Introduction

Few studies have directly investigated the role of personality, pain catastrophizing and pain-related fear in explaining vigilance to pain. The cognitive-affective model (Eccleston & Crombez, 1999) states that pain catastrophizing and pain-related fear should be seen as important mediators of the relationship between personality and vigilance to pain. However, to our knowledge, no direct evidence of the putative mediating role of pain catastrophizing and pain-related fear has been provided. Instead of having a direct influence on vigilance to pain, personality characteristics, and neuroticism in particular, may be conceptualized within a diathesis-stress framework (Eysenck, 1992). Neuroticism may be seen as a vulnerability factor in developing pain-related fear and catastrophic thoughts about pain. Especially for high-neurotic individuals, a low pain severity might be sufficient to be perceived as threatening and to evoke catastrophic thoughts (Wade & Price, 2000). The aim of this study was to examine the role of neuroticism, pain-related fear and pain catastrophizing in explaining vigilance to pain.

Results

Neuroticism

Pain catastrophizing

Pain-related fear

Vigilance to pain

Path a

β = .35, α < .001

Path b

β = .50, α < .001

Path c

β = .30, α < .0005

Figure 1

To examine the role of neuroticism in the relationship between pain intensity and pain catastrophizing, a moderation analysis was conducted. The interaction variable (pain intensity × neuroticism) was found to be a significant predictor of pain catastrophizing (β = .30, p < .0005), indicating that the association between pain intensity and pain catastrophizing is conditional on the values of neuroticism. A post-hoc probing procedure revealed that pain intensity is a significant predictor of pain catastrophizing in high-neurotic individuals, but not in low-neurotic individuals, as shown in Figure 3.

Method

Participants

This study included 122 patients with non-specific chronic or recurrent back pain, who were recruited from a physical revalidation unit and an orthopedic unit at two university hospitals. The majority of the participants were female (60.7%), 84.2% was married or cohabiting and 22% had a higher education. The average chronicity of the participants’ pain was 97.98 months. More than one third of the patients (37.5%) was receiving a worker’s compensation and 40.4% had undergone at least one spinal surgery.

Questionnaires

Patients completed a battery of questionnaires designed to assess the following constructs:

- Pain severity: Multidimensional Pain Inventory – Part 1 (MPI; Lousberg et al, 1999)
- Vigilance to pain: Pain Vigilance and Awareness Questionnaire (PV/AQ; McCracken, 1997)
- Pain catastrophizing: Pain Catastrophizing Scale (PCS; Sullivan et al, 1995)
- Pain-related fear: the adjusted Tampa Scale for Kinesiophobia (TSK-AV; Kori et al, 1990)
- Personality: Big Five Personality Questionnaire (NEO-FFI; Costa & McCrae, 1992)

Conclusions

The present study aimed at clarifying the role of catastrophic thinking about pain, pain-related fear and neuroticism in its relationship with vigilance to pain and pain intensity. The results indicate that the effect of neuroticism upon vigilance to pain is largely mediated by pain catastrophizing and pain-related fear. This finding is in line with the symptom perception model of Watson and Pennebaker (1989), which postulates a direct effect of neuroticism on vigilance to pain. Our results support the idea that vigilance to pain is critically dependent upon its immediate threat value (Eccleston & Crombez, 1999). Exploring the specific role of neuroticism, our results point out that neuroticism moderates the relationship between pain intensity and pain catastrophizing. This indicates that neuroticism may be seen as a vulnerability factor within a diathesis-stress framework: it lowers the threshold at which pain is perceived, and at which catastrophic thoughts about pain emerge. For high-neurotic individuals, a low pain intensity is sufficient to be perceived as threatening and to evoke catastrophic thoughts.

References


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