

23rd Annual Pain Medicine Meeting

November 21-23, 2024 | #ASRAFALL24



Association of Sleep Disturbance with Catastrophizing and Chronic Pain

Andrew C Olsen, DO, Lok Valentas MD, Mohammed Ali MD, Travis Blanton MD, Jennifer Windsor MD, Hannah Hill, Chong Kim MD

INTRODUCTION

- Sleep disturbance and catastrophizing have been shown to be associated with chronic knee pain ¹.
- This study looks at sleep disturbance and catastrophizing and effect on pain in the general chronic pain population.

METHODS

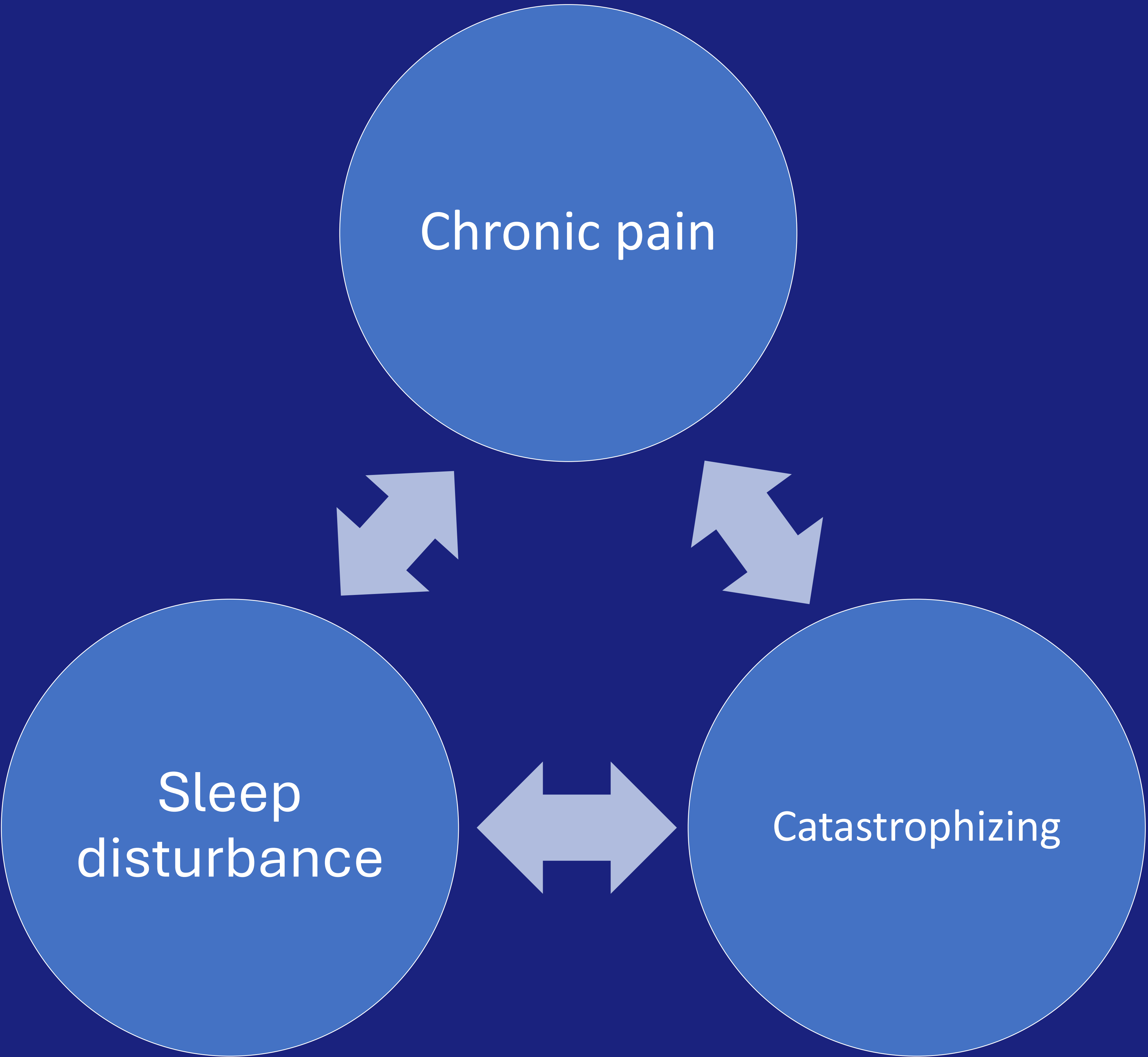
- 102 volunteers in chronic pain clinic with various ailments were surveyed
- Sleep quality was assessed with the Center of Epidemiologic Studies Depression scale (range 1-4)
- Catastrophizing was assessed with the Coping Strategies Questionnaire score ≥3 (range 0-6)
- Pain was assessed with the Visual Analog Scale (range 0-100)
- Univariate analysis was used to assess the association between sleep disturbance with pain and catastrophizing.

