

Manual Therapy for Voice Disorders: Moving the Explanation Forward

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References

- Ateras, B. (2017). Integration of a neurodynamic approach into the treatment of dysarthria for patients with idiopathic Parkinson's disease: A pilot study. *Journal of Bodywork & Movement Therapies*.
- Bialosky, J.B. (2009, October). The Mechanisms of Manual Therapy in the Treatment of Musculoskeletal Pain: A Comprehensive Model. *Manual Therapy*, 14(5), 531-538.
- Bialosky, J.E. (2018). Unraveling the Mechanisms of Manual Therapy: Modeling an Approach. *The Journal of orthopaedic and sports physical therapy*, 48(1), 8-18.
- Bishop, M. B. (2020). Riding a Tiger: Maximizing Effects of Manual Therapies for Pelvic Pain. *Journal of Women's Health Physical Therapy*, 32-38.
- Cardoso, R. (2017). Associations Between Autonomic Nervous System Function, Voice, and Dysphonia: A Systematic Review. *Journal of Voice*, 35, (1), 104-112.
- Cerritelli, F. C. (2017, 2017 20). Effect of Continuous Touch on Brain Functional Connectivity Is Modified by the Operator's Tactile Attention. *Frontiers in Human Neuroscience*, 11(368).
- Geri, T. A. (2019, July 24). Manual therapy: Exploiting the role of human touch. *Musculoskeletal Science and Practice*, 44.
- Jacobs, D. (2016). DermoNeuroModulating. *Tellwell Talent*.
- Krisciunas, G. P. (2019). Application of Manual Therapy for Dysphagia in Head and Neck Cancer Patients: A Preliminary National Survey of Treatment Trends and Adverse Events. *Global Advances in Health and Medicine*, 8, 1-8
- Roy, N. D. (2017, March 1). Exploring the Neural Bases of Primary Muscle Tension Dysphonia: A Case Study Using Functional Magnetic Resonance Imaging. *Journal of Voice*, 33(2), 183-194.
- Schleip, R. (2003, January). Fascial plasticity – a new neurobiological explanation: Part I. *Journal of Bodywork and Movement Therapies*, 7(1), 11-19.
- Spengler, F. B. (2017). Emotional Dysregulation in Psychogenic Voice Loss. *Psychotherapy and psychosomatics*, 121-123.
- Testa, M., & Rossetini, G. (2016). Enhance placebo, avoid nocebo: How contextual factors affect physiotherapy outcomes. *Manual Therapy*, 24, 65-74.
- Thomson, O. P. (2021, June 11). 'Don't focus on the finger, look at the moon' – The importance of contextual factors for clinical practice and research. *International Journal of Osteopathic Medicine*. <https://doi.org/10.1016/j.ijosm.2021.06.001>
- von Piekartz, H. C. (2002). A Proposed Neurodynamic test of the Mandibular Nerve. Reliability and Reference Values. In *Published in Manuelle Therapie (Chapter 2)*.
- Weppler, C. H. (2010). Increasing muscle extensibility: a matter of increasing length or modifying sensation? *Physical Therapy*, 438-449.



Introduction

Current outcome-based studies show manual therapy (MT) of various names helpful with muscle tension dysphonia (MTD) and related voice disorders, including normal voice. However, nearly all studies rely on a local tissue-based mechanism of action explanation of how MT impacts the patient and lack an updated narrative on the range of impacts MT creates. This study aims to establish a basic framework for future research on the various factors contributing to the gains seen because of MT by synthesizing perspectives from outside the voice realm.

OBJECTIVE

- Examine and critique the current literature
- Explore literature from more far-reaching sources to synthesize a new framework for a multivariant mechanism of action for MT in voice rehabilitation

METHODOLOGY

A preliminary literature review was done through a purposeful sampling of voice literature that pertained to the use of MT for MTD. First, those papers were examined whether the explanation for how MT impacts voice dysfunction (if any) was described beyond local impacts at the peripheral tissue level. Next, an integrative literature review from a purposeful sampling of papers from the general MT literature examined effects from neurocentric and behavioral perspectives. Finally, these factors were synthesized into a basic framework for explaining what a more global mechanism of action may look like in the MT/voice field.

RESULTS

Most historical and current MT/voice literature rely on unvalidated historical peripheral tissue-based mechanisms of action while the general MT literature is evolving into neurocentric, biopsychosocial, and behavioral perspectives. Therefore, future research in the MT/voice field is recommended to look to these perspectives to allow a more comprehensive view of how MT influences MTD.

Analysis

Excepting Roy (2017), little mention is made of the mechanism of action behind MT in the current voice literature. Exploring other sources reveals a rich mosaic of potential contributors, representing intertwining possibilities for explaining the process. Local tissue changes are downplayed, given the lack of a universally accepted biologically proven mechanism (Bialosky, 2018), and instead, those local tissues are seen as awareness signalers to spinal and supraspinal centers, allowing for nervous system modifications back to the periphery. Behavioral and contextual factors play a strong role in MT interactions, with clinician-state factoring in (Cerritelli, 2017).

Conceptual Framework

- Neurodynamic concepts (Ateras, 2017; von Piekartz, 2002)
- Skin-based neurocentric concepts (Jacobs, 2016; Ateras, 2017)
- Autonomic factors (Schleip, 2003; Cardoso, 2017)
- Perceptual changes in sensation (Weppler, 2010)
- Analgesic impacts (Bishop, 2015)
- Reduction in inflammatory markers (Krisciunas, 2019)
- Peripheral tissues signaling to higher centers–spinal/supraspinal (Bialosky, 2009, 2018)
- Affective influences (Geri, 2019)
- Brain-based functional connectivity changes because of touch (Cerritelli, 2017)
- Behavioral factors (Roy, 2017; Spengler, 2017)
- Contextual factors (Bialosky, 2018; Testa, 2016; Thomson, 2021)



Conclusion

Current voice literature lacks a thorough vetting of the mechanism of action of MT. From a larger body of evidence, a framework has been proposed to guide future research. With this will come a richer understanding of the complexities of touch-based interventions, furthering our ability to aide in the remediation of voice disorders. Based on the disparate perspectives and the uncertainty implicit in any injury or condition, and the variability in human interaction (patient/clinician), deeper models must allow for the ambiguity of multivariant effects.

"Clinicians should remember that manual techniques are not tools to fix the patient's body, rather they provide the opportunity to communicate with the patient's brain similar to words" (Geri, 2019)

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