Pain Catastrophizing Moderates Network in Active-Duty Service Members with Chronic Pain

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BACKGROUND

- Pain catastrophizing alters relationships among pain-related outcomes and may hinder treatment effects.
- How it moderates the network of these relationships remains poorly understood.

PURPOSE

- To explore whether pain catastrophizing moderated the associations among chronic pain-related outcomes in active-duty service members (ADSM) with chronic pain

METHODS

Design and setting

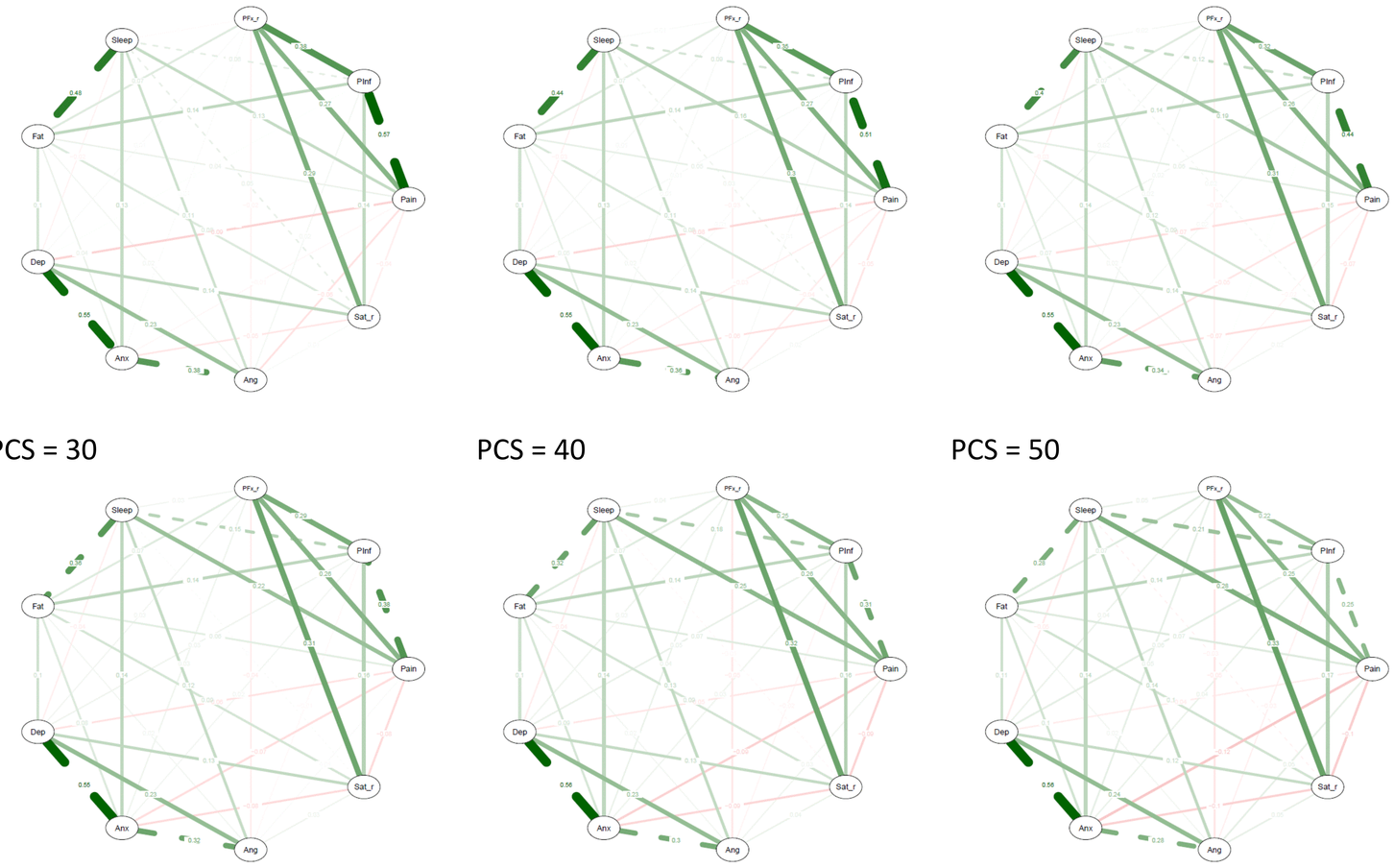
- Secondary analysis of a data from a parent study that employed a quasi-experimental, between-subjects design
- 12,308 ADSM with chronic pain who (1) were 17 years or older, (2) received treatment for chronic pain at Military Health System specialty clinics, and (3) completed all 10 patient-reported outcomes (PROs) within the Pain Assessment Screening Tool and Outcomes Registry
- 10 PROs: pain catastrophizing, pain intensity, pain interference, physical function, anger, anxiety, depression, fatigue, sleep-related impairment, and satisfaction with social roles and activities.

Statistical analyses

- Moderated network analysis

RESULTS

Figure 1. Estimated networks across level of pain catastrophizing.



Legend. *Ang = anger, Anx = anxiety, Dep = depression, Fat = fatigue, Pain = pain intensity, PInf = pain interference, PCS =pain catastrophizing scale, PFx_r = physical function (reverse-coded), sleep = sleep-related impairment, and Sat_r = satisfaction with social roles and activities (reverse-coded).*

- The figures illustrate how associations among PROs changed as levels of pain catastrophizing increased (PCS = 0, 10, 20, 30, 40, and 50).
- Green edges represent positive associations between PROs, and edge weights represent the strength of the associations.
- Solid lines indicate significant pairwise associations between PROs.
- The dashed line indicates a relationship that is significantly moderated by pain catastrophizing.

Findings

- In the moderated network model, as pain catastrophizing increased the association weakened between **pain intensity and pain interference (B = 0.57 to 0.25)**; **fatigue and sleep-related impairment (B = 0.48 to 0.28);** and **anxiety and anger (B = 0.38 to 0.28).**

CONCLUSIONS

- Pain catastrophizing attenuates interconnections between PROs potentially limiting cascade effects of symptom-specific interventions.
- Longitudinal and intervention studies targeting pain catastrophizing could advance personalized pain management in ADSMs with chronic pain.

FUNDING

This work was supported by the Assistant Secretary of Defense for Health Affairs and endorsed by the Department of Defense through the Chronic Pain Management Research Programs (Award No. HT9425-24-1-0896).

The views expressed are those of the authors and do not reflect the official policy of the Department of the Army, the Department of Defense or the U.S. Government. The investigators adhered to the policies for protection of human subjects as prescribed in 45 CFR 46.