RESULTS

- Number of subjects was too limited for meaningful multivariate analysis
- Univariate analysis of sleep disturbance and pain, and sleep disturbance and catastrophizing showed slight, non-statistically significant association

DISCUSSION

- This study suggests there may be an association between sleep disturbance to catastrophizing, as well as to chronic pain, but larger studies were needed to confirm
- Results could provide deeper understanding into the impact of sleep quality interventions on both catastrophizing and pain outcomes.



Characteristic	Overall, N = 102 ¹	<1, N = 15 ¹	1-2, N = 33 ¹	3-4, N = 28 ¹	5-7, N = 26 ¹	p-value ²
age						0.13
Mean (SD)	61 (15)	62 (22)	65 (13)	56 (15)	61 (13)	
Median (IQR)	61 (51, 71)	54 (49, 81)	66 (56, 73)	55 (45, 66)	60 (54, 66)	
Range	21 - 92	21 - 91	33 - 86	26 - 84	40 - 92	
bmi						>0.9
Mean (SD)	32 (8)	32 (8)	33 (9)	32 (7)	32 (7)	
Median (IQR)	32 (27, 37)	31 (27, 36)	31 (27, 39)	31 (27, 36)	33 (26, 37)	
Range	17 - 59	20 - 49	19 - 59	22 - 55	17 - 44	
sex						0.2
F	66 (65%)	9 (60%)	25 (76%)	19 (68%)	13 (50%)	
M	36 (35%)	6 (40%)	8 (24%)	9 (32%)	13 (50%)	
race						0.8
B	34 (33%)	5 (33%)	9 (27%)	9 (32%)	11 (42%)	
O	8 (7.8%)	2 (13%)	2 (6.1%)	3 (11%)	1 (3.8%)	
W	60 (59%)	8 (53%)	22 (67%)	16 (57%)	14 (54%)	
vas						0.011
Mean (SD)	70 (26)	63 (34)	61 (23)	76 (23)	77 (23)	
Median (IQR)	77 (50, 90)	75 (43, 90)	60 (50, 80)	83 (73, 90)	90 (63, 95)	
Range	5 - 100	5 - 100	10 - 100	20 - 100	10 - 100	
cat_ave						0.007
Mean (SD)	3.41 (1.88)	3.30 (1.98)	2.68 (1.67)	3.43 (1.82)	4.38 (1.80)	
Median (IQR)	3.00 (3.00, 4.50)	3.00 (2.25, 4.50)	3.00 (1.50, 3.00)	3.00 (2.63, 4.50)	4.50 (3.00, 6.00)	
Range	0.00 - 6.00	0.00 - 6.00	0.00 - 6.00	0.00 - 6.00	0.00 - 6.00	
md_gad_meds	20 (20%)	1 (6.7%)	7 (21%)	6 (21%)	6 (23%)	0.6
opioids	12 (12%)	0 (0%)	3 (9.1%)	5 (18%)	4 (15%)	0.4
steroids	4 (3.9%)	0 (0%)	1 (3.0%)	2 (7.1%)	1 (3.8%)	0.8
tylenol	53 (52%)	6 (40%)	20 (61%)	15 (54%)	12 (46%)	0.5
nsai_ds	33 (32%)	4 (27%)	9 (27%)	10 (36%)	10 (38%)	0.8

Sleep versus pain

Pain (VAS)	Beta	95% CI ¹	p-value
(Intercept)	63	51, 76	<0.001
sleep			
<1	—	—	
1-2	-2.8	-18, 12	0.7
3-4	13	-2.8, 29	0.11
5-7	14	-1.8, 30	0.086

¹ CI = Confidence Interval

Sleep versus catastrophizing

Cat Average	Beta	95% CI ¹	p-value
(Intercept)	3.3	2.4, 4.2	<0.001
sleep			
<1	—	—	
1-2	-0.62	-1.7, 0.47	0.3
3-4	0.13	-0.99, 1.3	0.8
5-7	1.1	-0.05, 2.2	0.065

¹ CI = Confidence Interval

REFERENCES

- Wang Y, Li X, Zhang Y, Ma Y, Xu S, Shuai Z, Pan F, Cai G. Association of Sleep Disturbance With Catastrophizing and Knee Pain: Data From the Osteoarthritis Initiative. Arthritis Care Res (Hoboken). 2023 Oct;75(10):2134-2141. doi: 10.1002/acr.25127. Epub 2023 May 6. PMID: 37038964; PMCID: PMC10524285.
- Nahin RL. Estimates of pain prevalence and severity in adults: United States, 2012. J Pain. 2015 Aug;16(8):769-80. [PMC free article] [PubMed] [Reference list]
- Finan PH, Goodin BR, Smith MT. The association of sleep and pain: an update and a path forward. J Pain. 2013 Dec;14(12):1539-52. doi: 10.1016/j.jpain.2013.08.007. PMID: 24290442; PMCID: PMC4046588.
- Van Damme S, Crombez G, Bijttebier P, et al. A confirmatory factor analysis of the Pain Catastrophizing Scale: invariant factor structure across clinical and non-clinical populations. Pain 2002;96:319–24.

