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Journal of Manual & Manipulative Therapy

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/yjmt20

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To cite this article: Adam Wielechowski & Kyle Feldman (2020): Letter to the editor: the evolution of manual therapy education: what are we waiting for?, Journal of Manual & Manipulative Therapy, DOI: 10.1080/10669817.2020.1780083

To link to this article: https://doi.org/10.1080/10669817.2020.1780083

Published online: 16 Jun 2020.

JOURNAL OF MANUAL & MANIPULATIVE THERAPY
https://doi.org/10.1080/10669817.2020.1780083

Letter to the editor: the evolution of manual therapy education: what are we waiting for?

Dear Editor,

We read with great interest the editorial by Kolb et al titled, 'The evolution of manual therapy education: what are we waiting for?' and share the notion that manual therapy is at a crossroads regarding advocacy for its use. It is worth considering that perhaps some more 'traditional' biomechanical constructs within the educational framework of manual therapy (MT) have led some to question its use [1]. Further, much of the negative sentiment against MT may be rooted in questioning the biological plausibility of several of these principles. We agree with the authors in reexamining the framework of MT education for assessment, indications, and theoretical constructs based on the growing body of research regarding mechanisms of MT [2,3]. We would like to supplement the points raised by Kolb et al. [4] with other *should* and *should not* recommendations regarding the evolution of MT education.

First, we *should* adopt a common and clear terminology in MT education [5,6] though consistent implementation to date is unknown. Without more specific terminology to establish consistency, MT education will be variable and the intent of assessment and resulting clinical interpretation will be nebulous [7]. An example is a term such as "biomechanical faults", which is vague and ill-defined and may potentially result in varied interpretations by students and clinicians. Potential interpretations may include static joint 'malposition' with palpation, in addition to more dynamic constructs such as stiffness ($k = F/\delta$), joint kinetics or joint kinematics. Further, the importance of several of these constructs has been questioned in the context of MT assessment and mechanisms of action [2,6,8,9]. Therefore, when considering biomechanical constructs in MT education, we *should* reevaluate those with questionable validity, reliability, biological plausibility, and clinical relevance (e.g. SIJ/pelvic 'malalignment', vertebral and peripheral joint 'malposition/subluxation') and reconsider their inclusion as foundational concepts.

Additionally, though kinesiology (i.e. movement) is the cornerstone of MT assessment, we *should* recognize that biomechanical considerations are only one 'piece of the pie' of movement-related MT assessment. It *should be* consistently recognized that the relationship between pain and altered movement is more complex than simply 'faulty' biomechanics [10]. Rather, altered movement may be associated with a myriad of other factors [11–14], though MT may still be beneficial to promote movement in their presence. Therefore, the proposed hypotheses of mechanisms of action in MT education *should* limit biomechanical hypotheses to those that are biologically plausible and fit within a contemporary understanding of the complexity of pain. Rather than MT education purporting a gross tissue 'correction' or alteration with the use of MT techniques, instead recognizing that the peripheral stimulus of MT results in cascading peripheral and central neurophysiological effects [2,3,8,15–18] is a more appropriate and encompassing hypothesis based on the current body of evidence (though this may also continue to evolve in light of further research).

To this end, the fundamental concepts of pain neurophysiology (i.e. 'pain science') *should* be at the foundation of MT education due to the aforementioned complexity of pain and given that indications for MT are often pain-related. Given our continuously evolving understanding of pain, its inclusion in the context of MT education is crucial and should be obligatory. An evolving view of manual therapy in relation to more contemporary models of pain and movement has been previously proposed [1,6,15].

Again, we applaud the authors in recognizing the need for an evolution of manual therapy. We support the notion of establishing a more consistent and contemporary framework amongst the physical therapy profession to serve as a guidepost for continued MT education of healthcare professionals and patients alike.

Disclosure statement

The authors report no conflict of interest

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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