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## Veteran spinal cord injury: Mediating role of pain interference on the relationship between pain and emotional distress.

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### BACKGROUND

- Pain commonly cooccurs with spinal cord injury (SCI) (Putzke, Richards, Hicken, & Devivo, 2002) and has been linked to poorer psychological function and decreased life satisfaction in individuals with SCI (Post, de Witte, van Asbeck, van Dink, & Schriivers, 1998).
- Individuals with SCI who experience chronic pain report greater levels of interference with daily life (Hand, N., Velozo, C., & Krause, J., 2018).
- Pain interference with daily life may lead to emotional distress and depression (Etingen, B., Miskevics, S., & LaVela, S. L., 2018).
- We predicted that pain and mental health symptom severity will have a positive association, and pain interference will mediate this relationship.

### METHODS

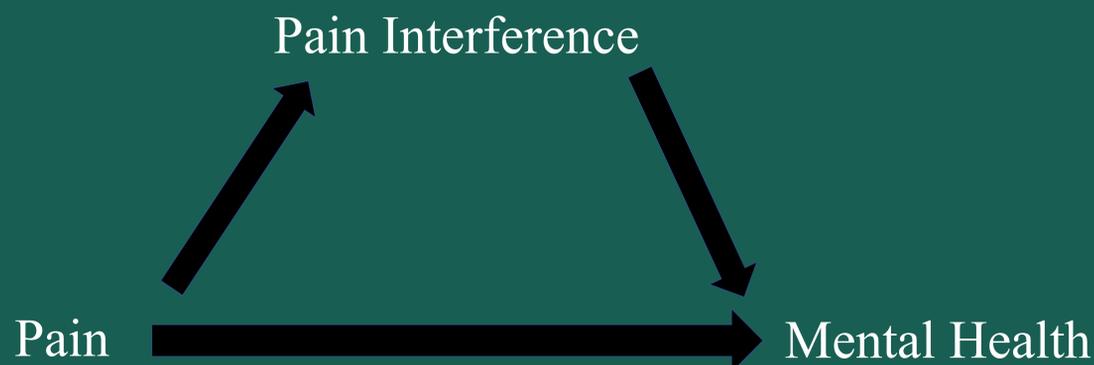
- N = 221
- Cross-sectional, correlational study of outpatient veterans with SCI at an urban VA Medical Center
- All participants were interviewed by a psychologist during their annual evaluation.
- A 4-point Likert scale and 5-point Likert scale was used to measure pain severity and pain interference, respectively.
- Patient Health Questionnaire-4 (PHQ-4), was used as a measure of mental health symptom severity.

### REFERENCES

- Etingen, B., Miskevics, S., & LaVela, S. L. (2018). The relationship between pain interference and psychosocial well-being among veterans with spinal cord injuries/disorders. *Journal of Neuroscience Nursing*, 50(1), 48-55.
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- Post, M. W., de Witte, L. P., van Asbeck, F. W., van Dijk, A. J., & Schrijvers, A. J. (1998). Predictors of health status and life satisfaction in spinal cord injury. *Archives of Physical Medicine and Rehabilitation*, 79(4), 395-401.
- Putzke, J. D., Richards, J. S., Hicken, B. L., & DeVivo, M. J. (2002). Interference due to pain following spinal cord injury: Important predictors and impact on quality of life. *Pain*, 100(3), 231-242.



# For veterans with SCI, pain interference completely mediates the relationship of pain to mental health symptom severity.



## The inability to participate in daily events or routines due to the inhibiting power of pain greatly accounts for the emotional distress associated with SCI.

### ANALYSIS AND RESULTS

- Pain severity was a significant predictor of mental health.
- Pain severity was a significant predictor of pain interference.
- Pain interference was a significant predictor of mental health.
- The overall model was significant ( $F[1, 219] = 17.763, R^2 = .075, p < .001$ ), where pain interference predicts mental health over and above pain severity, thus indicating a complete mediation.
- The direct effect of pain on mental health was not significant.

| Mediation Table |               |       |       |       |       |
|-----------------|---------------|-------|-------|-------|-------|
| Path            | Term          | b     | SE    | t     | p     |
| A               | Pain to Inter | 0.857 | 0.091 | 9.43  | <.001 |
| B               | Inter to MH   | 0.929 | 0.144 | 6.438 | <.001 |
| C               | Pain to MH    | 0.890 | 0.211 | 4.215 | <.001 |

| Effects Table 1       |         |       |       |       |
|-----------------------|---------|-------|-------|-------|
|                       | $\beta$ | SE    | t     | p     |
| Direct Effect of Pain | 0.094   | 0.230 | 0.409 | 0.683 |
| Total Effect of Pain  | 0.890   | 0.211 | 4.215 | <.001 |

| Effects Table 2         |         |       |       |
|-------------------------|---------|-------|-------|
|                         | $\beta$ | UCI   | LCI   |
| Indirect Effect of Pain | 0.796   | 0.493 | 1.140 |

### DISCUSSION

- The findings of this study suggest SCI related emotional distress can result from the inability to participate in daily activities such as going to work, spending time with others, or engaging in hobbies.
- Interference with regular life was found to significantly mediated the positive relationship between SCI-related pain and emotional distress.
- A limitation was that since the data was cross-sectional, we can not be certain the relationships don't work in other ways, such as mental health mediating the relationship between pain and interference.
- Future research may take a more qualitative account of how pain inhibits daily life emotionally and physically and focus on interventions designed to decrease pain's interference with daily living.