

Research Commentary: On the Nexus of Chronic Pain,
Posttraumatic Stress, and Alexithymia

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Abstract

This manuscript expounds on our previous research and treatment recommendations with regard to chronic pain (CP), Posttraumatic Stress Disorder (PTSD), and Alexithymia. Specifically, the neurological and behavioral effects of these disorders, and neuropsychological treatment. Keywords: Posttraumatic Stress Disorder, Chronic Pain, Alexithymia, Cognitive Behavioral Therapy, Acceptance and Commitment Therapy, Neurological Impairment

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On the Nexus of Chronic Pain, Posttraumatic Stress, and Alexithymia was published in Vol 7 of *The Practitioner Scholar: Journal of Counseling and Professional Psychology*, now entitled *The Practitioner Scholar: Journal of the International Trauma Training Institute*, with the purpose of analyzing the relationship between the aforementioned disorders and their treatment. This article stated that there is a cyclical interplay between Chronic Pain (CP) and Posttraumatic Stress Disorder (PTSD); with flares of pain engaging PTSD triggers and vice versa. This is exacerbated by one's difficulty in communicating their experience (i.e., alexithymia). Acceptance and Commitment Therapy (ACT) was recommended to therapeutically address these issues. This modality was favored for its ability to address both CP and PTSD while circumventing the barriers of alexithymia.

In this commentary, we further the previous research in two main areas. First, from the neurological perspective, we provide an overview of the impact these disorders have on brain structure and function, which hence, should be considered in an efficacious treatment. Second, we describe our, currently experimental, integrative treatment model that addresses this oversight in the previous research; arguing that in consideration of neurological effects, utilizing Acceptance and Commitment Therapy solely may be inadequate to address these issues.

The Neurology of Chronic Pain and Posttraumatic Stress Disorder

CP and Posttraumatic Stress Disorder (PTSD) not only impact individuals behaviorally and psychologically, but also neurologically. Studies have indicated that these disorders impact both grey matter density and glucose metabolism in the brain (Sussman et al., 2016; Apkarian et al., 2004). The areas of the brain effected by PTSD and CP are spread throughout indicating that both conditions are “whole brain” or pervasive. However, the neurological effects patients experience varies based upon the disorder and brain location. In some brain structures, the results are the same across diagnoses. For example, in the amygdala PTSD and CP both cause increased glucose metabolism with symptom provocation (Martucci, Ng, & Mackey, 2014; Im et al., 2016). On the other hand, patients with PTSD are found to have decreased grey matter in the left middle temporal gyrus, and CP patients generally have increased grey matter in this area (Sussman et al., 2016; Ung et al., 2012).

Moreover, it is important to investigate the neurological effects of these co-occurring conditions and the manner in which they behaviorally and physically manifest. When treating co-morbid patients, physicians commonly encounter “illness-affirming behaviors” in which patient concerns or symptoms go beyond the expected severity of a typical prognosis. However, investigating how these symptoms are affecting the patient neurologically can expand the current knowledge base of efficacious treatment for Chronic Pain and Posttraumatic Stress Disorder (Kumar & Kumar, 2015).

Treatment

Contrary to the initial manuscript, ACT as a sole intervention may often be insufficient to address the symptoms and concerns of these co-morbid disorders. Due to the fact that individuals diagnosed with co-morbid PTSD, CP, and Alexithymia exhibit impairments in all spheres of being (i.e., physical, behavioral, cognitive, emotional, and neurological), treatment approaches must also target these areas. Our experimental, integrative treatment protocol captures these issues by incorporating elements of Art Therapy, Cognitive Behavioral Therapy, Eye Movement Desensitization and Reprocessing, and Acceptance and Commitment Therapy in a structured manner.

Triply diagnosed patients often adjust their lifestyle and daily habits due to kinesiophobia (the fear of movement or reinjury) and trauma triggering (Duenas et al., 2016). Therefore, the protocol begins with evaluations of the patient's daily life skills and mapping their regular life patterns. Subsequently, coping skill evaluation and integration is conducted. These elements provide consistency and a stable foundation for the individual as they begin to tread the waters of their pain and trauma symptoms.

Next, emotion training, utilizing a blend of art therapy and mindfulness, delves into the symptomology of alexithymia. This will enable the patient to understand, process, and express the emotions that arise from the latter portions of treatment. Art Therapy engages both the emotional processing center of the brain (the amygdala) and the areas in which memories are processed (prefrontal cortex, posterior cortex;

Lusebrink, 2004).

Once life patterns and routines have been adequately adjusted with the incorporation of coping skills and emotion training has taken place, the patient undergoes a trauma protocol to separate trauma triggers from physical pain and to process trauma. Finally, a new, non-trauma or pain centered, self-narrative and identity is developed, and emotion training is practiced in a manner that aligns with this new identity. Future research will delve further into the neurological effects of these disorders and discuss holistic treatment based on neurological factors.

References

- Apkarian, A., Sosa Y., & Sonty, S., Levy, R. Harden, R, Parrish, T. & Gitlelman, D. (2004). Chronic back pain is associated with decreased prefrontal and thalamic gray matter density. *Journal of Neuroscience*, 24(46):10410–10415.
- Duenas, M., Ojeda, B., Salazar, A., Mico, J. A., & Failde, I. (2016). A review of chronic pain impacts on patients, their social environments and the health care system. *Journal of Pain Research*, 9, 457-467.
- Im, J. J., Namgung, E., Choi, Y., Kim, J. Y., Rhie, S. J., & Yoon, S. (2016). Molecular neuroimaging in posttraumatic stress disorder. *Experimental Neurobiology*, 25(6), 277–295. doi:10.5607/en.2016.25.6.277
- Kumar, S., & Kumar, R. (2015). Evolving concept of abnormal illness behavior & clinical implications. *ASEAN Journal of Psychiatry*, 16(2), n.p.
- Lusebrink, V. (2004). Art therapy and the brain: An attempt to understand the underlying processes of art expression in therapy. *Art Therapy: Journal of the American Art Therapy Association*, 21(3), 125-135.
- Martucci, K. T., Ng, P., & Mackey, S. (2014). Neuroimaging chronic pain: What have we learned and where are we going?. *Future Neurology*, 9(6), 615–626. doi:10.2217/FNL.14.5
- Seminowicz, D., Wideman, T., Naso, L., Hatami-Khoroushahi, Z., Fallatah, S., Ware, M., Jarzem, Bushnell, M. Shir, Y., Oullett, J., & Stone, L. (2011). Effective treatment of chronic low back pain in humans reverses abnormal brain anatomy and function. *Journal of Neuroscience*, 31(20):7540–7550.
- Sussman, D., Pang, E., Jetly, R., Dunkley, B., & Taylor, M. (2016). Neuroanatomical features in soldiers with post-traumatic stress disorder. *BMC Neuroscience*, 17, 13. doi:10.1186/s12868-016-0247-x
- Ung, H., Brown, J., Johnson, K., Younger, J., Hush, J., & Mackey, S. (2012). Multivariate classification of structural MRI data detects chronic low back pain. *Cerebral Cortex*, 24(4):1037–1044.