Pain-Related Behavioural Avoidance: The Contributions of Fundamental Fears

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Introduction

- Fear of pain influences escape and avoidance behaviour in people with chronic pain (McCracken et al.,1993, Waddell et al., 1993).
- Pain-related behavioural avoidance also promotes and maintains disability (Waddell et al., 1993).
- There is evidence supporting a relationship between fear of pain, anxiety sensitivity (AS – the fear of anxiety-related bodily sensations based on the belief that they may have harmful consequences; Reiss & McNally, 1985), and behavioural avoidance.
- AS influences fear of pain and, in turn, fear of pain influences escape and avoidance behaviours (Asmundson & Taylor, 1996; Norton & Asmundson, 2004).
- In addition to AS, other fundamental fears (i.e., fear of negative evaluation, fear of illness/injury/death; Reiss, 1991) may influence fear of pain and pain-related behavioural avoidance.
- The purpose of the present study was to investigate the role of fundamental fears (including AS) in pain-related escape and avoidance behaviours.

Method

- Participants comprised a group with chronic musculoskeletal pain (n=31; 42% women; ages 18-64; M=46.2; SD=10.5) and healthy controls matched on age, sex, and education levels (n=20; 50% women, ages 22-62; M=43.4; SD=10.9).
- Demographics were supplemented by the following self-report measures:
  - Anxiety Sensitivity Index (ASI; Peterson & Reiss, 1992; Zinbarg et al., 1997)
  - Brief Fear of Negative Evaluation Scale-II (BFNE-II; Carleton et al., 2006)
  - Illness/Injury Sensitivity Index, Revised (ISI-R; Carleton et al., 2005)
  - Pain Anxiety Symptoms Scale-20 (PASS-20; McCracken & Dhingra, 2002)
  - McGill Pain Questionnaire - Visual Analogue Scale (MPQ-VAS; Melzack, 1987)
- Chronic pain was assessed by self-report of persistent pain for at least 3 months. Healthy controls had to be pain free with no history of chronic pain.
- Each measure was subdivided into its component subscales. Regression analyses were used to assess variance accounted for in pain-related escape/avoidance behaviour (PASS subscale) by the subscales of the ASI and ISI-R, as well as the BFNE-II and the MPQ-VAS.

Results

- Regression models for the healthy control and chronic pain groups, as well as a regression model across both groups, are presented in Tables 1, 2, and 3.
- Across both groups, partial correlations between the escape/avoidance subscale of the PASS, the ASI somatic subscale, r(43)=.30, and the ISI-R fear of injury subscale, r(43)=.43, were significant (p<.05).
- Within the chronic pain group, partial correlations between the escape/avoidance subscale of the PASS and either the ASI somatic subscale, r(23)=.34; p<.10, or the ISI-R fear of injury subscale, r(23)=.46; p<.05, remained unchanged; however, the ASI somatic subscale only trended towards significance, while the ISI fear of injury subscale remained significant.
- Within the healthy control group, partial correlations between the escape/avoidance subscale of the PASS and either the ASI somatic subscale, r(13)=.23; p>.10, or the ISI-R fear of injury subscale, r(13)=.42; p>.10, were no longer significant.
- Although the correlation between the escape/avoidance subscale of the PASS and the ASI somatic subscale was lower for the healthy control group relative to the chronic pain group, a Fisher's r to z transformation comparing the correlations found no significant difference, z=0.39, p>.10.

Discussion

- The present study supports the view that AS plays an important role in pain-related escape and avoidance behaviour. This is consistent with previous findings (e.g., Asmundson & Taylor, 1996; Norton & Asmundson, 2004) delineating an interaction between AS, fear of pain, and behavioural avoidance.
- The ASI somatic subscale was a significant predictor of pain-related escape and avoidance across both groups (accounting for 9% of the variance).
- Furthermore, the ISI-R fear of injury subscale significantly influenced pain-related escape and avoidance behavior across both groups (accounting for an additional 18% of the variance).
- Subsequent analyses suggested that fear of injury may be specifically related to behavioural avoidance in chronic pain participants rather than healthy controls (accounting for 21% of the variance).
- Research is needed to further investigate the roles of AS (particularly the ASI somatic subscale) and fear of injury with pain-related behavioural avoidance.
- These findings contribute to a growing body of evidence suggesting that interventions targeting AS (and perhaps targeting fear of injury), may also reduce pain-related escape and avoidance.

Table 1. Regression model, ANOVA summary table, and coefficients across both groups

$R^2\Delta$ = .44	*SS*	*df*	*MS*	*F*	*β*	*t*	*p*	Correlations		
Regression	557.54	7	79.65	4.88			<.01			
Residual	701.88	43	16.32							
Total	1259.41	50						Zero-order	Partial	Part
(Constant)						1.87	.07			
ASI Somatic					.38	2.08	.04	.48	.30	.24
ASI Cognitive					-.01	-.07	.94	.19	-.01	-.01
ASI Social					.03	.19	.85	.40	.03	.02
BFNE-II					-.22	-1.51	.14	.00	-.22	-.17
ISI-R Illness					-.43	-1.81	.08	.28	-.27	-.21
ISI-R Injury					.66	3.09	<.01	.51	.43	.35
MPQ-VAS					.13	1.06	.30	.26	.16	.12

Table 2. Regression model, ANOVA summary table, and coefficients – chronic pain

$R^2\Delta$ = .54	*SS*	*df*	*MS*	*F*	*β*	*t*	*p*	Correlations		
Regression	366.49	7	52.36	3.92			.01			
Residual	307.06	23	13.35							
Total	673.55	30						Zero-order	Partial	Part
(Constant)						1.36	.19			
ASI Somatic					.39	1.72	<.10	.57	.34	.24
ASI Cognitive					.12	.52	.61	.32	.11	.07
ASI Social					.11	.60	.56	.47	.12	.08
BFNE-II					-.22	-1.34	.19	-.08	-.27	-.19
ISI-R Illness					-.54	-1.63	.12	.40	-.32	-.23
ISI-R Injury					.67	2.49	.02	.56	.46	.35
MPQ-VAS					.17	1.04	.31	.35	.21	.15

Table 3. Regression model, ANOVA summary table, and coefficients – healthy control

$R^2\Delta$ = .35	*SS*	*df*	*MS*	*F*	*β*	*t*	*p*	Correlations		
Regression	193.17	6	32.20	1.15			.39			
Residual	364.63	13	28.05							
Total	557.80	19						Zero-order	Partial	Part
(Constant)						2.10	.06			
ASI Somatic					.33	.83	.42	.36	.23	.19
ASI Cognitive					-.11	-.42	.68	-.03	-.12	-.09
ASI Social					-.14	-.30	.77	.35	-.08	-.07
BFNE-II					-.03	-.07	.95	.11	-.02	-.02
ISI-R Illness					-.58	-1.14	.28	.08	-.30	-.26
ISI-R Injury					.78	1.65	.12	.41	.42	.37

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