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RESPONSE TO LETTER

Response To: Non-Specific Low Back Pain In Elderly And The Effects Of Myofascial Release Technique Combined With Core Stabilization Exercise: Not Just Muscles [Response To Letter]

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Dear editor

We have received and gladly read the letter entitled "Non-Specific Low Back Pain In Elderly And The Effects Of Myofascial Release Technique Combined With Core Stabilization Exercise: Not Just Muscles [Letter]" related to our recently published study. First of all, we would like to express our deep-seated thanks to Professor Bordoni for his contributions. We believe that the ideas expressed in correspondence with the editor will help to take a deeper look into the literature and we are pleased to participate in this dialogue.

The aim of our study entitled as "The Effects Of Myofascial Release Technique Combined With Core Stabilization Exercise In Elderly With Non-Specific Low Back Pain: A Randomized Controlled, Single-Blind Study" was to present a different perspective to the approaches used in the treatment of low-back pain in elderly individuals with taking the role of fascia into consideration. Although non-specific low-back pain (NSLBP) is a complex condition, in a study conducted in elderly individuals with chronic low-back pain "myofascial pain" was found to be in the first place with the rate of 95.5% as the most common symptom.[1] In spite of this high rate, myofascial structure has not been adequately considered in studies involving treatment practices for this group. The statement in the letter "it is not possible to carry out this pathology to a dysfunction of a single tissue (fascia) and of a muscular structure" actually does not fully reflect the method that we applied in our study. In its updated definition of fascia, the Fascia Nomenclature Committee presents two different terminologies: "a fascia" and "the fascial system".[2] As Bordoni has also mentioned in the letter, the term "a fascia" refers only to the planar tissues that can be dissected with a conventional scalpel. However, the second term "the fascial system" refers to the increasingly popular concept of fascia as a body-wide interconnected fibrous network that has tensegrity properties. In our study, we applied the release method along the myofascial chain (superficial back line) based on the fascial system. In this way, we aimed to emphasize the importance of addressing rehabilitation from a full-body perspective rather than a specific pain and/or affected area, especially in cases of chronic pain. Yet, it is not mentioned anywhere in our study that the treatment for low-back pain should be solely composed of fascial and muscular approaches, but we

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argued that in this group of patients where myofascial pain is observed in 95.5%, the fascia should also be included in holistic treatment programs.

In addition to the anatomical studies, the effects of therapeutic interventions based on the myofascial chain have been shown in several studies. In their study, Grieve et al reported an increase in sit and reach test distance and hamstring flexibility in measurements taken immediately after the self-myofascial massage to the plantar fascia.[3] Similarly, in another study, it was found that stretching gastrocnemius and hamstring muscles increased the mobility of the cervical spine in the sagittal plane.[4] In an ultrasound-supported study by Montecinos-Cruz et al, the participants were asked to move their pelvis forward (anterior pelvic tilt) while their knees were in extension. In ultrasound images of the gastrocnemius, a simultaneous cranial displacement was observed in the fascia of this muscle.[5] All these studies can be an indication of mechanical force transmission along the superficial back line. In individuals with low-back pain, it is reported that hamstring muscles, which are a part of the superficial back line, have stiffness and reduced flexibility, [6] and excessive activation of the erector spinae muscles along the same line is also demonstrated.[7] Moreover, the sacrolumbar fascia, which is an important part of this chain, is also the junction of the thoracolumbar fascia.[8] In their ultrasound examination, Langevin et al[6] reported a decrease in shear–strain transmission in the lumbodorsal fascia in patients with chronic low-back pain. This change is thought to be caused by inflammation in the lumbodorsal fascia in individuals with low-back pain.[9,10] According to current compelling evidence, nerve growth factor (NGF), which is produced by inflamed tissues, increases hyperalgesia (sensitivity to pain) and performs as a mediator in chronic pain conditions. Weinkauf et al have reported that a dose of NGF caused a more significant mechanical hyperalgesia in fascia than in muscle.[11] Based on these findings, it can be concluded that the sensitization of fascia rather than muscle by NGF may contribute to the pathophysiology of low-back pain. Mense demonstrated that free nerve endings containing calcitonin gene-related peptide (CGRP) and substance P (SP) in the thoracolumbar fascia [12] contribute to the sensitization of peripheral nerves by stimulating pro-inflammatory cytokines. When these peptides are released centrally, they also contribute to the pain's central sensitization in the dorsal horn of the spinal cord. To identify the relevant cells in the dorsal root of the central nervous system, Barry et al reported that the innervation of these peptidergic neurons was three times denser in fascia than in muscle. Therefore, all these studies suggest that myofascial structures not only act as a tissue but also play a role among the central and peripheral components of pain. Despite the available data highlighting the role of myofascial force transfer in lumbar stability, studies investigating adapted treatments in individuals with low-back pain are insufficient. In this context, we planned our study to contribute to the literature.

Although Bordoni has criticized the use of "superficial muscle group" for erector spinae muscles, this term is commonly used in the literature.[13,14] Furthermore, there are clinical studies[15,16] as well as systematic review and meta-analysis[17] showing that core stabilization training is more effective than general exercises. Hence, we genuinely believe in the accuracy of what we wrote in the introduction section, and we believe that the different results in the literature will shed light on future studies.

In the letter, it is pinpointed that morphological changes in the disc and vertebral bodies were not examined in our study. Although spinal degenerative changes caused by aging (decreased amount of liquid in the cartilage tissue of the intervertebral discs, narrowing of the intervertebral spaces, more rigid and less flexible discs) cause low-back pain, not all abnormalities in the medical images of the lumbar spine are associated with low-back pain. Abnormal imaging phenotypes are commonly observed in asymptomatic elderly individuals.[18,19] In magnetic resonance imaging, disc degeneration is more common in the elderly individuals; however, it is less likely to be a source of pain compared to young adults.[20]

As the last point, we strongly believe that the presence of a placebo group and/or a myofascial release group would be a great advantage for our study. In this regard, there is a need for future studies that include diaphragm (as indicated by Bordoni) as well as pelvic floor muscles.

Disclosure

The authors report no conflicts of interest in this communication.

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