

Self-Conscious Emotions in Chronic Musculoskeletal Pain: A Brief Report

Objective The role of self-conscious emotions (SCEs) including shame, guilt, humiliation, embarrassment and pride are of increasing interest within health. Yet little is known about SCEs in the experience of chronic pain. This study explored the prevalence and experience of SCEs in chronic pain patients compared to controls and assessed the relationship between SCEs and disability in pain patients.

Design and measures Questionnaire assessment comparing musculoskeletal pain patients (n=64) and pain free control participants (n=63). Pain was assessed using the McGill Pain Questionnaire (SFMPQ); disability using the Roland-Morris Disability Questionnaire (RMDQ); and six SCEs derived from three measures (i) Test of Self-Conscious Affect-3 (TOSCA-3) yielding subscales of shame, guilt, externalisation and detachment (ii) The Brief Fear of Negative Evaluation Scale (FNEB) and (iii) The Pain Self Perception Scale (PSPS) assessing mental defeat. *Results* Significantly greater levels of shame, guilt, fear of negative evaluation and mental defeat were observed in chronic pain patients compared to controls. In the pain group, SCE variables significantly predicted affective pain intensity; only mental defeat was significantly related to disability.

Conclusion Findings highlight the prevalence of negative SCEs in the chronic pain experience and demonstrate the importance of considering SCEs in assessment and management of chronic pain. Future research may examine the role of mood, such as negative affect or depression, in these relations between SCE and chronic pain

Keywords : self-conscious emotions, shame, guilt, chronic pain

Introduction

Despite increased interest in the role of self-conscious emotions (SCEs) in health (Dickerson, Gruenewald, and Kemeny, 2004; Slavich, O'Donovan, Epel, and Kemeny, 2010), relatively little attention has focused on their role in chronic pain. SCEs (e.g. shame, guilt, humiliation, and embarrassment) relate to identity and sense of self; they serve to motivate and regulate behaviour toward actions that are socially valued and adaptive (Fischer and Tangney, 1995; Gilbert, 2000). The idea that chronic pain experience over time could lead to a defeated, inferior or denigrated self and how this might relate to disability, distress or chronic pain syndrome is an important one (Smith and Osborn, 2007; Tang et al., 2007). Evidence suggests that distress and disability in the experience of chronic pain are related to SCEs (Pincus and Morley, 2001; Morley, Davies, and Barton, 2005; Osborn and Smith, 2006) although one recent study found no difference between rheumatoid arthritis patients and controls in levels of shame and guilt (ten Klooster et al., 2014). address this. Self-discrepancy theory (Higgins, 1987) suggests that tension between different selves (actual-, ideal- and ought-self) within the same person that can produce anxiety, worry or depression and despair, or more severe pain (Tice, 1992; Waters, Keefe, and Strauman, 2004) and could potentially generate shame, embarrassment and guilt. The self-pain enmeshment model (Pincus and Morley, 2001) theorises that the experience of chronic pain relates to the degree to which the three schemas of pain, self, and illness might over-lap or enmesh. Evidence supports a relationship between self-pain enmeshment and information-processing bias, emotional adjustment, levels of acceptance and affect in chronic pain (Morley et al., 2005; Sutherland and Morley, 2008). Chronic pain patients often exhibit significant social withdrawal and worry about the views of others and whether their pain is considered legitimate. Fear of negative evaluation is viewed here as one strand of shame and guilt and suggested as one of the more critical elements of negative self-conscious emotion.

The present study explores the prevalence and experience of SCEs in chronic pain patients compared to controls. The aim was to examine and highlight associations between self-conscious emotions and patients' pain experience and related disability. Greater levels of shame, guilt, fear of negative evaluation, and mental defeat were predicted in chronic pain patients compared to controls. In the pain group, scores on SCEs were expected to predict pain intensity and show evidence of mediation between pain intensity and disability.

Method

Participants: Sixty four pain patients (60.9% female) and 63 pain free controls (58.7% female). Pain patients had been referred to the Pain Clinic at a regional city hospital, diagnosed with musculoskeletal pain (chronic back pain and sciatica). Two additional patients hospitalised for severe psychiatric problems in the last two years and one with chronic facial pain were excluded at point of entry. Patients were aged 18-73 years ($M = 46$ years), average duration of chronic pain was 93.52 months (7.8 years; 6 months-20 years), and physical functioning was 'high limited' ($M=16$, $SD=4.54$). Controls were without chronic musculoskeletal pain, aged 24-75 years ($M = 43$ years), and recruited from hospital and university staff.

