

Interaction between pain and fatigue in veterans with fibromyalgia receiving cranial electrotherapy stimulation

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Background

Fibromyalgia (FM) is a chronic disorder characterized by widespread pain, fatigue, and poor sleep, predisposed to be caused by altered pain and neurotransmitter signaling.



Given the strong association between chronic pain and fatigue, this study examines:

- The relationship between pain and fatigue in veterans with FM
- How cranial electrical stimulation (CES), a non-invasive, nonpharmacological, home-based method of applying low-intensity electric current to the brain, has an effect in managing FM symptoms.



Methods

We analyzed data from a randomized, double-blind, sham-controlled trial of CES in veterans with FM. NIH PROMIS short form v1.0-Fatigue 6a and Defense and Veterans Pain Rating Scale (DVPRS) scores were collected at baseline, 6 weeks, and 12 weeks.

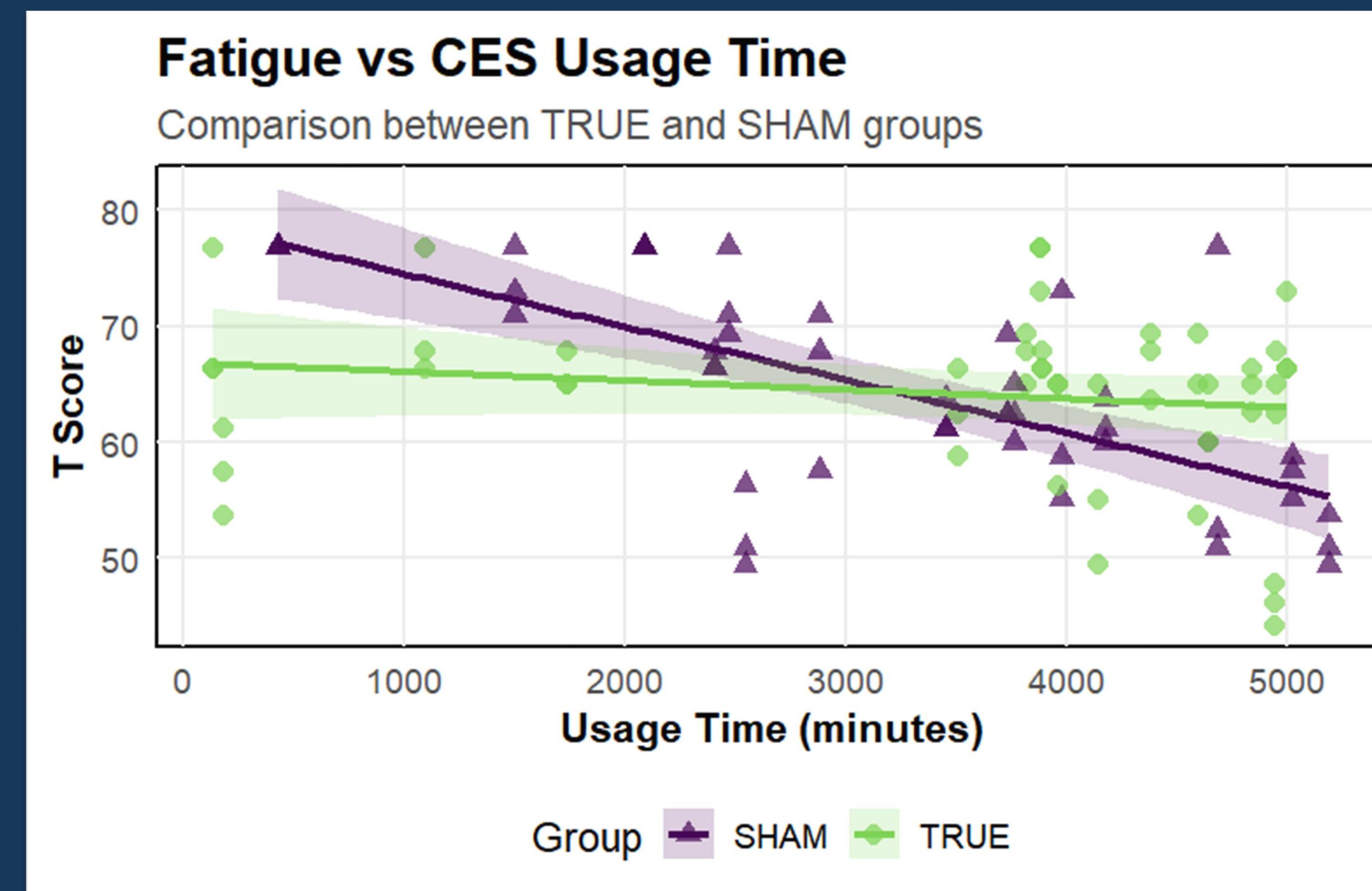
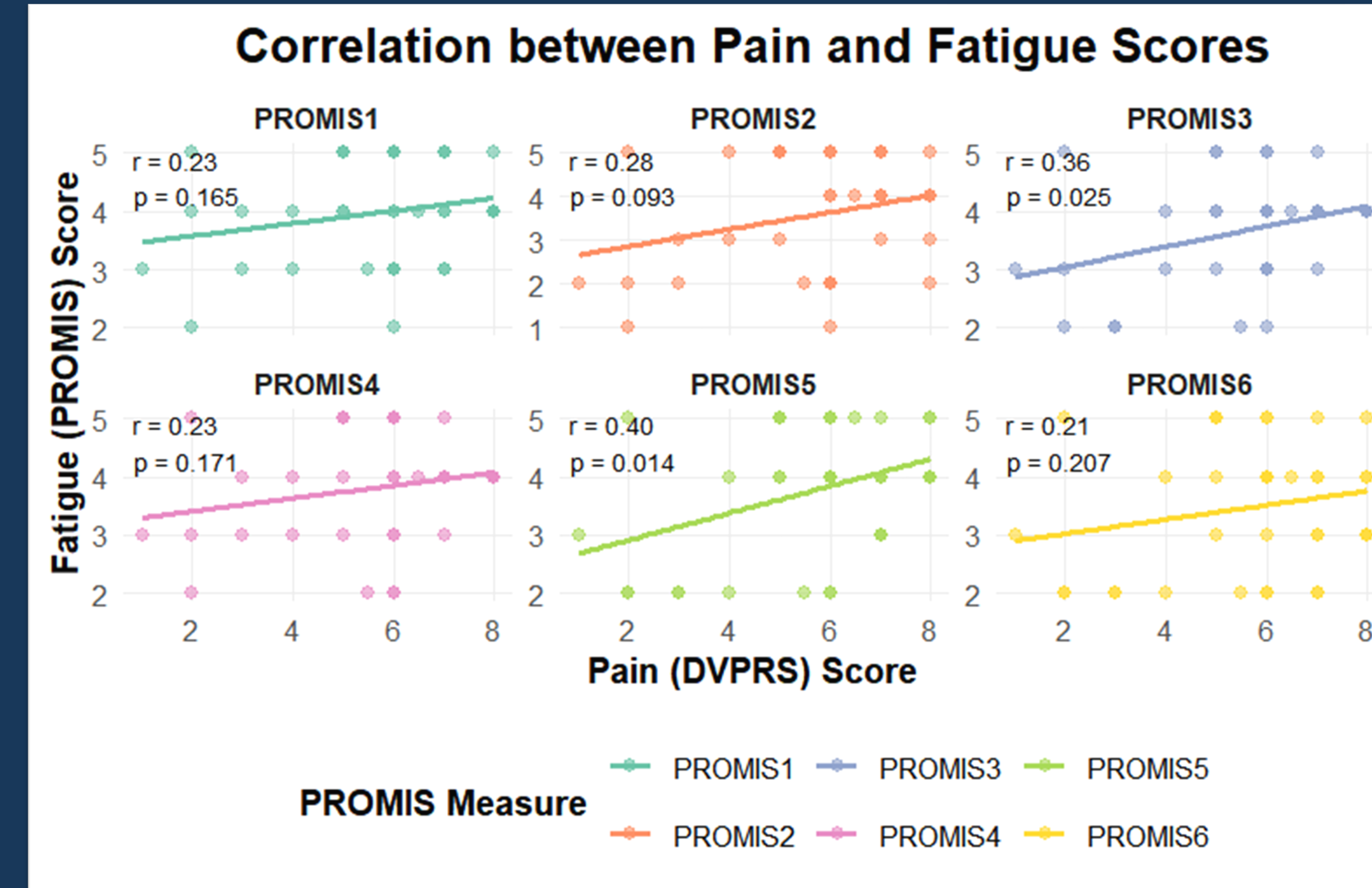
- Pearson correlation analysis to assess the relationship between pain and fatigue
- Linear mixed models and ANOVA were used to compare CES vs. sham CES on fatigue.

Increased pain is associated with greater fatigue and physical interference.

Increased CES usage is associated with decreased fatigue.



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Results

Correlation analysis showed that increased pain was associated with greater fatigue and physical interference. Significant positive correlations between DVPRS and PROMIS scores were observed at 6 and 12 weeks, indicating that pain impacts fatigue over time.

CES treatment was associated with significant decrease in fatigue with increased usage ($p=0.003$). However, no significant difference in fatigue scores were found between true and sham CES groups ($p=0.6$). The sham CES group showed a decrease in fatigue with increased usage ($p=0.004$), which may be attributed to meditative effects.

Conclusions

The study suggests that pain significantly influences fatigue in veterans with FM, with CES showing potential benefits for managing fatigue. Despite the lack of significant difference between true and sham CES, the trends and results highlight the need for further research with larger samples to confirm findings, explore alternative interventions, and better understand the mechanisms linking pain and fatigue.

References

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