or mechanical component and that we refer only to chronic LBP in our commentary. One big misconception is that psychosocial factors are only for chronic LBP and not acute LBP presentations, which is certainly not the case.⁷ While we acknowledge that for a small group, acute LBP may be associated with a specific pathology or traumatic injury, for the majority, LBP presents as a persistent disorder associated with acute pain "flares" linked to interacting multidimensional sensitizing factors.¹⁴ This has led to calls to consider LBP as a condition more like asthma—a persistent disorder associated with acute flares and periods of relative recovery. This has been demonstrated in epidemiological data, tracking the transition of LBP from adolescence to adulthood.⁵ These LBP trajectories are predicted by altered cortisol response patterns to stress, interacting with gender and tissue sensitivity profiles¹⁵ and associated with health and pain comorbidities as well as poorer mental health.⁵ It appears that neuro-immune-endocrine system processes may underpin these presentations.

What About Specific Pathology and the Need for Surgery?

While we acknowledge that for a very small group of people, specific pathology resulting in cord or nerve compression may require surgical review, it is important to note that nerve compression does

not result in pain. Pain associated with disc prolapse is associated with biochemical rather than structural processes.¹⁸ This is why radicular pain can persist in the absence of pathology and neurological deficit can present in the absence of pain.

The Role of Manual Therapy and Exercise in LBP

As outlined in our case study, we support "hands-on" therapy as having a role in the management of LBP in order to build therapeutic alliance, to educate and provide feedback regarding muscle guarding and tissue sensitization, to facilitate movement restoration, and, in some cases, to provide short-term pain relief. However, it is a limited tool for the long-term management of LBP and should not be used in isolation. Building self-efficacy toward a person self-managing their pain problem is a central aim of managing pain, and dependence on manual therapy can act as an obstacle to achieving this.

We also view exercise and physical activity as an important focus for interventions for LBP, although the type of exercise administered should be guided by the patient's preference and capacity.¹² Where pain is a barrier for physical activity, graded exposure toward valued activities may be required.

The Classification of LBP

We agree that current classification approaches have considerable limitations and that unidimensional approaches are unlikely to be effective, which is why we propose the need for a multidimensional clinical-reasoning approach to assess both the modifiable and nonmodifiable risk factors in an individual with LBP to better target care.^{11,14} We agree that case series provide a great opportunity to test innovative treatments, to understand a person's journey, and to inform high-quality and rigorous randomized controlled trials.¹¹

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