Measures: Pain was assessed using the short-form McGill Pain Questionnaire (SFMPQ), (Melzack, 1987) assessing pain intensity, assessing sensory, affective and total pain intensity, a visual analog scale (VAS) of overall pain intensity and a verbal descriptor scale of present pain intensity. Cronbach's α for both groups was 0.70 and above for sensory and total pain intensity with the affective pain rating 0.38 (controls) and 0.40 (pain group). Disability was assessed using the 24-item Roland-Morris Disability Questionnaire (RMDQ). Scores ranged from 0= 'no disability' to 24='severe disability' ('low limited functioning' <15 ; 'high limited functioning' ≥ 15 (Roland and Morris, 1983; Roland and Fairbank, 2000) with Cronbach's

$\alpha = 0.82$. *Self-conscious emotions* were assessed using three different questionnaires: i) Test of Self-Conscious Affect-3 (TOSCA-3) (Tangney and Dearing, 2002, pp. 207-214) short version composed of 11 negative scenarios each assessing Shame-Proneness, Guilt-Proneness, Externalization and Detachment/Unconcern. Participants were asked to imagine themselves in each scenario (e.g. “You make plans to meet a friend for lunch. At 5 o’clock, you realise you stood your friend up”) and to indicate how likely they would be to react in each of the ways described (e.g. “You would think ‘I’m inconsiderate’” = shame) where 1 = ‘not likely’ and 5 = ‘very likely’ (Tangney and Dearing, 2002, p. 207). Cronbach’s α for each of the scales in both groups were ≥ 0.70 ; ii) 12-item Brief Fear of Negative Evaluation Scale (FNEB) (Leary, 1983). Responses were based on a 5-point Likert scale where 1 = ‘not at all...’ to 5 = ‘extremely characteristic of me’. Cronbach’s α was 0.90 for both groups; and iii) 24-item Pain Self Perception Scale (PSPS) (Tang, Salkovskis and Hanna, 2007) to assess mental defeat specific to chronic pain. Participants recalled a recent pain episode, identified its time/duration characteristics, then rated the extent to which statements (e.g. “I felt powerless”; I felt that life had treated me like a punchbag”) applied to the experience. Responses were rated on a 5-point scale (0 = ‘never’ to 4 = ‘very strongly’) generating a total score of 0 to 96. Cronbach’s $\alpha = 0.90$ (controls) and 0.97 (pain group).

Procedure: All chronic pain patients who met the study criteria were approached by staff and recruited at the hospital Pain Clinic whilst attending for therapeutic programmes.

Questionnaires were completed at home or in a private clinic room after consultation with the research assistant. Ninety patients were approached, of which sixty-seven (74.4%) agreed to complete questionnaires; three were ineligible to participate, leaving a final sample of 64 patients. Control participants were recruited via advertisements, completing questionnaires on site or at home. Ethical approval was obtained from the Local Research Ethics Committee

(National Health Service) and the University Departmental Ethics Committee. All participants gave written informed consent.

Results

Initial t-tests found no significant differences between pain and control groups by age or sex. Pain intensity scores for the patient group were significantly greater than for the control group across all pain variables ($p < .001$) establishing a distinct pain population. Total pain intensity mean for the patient group was 26.42 (SD=8.14) compared to 3.13 (SD=3.01) for controls. In the pain group, no significant differences were detected for pain intensity by sex, age or duration of pain.

Comparisons between the two groups on SCE variables found a significant overall difference between the pain and control group ($F(6,120)=23.36$; $p=0.001$; Wilks' Lambda = 0.461; partial eta squared=0.54). Significant differences between groups were observed for five out of the six SCEs assessed (table 1). The pain group presented higher levels of shame, guilt, fear of negative evaluation and mental defeat and lower levels of detachment in comparison with controls. Partial eta squared values reveal large effect sizes for shame and mental defeat (explaining 35% and 47% of the variance respectively); medium effect sizes for guilt and fear (explaining 18% and 13% of the variance respectively), and small effects for externalization and detachment (explaining .8% and 7.4% of the variance respectively). Overall, these effects support the primary hypothesis that the pain group would show significantly higher scores for self conscious emotions compared to controls.

Insert table 1 about here

In the pain group, regression analyses using SCE variables as predictors of pain intensity revealed significant relationships for affective pain intensity ($F(6,57)=2.93$, $p=0.015$), accounting for 15.6% of the variance. None of the predictor variables made a

significant unique contribution to pain outcome. Since no significant correlation between total pain intensity and disability ($r=.32$; $p=.011$; ns using Bonferroni adjusted alpha level of .008) was established in the patient group, mediation analysis was not applied (Baron and Kenny, 1986). It is noted that despite total pain intensity and disability being ns, affective pain intensity but not sensory pain intensity were weakly correlated with disability ($r=.34$; $p=.005$). With the exception of pain perception/mental defeat, SCEs were not significantly correlated with disability (table 1).

