

# Injustice Appraisals Mediate the Relationship between Pain Intensity and Sleep Impairment in Children with Chronic Pain



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## Background and Aims

- Chronic pain and sleep impairment frequently co-occur in children.
- Appraising one’s pain as unjust (“pain-related injustice”) has been associated with unique variability in cognitive, emotional, and functional outcomes among children with chronic pain.
- Less is known about the relationship between pain-related injustice and sleep impairment.
- Aim 1:** Examine the associations among pain intensity, injustice appraisals, and sleep impairment in children with chronic pain.
- Aim 2:** Examine the extent to which injustice appraisals mediate the relationship between pain intensity and sleep impairment in children with chronic pain.

## Methods

- Children with chronic pain ( $N = 249$ ,  $M_{age} = 14.3$  years, 73.5% female, 89% White) who were receiving care from an outpatient university-based pain clinic.
- Children completed measures of pain intensity, pain-related injustice, and sleep impairment.

## Results

- Pain intensity was positively correlated with pain-related injustice ( $r = .32$ ,  $p < 0.01$ ) and with sleep impairment ( $r = .22$ ,  $p < 0.01$ ).
- Pain-related injustice was positively correlated with sleep impairment ( $r = .37$ ,  $p < 0.01$ ).
- Bootstrapped mediation analysis indicated that injustice appraisals mediated the relationship between pain intensity and sleep impairment.

## Conclusion

- Injustice appraisals about pain may play a mechanistic role in the association between pain intensity and sleep impairment in children with chronic pain.
- Longitudinal studies are needed to confirm the causal direction of these relationships.
- Ultimately, this line of work may inform justice-focused, cognitive-emotional interventions to reduce pain, enhance sleep, and maximize quality of life among children with chronic pain.

Table 1. Means and standard deviations for variables	
Variable	Mean (SD)
Pain	5.07 (2.27)
Injustice	16.75 (11.78)
Sleep	15.45 (7.20)
Average pain was reported for the past week on a 0 to 10 scale; higher scores indicated more pain. Pain-related injustice (measured using the 12-item IEQ; Sullivan et al., 2008) was reported for the past week on a 0 to 4 scale for each item and then summed; total scores range from 0 to 48, with higher scores indicating greater perceived injustice. Sleep Impairment (measured using the 6-item PISI-C; Byars & Simon, 2014) was reported for the past week on a 0 to 5 scale for each item and then summed; total scores range from 0 to 30, with higher scores indicating greater sleep impairment.	

Table 2. Zero order correlations			
Variable	1	2	3
1) Pain	-		
2) Injustice	.32**	-	
3) Sleep	.22**	.37**	-
**p<.01			

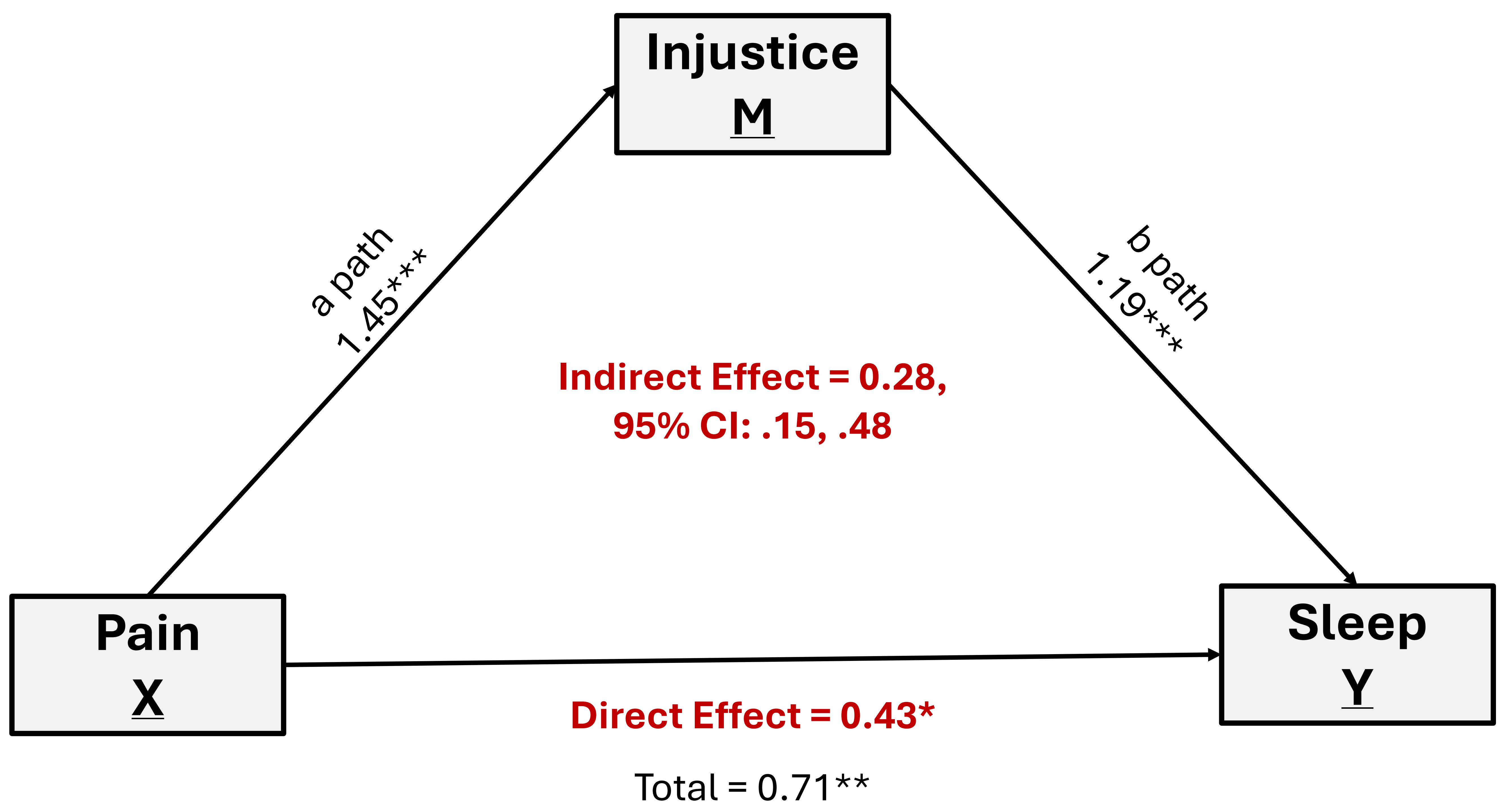


Figure 1. Results of mediation model in which pain-related injustice mediated the association between average pain and sleep impairment. Statistically significant unstandardized coefficients are indicated by \*p<.05, \*\*p<.01, \*\*\*p<.001.