

# Do fear of pain, anxiety sensitivity, or pain catastrophizing predict who develops chronic pain?

Shane Kachur, B.M.R. (P.T.), R. Nicholas Carleton, M.A., and Gordon J. G. Asmundson, Ph.D.  
Anxiety and Illness Behaviours Laboratory, University of Regina, Regina, SK

## Introduction

- Current chronic pain models posit catastrophizing about pain and fear of pain as being key to the development of chronic pain (Asmundson, Norton, & Vlaeyen, 2004).
- Catastrophic appraisals of pain are believed to be the result of precedent fear of pain (Vlaeyen & Linton, 2000) and a heightened fear of bodily sensations related to anxiety (e.g., racing heart, sweating, trembling), referred to as anxiety sensitivity (Taylor, 1999).
- Fearing pain is likely to result in anxiety over situations where pain is anticipated, and this anxiety can be confounded with pain itself in persons with high levels of anxiety sensitivity (Asmundson, et al., 2004).
- From a practical view, it would be prudent to identify all cognitive precursors to the development of chronic pain and then, where appropriate, involve multi-disciplinary treatment (MDT) early on.
- The purpose of this study was to examine if injured workers who ultimately receive MDT differ on these important fear constructs relative to those patients who did not received MDT.

## Method

- Participants were 182 patients (75 women, 20-70 years,  $M=42.8$ ,  $SD=11.2$ ; and 107 men, 17-67 years,  $M=40.9$ ,  $SD=12.6$ ). Patients were provided therapy at a local physiotherapy clinic after a mean wait time of 89.5 days from date of injury.
- All participants completed the following self-report questionnaires as part of their physiotherapy admission process:
  - Pain Anxiety Symptoms Scale-20 (PASS-20; McCracken & Dhingra, 2002)
  - Anxiety Sensitivity Index (ASI; Peterson & Reiss, 1992)
  - Pain Catastrophizing Scale (PCS; Sullivan et al., 1995).
- Upon completion of their rehabilitation, the patient's final discharge status, the number of days they received treatment, and whether they were referred for MDT were recorded.
- The patients were then grouped into MDT and no MDT and their self-report responses were compared based on type of injury and final discharge status.

## Results

- There were no significant differences between men and women on age,  $t(180)= 1.04$ ,  $p>.05$ , days of treatment,  $t(172)= 1.17$ ,  $p>.05$ , or any of the self-report measures: PASS,  $t(175)= 1.11$ ,  $p>.05$ ; ASI,  $t(174)= 1.39$ ,  $p>.05$ ; PCS,  $t(174)= .01$ ,  $p>.05$ .
- There were no significant differences between types of injury and final discharge status,  $\chi^2(3)=1.59$ ,  $p>.05$ .
- There were significant differences between type of injury based on days of treatment,  $F(3,173)= 4.62$ ,  $p<.01$ , and PASS,  $F(3,173)= 2.86$ ,  $p<.05$ ; post hoc analysis showed significant differences between upper extremity and low back groups on treatment length and necks and lower extremity with PASS.
- There were no significant differences on any of the other self-report measures: ASI,  $F(3,173)= 2.20$ ,  $p>.05$ ; PCS,  $F(3,172)= 2.17$ ,  $p>.05$ ; Age,  $F(3,178)= .67$ ,  $p>.05$ .
- There were no significant differences between patients requiring MDT and those successfully returning to work based on age,  $t(180)= .43$ ,  $p>.05$ ; however, there were significant differences based on days of treatment,  $t(172)= 1.97$ ,  $p<.05$ , and on all of the self-report measures: PASS,  $t(175)= 3.48$ ,  $p<.01$ ; ASI,  $t(175)= 3.34$ ,  $p<.01$ ; PCS,  $t(175)= 2.73$ ,  $p<.01$ .

## Discussion

- This study supports one postulate of the fear of pain theory; that catastrophic appraisal of pain, fear of pain, and anxiety sensitivity are important components associated with the development of chronic pain and disability.
- Accordingly, measuring these pain beliefs early on may readily identify the need for multi-disciplinary treatment, which may prevent the development of chronic pain and allow for better resource allocation.
- Patients with upper extremity injuries reported lower scores on the PASS and had fewer days of treatment than low back pain sufferers. Upper extremity injuries may be less debilitating over the long run, possibly due to increased exposure or specificity of the injury.
- These differences based on pain area were not repeated for measures of anxiety sensitivity or pain catastrophizing, as the current chronic pain model might have implied (Asmundson et al., 2004).
- As most chronic pain literature deals with low back pain, further assessments of other diagnostic categories should be explored as our results has indicated that there some differences on PASS scores and treatment duration.

Participant characteristics by gender and type of injury

Area	Male	Female	Total	MDT
Low back	38	20	58	15
Neck	18	21	39	11
Upper Extremity	37	27	64	17
Lower Extremity	14	7	21	3
Total	107	75	182	46

Variable Correlations

	Treatment Length	PASS-20	ASI	PCS
Treatment Length				
PASS-20	-.08			
ASI	-.01	.74**		
PCS	-.01	.80**	.66*	
Age	.02	.20**	.17*	.15*

\* significant at the  $p<.05$   
\*\* significant at the  $p<.01$

Means Comparison