Discussion

Chronic pain patients reported significantly greater levels of shame, guilt, fear of negative evaluation and mental defeat compared to the healthy control group. Although combined they predicted 15.6% of the variance in patients' affective pain experience, none made a significant unique contribution to the patients' affective pain experience. Findings highlight the social and moral dimensions of the unpleasantness of chronic pain, in accord with Higgins (1987) self-discrepancy theory and the self-pain enmeshment model (Pincus and Morley, 2001). They add to the increasing interest in the role of SCEs in health and well-being and highlight the presence of high levels of negative self-conscious emotion in a chronic pain. The high incidence of mental defeat in the chronic pain sample is particularly striking and reflects the findings of Tang and colleagues (2007). Similarly, pain patients scored highly on the fear of negative evaluation scale (FNE), which refers to distress arising from concerns about being judged harshly by others and may interfere with the individuals' ability to function optimally. This study places the chronic pain experience firmly within a social and relational context (Dickerson et al., 2009).

There are a number of limitations to this study, not least that it was small scale and requires replication with larger samples of chronic pain patients, a range of other pain related conditions and a greater range and variety of measures. Use of longitudinal and real world

situational methods could yield more in depth information with regard to the differentiation of SCEs, particularly including individual difference factors. A further limitation is the potential confound of mood related variables, in particular that of negative affect and depression, not controlled for in this study. Future work is called for which assesses mood variables in a larger, more extensive study, employing multifactorial or hierarchical analysis. The relationship between SCEs and pain experience may be mediated by mood and a direct test of this relationship is needed. There is also a need for further exploration of SCEs as mediators which was not warranted in this sample. SCEs require further examination to be confident that they make a distinct contribution and are not simply a reflection of negative affect within the context of chronic pain. Future research could also explore the degree to which SCEs are established within the self and whether characteristics of SCEs represent a personality trait in some individuals. It may be possible to identify those at risk for experiencing greater levels of SCEs whose self-identity may be more vulnerable.

Further analysis of SCEs is necessary before their implications can be applied to the development and management of interventions in chronic pain and specific recommendations at this stage would be premature. However, the evidence presented supports the argument that attending to SCEs explicitly could be a potentially valuable resource to enhance pain management interventions (Gustafsson, Ekholm, and Ohman, 2004). Future work to this end may offer a beneficial perspective in understanding and treating chronic pain.

Acknowledgements

The authors would like to express their gratitude to all participants who contributed time and effort to this study and to the hospital staff who enabled recruitment. The authors state there are no financial or other relationships that might lead to a conflict of interest with regard to this manuscript.

References

- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*, 1173-1182. doi: 10.1037/0022-3514.51.6.1173
- Dickerson, S. S., Gruenewald, T. L., & Kemeny, M. E. (2004). When the social self is threatened: shame, physiology, and health. *Journal of Personality, 72*, 1191-1216. doi: 10.1111/j.1467-6494.2004.00295.x
- Dickerson, S.S., Gruenewald, T.L., Kemeny, M.E. (2009). Psychobiological responses to social self threat: Functional or detrimental? *Self and Identity, 8*, 270-285. doi: 10.1080/15298860802505186
- Fischer, K.W., Tangney, J.P. (1995). Self conscious emotions and the affect revolution: Framework and overview. In Tangney, J.P., Fischer, K.W. (eds) *Self Conscious Emotions: The psychology of shame, guilt, embarrassment, and pride*. Guilford Press, New York; London, pp. 3-24.
- Gilbert, P. (2000). The relationship of shame, social anxiety and depression: The role of the evaluation of social rank. *Clinical Psychology & Psychotherapy, 7*, 174-189. doi: Doi 10.1002/1099-0879(200007)
- Gustafsson, M., Ekholm, J., & Ohman, A. (2004). From shame to respect: musculoskeletal pain patients' experience of a rehabilitation programme, a qualitative study. *Journal of Rehabilitation Medicine, 36*, 97-103. Retrieved from PubMed(NLM) Accession number: 15209451
- Higgins, E. T. (1987). Self-discrepancy: a theory relating self and affect. *Psychological Review, 94*, 319-340. Retrieved from PubMed(NLM) Accession number: 3615707

