**Reviewer Response Report**

Dear Journal of Rehabilitation Practices and Research Editor and Reviewers,

Thank you very much for your most helpful review and support of our research. We have fully addressed each item in the revised manuscript where the changes were highlighted in yellow. Below please find the tabulated comments and actions taken.

| Reviewer 1 Comments | Actions Taken |
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| This declaration is missing and needs to be added – "I declare that I have no competing interest as a reviewer." | The following statement was added in Page 14 conflict of interest declaration page: The sentence: Dr. Carla S. Enriquez declares no competing interest as a reviewer. |
| A more fully describe the intervention decision is needed.<br>What I mean by this is why the PPT location was solely delivered on the trapezius muscle alone? I know that in the PPT protocol the midpoint trapezius muscle location that was used in this study is common, however this study did not include a "distant" location such as the quadricep or tibialis anterior, which are often the secondary points used, to evaluate local pain (in the trap) and generalized pain using more than one PPT site. I am not saying that the study is lacking as a result of not using the distant follow up location, however this is not addressed as a limitation or a reasoning for only selecting the trap location. Addressing the decision to only use a single point for the PPT evaluation should be included. | The following statements were added in Page 7 to provide reasoning on using one test site location for the PPT testing:<br>Because the mechanical PPT assessment was used solely to determine each participant's threshold for experimental pain induction required for TS and CPM testing—and not to characterize peripheral or central pain mechanisms in our healthy sample—the procedure was not administered at a remote or secondary body region.<br><br>We further addressed our reasoning above in Page 13 under our study's limitations to follow up on its impact on our findings:<br>Our study has several limitations, including a small sample size and the absence of mechanical PPT assessment at a remote, secondary body region. These factors limit the generalizability of our findings and constrain our ability to determine whether the QST-related aberrations in pain processing reflected peripheral or central mechanisms—information that would have offered deeper insight into the pain profiles of our sample. |
| **Reviewer 2 Comments** | |

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| 1. Provide some objective evidence of what is already known/assumed clinically. | We have highlighted the following objective evidence that is already clinically known and relevant as seen in page 4:<br>Quantitative sensory testing (QST) constitutes a standardized, objective representation of the traditional neurological sensory examination, designed to systematically quantify sensory thresholds and provide reproducible data on somatosensory function.[7,9,11] Dysfunctions in QST have been used as predictors of chronic pain conditions such as fibromyalgia, osteoarthritis, and low back pain, demonstrated as low pain threshold, impaired descending inhibition and delayed recovery from central sensitization.[10,12,13,15,18,19,20] Although inter-individual variability exists, aberrations in pain processing mechanisms exists and in chronic pain states versus pain-free controls.[20, 21] Furthermore, several psychological factors such as catastrophizing behaviors and poor self-efficacy had been found to be predictors of pain.[23,24]<br><br>We also included the following objective evidence that is clinically known and relevant in page 6:<br>Pressure algometer is a reliable instrument for PPT measurements across healthy, asymptomatic individuals.[9,18,25] The full testing protocol was conducted by the PI with clinical training and expertise in QST, consistent with the standardized protocol established by the German Research Network on Neuropathic Pain[9,25] This protocol has been used in many investigations involving QST and pain across different populations, which includes a series of consistent testing methods designed to evaluate and quantify somatosensory performance in both large (Aβ fibers) and small sensory nerve fibers (Aδ and C fibers).[24,40] Its primary goal is to identify alterations in sensory perception, including diminished sensitivity (such as hypoesthesia and hypoalgesia) or heightened sensitivity (such as hyperesthesia, hyperalgesia, and allodynia).[19,20,21,22,23,24] It is a valid and reliable measure of somatosensory and pain processing function, although not currently widely used in clinical practice but largely used in research for its diagnostic and prognostic value, as well as evaluation of treatment effectiveness.[10,11,13,15,18,22] In particular, Temporal Summation (TS) and Conditioned Pain Modulation (CPM) has been used to |

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| | predict the development of post-surgical clinical pain, chronic musculoskeletal pain, including neuropathies in neurologic and metabolic disorders. [13,14,16,18,22] |
| **2.** The abstract is comprehensive, however its use of jargon and unfamiliar tools may hinder continued reading. | We have fully revised the Discussion section of our abstract as seen in Page 2 to provide more clarity, maintain interest, and minimize jargon where possible: **Conclusion:** Health-related measures were associated with aberrations in pain processing mechanisms in healthy individuals, mirroring clinical features observed in chronic pain populations. Findings highlight the potential predictive utility of QST, an objective pain assessment tool widely used in research and clinical prognostication. Targeted prevention and intervention strategies—including screening of asymptomatic but at-risk groups—are critical for advancing public health and pain literacy. These efforts can inform communities, policymakers, organizational leaders, and public health advocates to improve planning, access, and delivery of health services, thereby mitigating the longstanding global burden of pain. |
| 3. Here reviewer should declare his/her competing interest. If nothing to declare he/she can write "I declare that I have no competing interest as a reviewer" | The following statement was added in Page 14 conflict of interest declaration page: The sentence: Dr. Carla S. Enriquez declares no competing interest as a reviewer. |

Our team hopes you we have fully addressed the items of concerns. Please let us know if there may be anything else of concern. We thank you for your continued consideration of our work.

Sincerely,

Carla S. Enriquez, PT, PhD, DPT, MS, OCS