ASSESSMENT OF ANXIETY AS MEDIATOR OF THE RELATIONSHIP BETWEEN SLEEP DISTURBANCE AND PAIN CATASTROPHIZING IN CHRONIC PAIN: A COLLABORATIVE HEALTH OUTCOMES INFORMATION REGISTRY (CHOIR) STUDY

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INTRODUCTION / AIM

One of the most common complaints of chronic pain sufferers is poor quality of sleep, with up to 70-88% of them reporting significant sleep disturbance. In this study we elucidated how key psychological variables impact sleep in chronic pain. Sleep disturbance is defined as a disorder in initiating or maintaining sleep, excessive sleep, or disrupted sleep-wake cycles. Chronic pain and insomnia individually have negative consequences, and when they occur simultaneously, they magnify pain severity and distress. We studied the relationship between sleep disturbance and pain catastrophizing, a phenomenon in which a pattern of negative cognitive-emotional responses to actual or anticipated pain maintains chronic pain. We hypothesized a significant relationship between patient's sleep disturbance and PCS scores and that feelings of anxiety would mediate this relationship.

METHODS

We analyzed data from the Stanford-NIH Collaborative Health Outcomes Measurement Information Registry (CHOIR), which includes Patient Reported Outcomes Measurement Information System (PROMIS) measures. CHOIR collects longitudinal data at initial clinic visits, during ongoing treatment, and at follow-up visits. Data on pain intensity, sleep disturbance, pain catastrophizing scores and anxiety were analyzed from patients with mixed etiology chronic pain conditions who presented for initial medical evaluation at a tertiary care pain clinic. Data were analyzed for 636 patients with chronic pain who were seeking new medical evaluation at a tertiary pain clinic (390 females, 246 males, mean age = 48.8).

RESULTS

We found a direct relationship between sleep disturbance scores and PCS scores (p<.001), which fulfills the first criterion for mediation. Anxiety was also independently and significantly related to PCS (p<0.001), which meets the second criterion for mediation. Then, to test mediation, we conducted multivariate modeling with both anxiety and PCS as predictors in a model with sleep disturbance as the dependent variable, while controlling for pain intensity. This overall model was highly significant (F=63.11, p<.001), and PCS became not significant (p=0.639), suggesting complete mediation from anxiety.

DISCUSSION / CONCLUSIONS

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Our findings demonstrate that anxiety is a potential area of intervention for patients suffering from sleep disturbance. Interventions that focus on reducing anxiety or managing pain catastrophizing may also indirectly alleviate sleep disturbance. Our results imply that targeted treatment of pain catastrophizing and anxiety could be an effective means of reducing sleep disturbance in individuals with chronic pain. Additionally, our results support the viability of PROMIS instruments administered through a large-scale, open-source data registry. They are also, to our knowledge, the first to describe relationships between these variables in an outpatient clinic sample. Future research may focus on the benefits of providing targeted therapy for anxiety reduction to chronic pain patients that also report high PCS scores in an effort to improve sleep quality.

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