- Kemeny, M.E. (2009). Psychobiological responses to social threat: Evolution of a psychological model in psychoneuroimmunology. *Brain, Behavior, and Immunity*, 23, 1-9. doi: 10.1016/j.bbi.2008.08.008
- ten Klooster, P. M., Christenhusz, L. C., Taal, E., Eggelmeijer, F., van Woerkom, J. M., & Rasker, J. J. (2014). Feelings of guilt and shame in patients with rheumatoid arthritis. *Clinical Rheumatology*. Advance online publication. doi: 10.1007/s10067-014-2516-3
- Leary, M. R. (1983). Social anxiousness: the construct and its measurement. *Journal of Personality Assessment*, 47, 66-75. doi: 10.1207/s15327752jpa4701_8
- Melzack, R. (1987). The short-form McGill Pain Questionnaire. *Pain*, 30, 191-197. doi: 0304-3959(87)91074-8 [pii]
- Morley, S., Davies, C., & Barton, S. (2005). Possible selves in chronic pain: self-pain enmeshment, adjustment and acceptance. *Pain*, 115, 84-94. doi: 10.1016/j.pain.2005.02.021
- Osborn, M., Smith, J.A. (2006). Living with a body separate from the self. The experience of the body in chronic benign low back pain: an interpretative phenomenological analysis. *Scandinavian Journal of Caring Sciences*, 20, 216-222. doi 10.1111/j.1471-6712.2006.00399.x
- Pincus, T., & Morley, S. (2001). Cognitive-processing bias in chronic pain: a review and integration. *Psychological Bulletin*, 127, 599-617. Retrieved from PubMed(NLM) Accession number: 11548969
- Roland, M., Fairbank, J. (2000). The Roland-Morris Disability Questionnaire and the Oswestry Disability Questionnaire. *Spine (Phila Pa 1976)*, 25, 3115-3124. Retrieved from PubMed(NLM) Accession number: 11124727
- Roland, M., Morris, R. (1983). A study of the natural history of back pain. Part I: development of a reliable and sensitive measure of disability in low-back pain. *Spine*

(*Phila Pa 1976*), 8, 141-144. Retrieved from PubMed(NLM) Accession number:
6222486

Slavich, G. M., O'Donovan, A., Epel, E. S., & Kemeny, M. E. (2010). Black sheep get the blues: a psychobiological model of social rejection and depression. *Neuroscience Biobehavioral Reviews*, 35, 39-45. doi: 10.1016/j.neubiorev.2010.01.003

Smith, A.J., Osborn, M. (2007). Pain as an assault on the self: an interpretative phenomenological analysis of the psychological impact of chronic benign low back pain. *Psychology and Health*, 22, 517-534. doi: 10.1080/14768320600941756

Sutherland, R., Morley, S. (2008). Self-pain enmeshment: future possible selves, sociotropy, autonomy and adjustment to chronic pain. *Pain*, 137, 366-377. doi:
10.1016/j.pain.2007.09.023

Tang, N.K., Salkovskis, P.M., Hanna, M. (2007). Mental defeat in chronic pain: initial exploration of the concept. *The Clinical Journal of Pain*, 23, 222-232. doi:
10.1097/AJP.0b013e31802ec8c6

Tangney, J.P., Dearing, R.L. (2002). *Shame and guilt*. Guilford Press, New York.

Tice, D.M. (1992). Self-concept change and self-presentation: the looking glass self is also a magnifying glass. *Journal of Personality and Social Psychology*, 63, 435-451.
Retrieved from PubMed(NLM) Accession number: 1403623

Waters, S. J., Keefe, F. J., & Strauman, T. J. (2004). Self-discrepancy in chronic low back pain: relation to pain, depression, and psychological distress. *Journal of Pain and Symptom Management*, 27, 251-259. doi: 10.1016/j.jpainsymman.2003.07.001

Table 1 Comparison of self conscious emotions (SCEs) in pain patients and controls

SCE measures	Pain patients	Controls	F(1,125)	<i>p</i>	η_p^2	Correlation with physical functional status (disability) – pain patients only <i>r</i>
	(n=64) <i>M (SD)</i>	(n=63) <i>M (SD)</i>				
TOSCA						
Shame-Proneness	35.03(8.44)	24.48(5.69)	68.06	<.001*	.35	.21
Guilt-Proneness	46.52(5.07)	40.89(6.92)	27.37	<.001*	.18	.09
Externalisation	22.69(6.85)	21.54(6.23)	0.98	.325	.01	.25
Detachment	28.50(6.97)	32.90(8.61)	10.05	.002*	.07	.07
FNEB						
Fear of Negative Evaluation	41.05(10.91)	32.87(9.83)	19.64	<.001*	.14	.18
PSPS						
Mental Defeat	46.38(26.35)	9.37(9.04)	111.34	<.001*	.47	.36*

*Significant using Bonferroni adjusted alpha level = .008