A Systematic Review of Chronic Pain Mechanism Differential Assessment Strategies for Physical Therapy

Kate Hovde SPT
University of Puget Sound

Kenny Li DPT
University of Puget Sound

Kylie Wong BS
University of Puget Sound

Roger Allen PhD, PT
University of Puget Sound

Follow this and additional works at: https://soundideas.pugetsound.edu/ptsymposium

Part of the Physical Therapy Commons

Recommended Citation
Hovde, Kate SPT; Li, Kenny DPT; Wong, Kylie BS; and Allen, Roger PhD, PT, "A Systematic Review of Chronic Pain Mechanism Differential Assessment Strategies for Physical Therapy" (2022). Physical Therapy Research Symposium. 69.
https://soundideas.pugetsound.edu/ptsymposium/69

This Poster is brought to you for free and open access by the Physical Therapy, School of at Sound Ideas. It has been accepted for inclusion in Physical Therapy Research Symposium by an authorized administrator of Sound Ideas. For more information, please contact soundideas@pugetsound.edu.
A Systematic Review of Chronic Pain Mechanism Differential Assessment Strategies for Physical Therapy

Kate Hovde, SPT; Kenny Li, DPT ; Kylie Wong, BS; Roger Allen, PhD, PT
University of Puget Sound - Tacoma, WA, United States of America

BACKGROUND

Our understanding of pain is rapidly evolving. The International Association for the Study of Pain (IASP) redefined a new pain mechanism category (PMC) as “nociplastic pain” in 2017. IASP redefined “pain” in 2000, and new pain education guidelines were published by the Academy of Orthopaedic Physical Therapy (AOPT) in 2021.¹ ² There are currently 3 PMCs defined by the IASP: nociceptive, neuropathic, and nociplastic pain. Debate exists about the new “nociplastic pain” terminology in contrast to “centralized sensitization” (CS), which emerged in research in 2010 and is defined, for clinical purposes, as an amplification of neural signaling within the central nervous system that elicits pain hypersensitivity.

RESULTS

Inclusive searches yielded 110 studies fitting inclusion criteria, with 72 selected for review. Secondary “nociplastic” search yielded additional 81 results with 19 fitting criteria (91 total studies reviewed).

Table 1. IASP definitions of three pain mechanism categories (PMCs) for the generation, modulation, and/or maintenance of pain.

<table>
<thead>
<tr>
<th>Pain Mechanism</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nociceptive</td>
<td>Pain that arises from actual or threatened damage to non-neural tissue and is due to the activation of nociceptors.</td>
</tr>
<tr>
<td>Neuropathic</td>
<td>Pain caused by a lesion or disease of the somatosensory nervous system.</td>
</tr>
<tr>
<td>Nociplastic</td>
<td>Pain that arises from altered nociception despite no clear evidence of actual or threatened tissue damage causing the activation of peripheral nociceptors or evidence for disease or lesion of the somatosensory system causing the pain.</td>
</tr>
</tbody>
</table>

Figure 1. Pain generation and modulation locations for three Pain Mechanism Categories.

METHODS

Four investigators independently searched databases CINAHL, Carthage Library, Google Scholar, PEDro, PubMed and SportDiscus from May-June 2020, for peer-reviewed studies pertaining to differentiating assessment methods of “nociceptive,” “neuropathic,” “central” mixed pain” and “central sensitization.” Upon researcher’s discovery of the term “nociplastic pain,” a follow-up search was conducted on this term for studies published between 2017-2022. Studies with undefined or exclusively psychogenic pain, not published in English, or that had a cost to access were excluded. Investigators evaluated abstracts independently using a priori criteria, voting to include 91 articles. A piloted form was used to extract the following data: pain terminology, conceptualization of pain mechanisms, assessment strategies for differentiating diagnosis of pain mechanisms, associated pathologies, and how the research informs physical therapy clinical practice. Extracted data demonstrated a meaningful qualitative understanding of the broad and varied nature of existing research on pain mechanism assessment.

CONCLUSIONS

High quality research is emerging to inform the physical therapy clinician on differential assessment strategies for pain mechanisms in chronic pain patients. The ability for clinicians to assess and treat chronic pain is challenged by the current lack of continuity within PMC education, terminology, and difficulty of in vivo research on the subject.

Contact Information
Kate Hovde, SPT
kthovde@pugetsound.edu

References