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Personality and fibromyalgia: Relationships with clinical, emotional, and functional variables

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ABSTRACT

This study evaluates H.J. Eysenck's three personality dimensions (neuroticism, extraversion, and psychoticism) in patients with fibromyalgia (FMS) compared with healthy controls (HC), and analyzes their association with clinical, emotional and functional variables and pain coping strategies. Ninety-two FMS patients and 65 HC completed the abbreviated EPQR, in addition to instruments measuring clinical pain, fatigue, sleep, anxiety, depression, health related quality of live (HRQL) and pain coping strategies. Results showed: (1) FMS patients exhibited greater levels of neuroticism and psychoticism but not extroversion, in comparison with HC; (2) group differences in all measured variables remained when the three personality dimensions were entered as covariates; (3) while in HC neuroticism was positively associated with pain, anxiety, depression, catastrophizing strategy scores, and lower HRQL, in FMS patients associations were sparse and lower in magnitude; (4) in FMS patients extroversion was associated with lower pain, anxiety, and depression, and higher mental HRQL; and (5) psychoticism was associated with lower anxiety in the FMS group and greater catastrophizing in HC. Data suggest that neuroticism only plays a minor role in clinical manifestations of FMS. However, extraversion appears to exert a protective influence in FMS, as it is associated with better health outcomes in several domains.

1. Introduction

Fibromyalgia syndrome (FMS), a chronic disorder characterized by persistent and widespread musculoskeletal pain, affects 2–4% of the general population (Wolfe, Ross, Anderson, Russell, & Hebert, 1995; Wolfe et al., 1990). FMS occurs predominately in females, affecting approximately 3.4% of women and 0.5% of men (Wolfe et al., 1990). In addition to pain, FMS is characterized by a heterogeneous range of symptoms such as fatigue, insomnia, morning stiffness, mild cognitive impairment, migraine and irritable bowel syndrome, among others (Wolfe et al., 2010; Yunus, 2007). FMS is also associated with a high prevalence of anxiety and mood disorders (e.g. Fietta, Fietta, & Manganelli, 2007; Reyes del Paso, Pulgar, Duschek, & Garrido, 2012; Van Middendorp et al., 2008). The etiology and pathophysiology of FMS are currently unknown and there are no specific somatic signs of disease, which appears to involve abnormal central pain processing and inhibition of central anti-nociceptive inhibitory mechanisms (i.e. central pain sensitization), resulting in diffuse hyperalgesia and allodynia (Loggia et al., 2014).

Pain is a multidimensional phenomenon affected by attentional, emotional and cognitive factors, in addition to prior experience (McMahon & Wall, 2006). Psychological factors (depression, anxiety, coping, self-efficacy, social support, etc.) can play a significant role in the development and maintenance of chronic pain, as well as in the severity of reported symptoms and complaints (Martínez, Sánchez, Miró, Medina, & Lami, 2011; McMahon & Wall, 2006). Affective measures are associated with clinical pain reports (Petzke, Gracely, Park, Ambrose, & Clauw, 2003). Pain increases negative emotional states and psychological distress, which in turn may engender subsequent increases in pain (Loggia, Mogil, & Bushnell, 2008; Martínez et al., 2011). Cognitive variables, such as catastrophizing, are relevant to the development and maintenance of this vicious circle of chronic pain (Keefe, Rumble, Scipio, Giordano, & Perri, 2004). For example, greater catastrophizing is associated with increased pain and pain-related disability in FMS (Geisser & Roth, 1998; Geisser et al., 2003) as well with increased activation of brain areas associated with pain processing (Gracely et al., 2004). Lower self-esteem levels in FMS patients also appear to modulate the use of non-adaptive pain and stress copying strategies (Dysvik, Natvig, Eikeland, & Lindstrom, 2005).

One variable that may modulate psychosocial factors affecting pain experience is personality. Through several mediating mechanisms (propensity of specific emotional states, sensitivity–

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reactivity, coping strategies, life style, interpersonal and social relationships, etc.), personality can significantly influence how pain is experienced and evaluated, how we react to and experience it, the adjustment process to a chronic illness, the use of medication and medical services, adherence and compliance with professional prescriptions, etc. (Affleck, Tennen, Urrows, & Higgins, 1992; Asghari & Nicholas, 2006; Ramírez, Esteve, & López, 2001). FMS has been associated with extreme personality traits (Anderberg, Forsgren, Ekselius, Marteinsdottir, & Hallman, 1999; Kendall, Elert, Ekselius, & Gerdle, 2002; Pérez-Pareja, Sesé, González-Ordi, & Palmer, 2010), with patients described as perfectionists (Ayats, Martín, & Soler, 2006; Herken, Gursoy, Yetkin, Virit, & Esgi, 2001), exhibiting emotional dependence (Cerón, Centelles, Abellana, & García, 2010), unrealistically high expectations of themselves and people around them (Gursoy, Erdal, Herken, Madenci, & Alasehirli, 2001; Herken et al., 2001), tendencies toward somatization (Gursoy et al., 2001), introspection, pessimism regarding the future (Kendall et al., 2002), high levels of demanding behavior (Amir et al., 2000), exasperating (Asbring & Narvanen, 2003), harm avoidance (Glazer, Buskila, Cohen, Ebstein, & Neumann, 2010), etc. Overall, it appears that the FMS-type personality is associated with greater psychological vulnerability (Hallberg & Carlsson, 1998; Hassett, Cone, Patella, & Sigal, 2000).

One of the most well-known and empirically supported personality theories is that of H. J. Eysenck (Eysenck & Eysenck, 1985), which includes three broad dimensions of personality, namely neuroticism (N), extraversion (E) and psychoticism (P), measured with the Eysenck Personality Questionnaire (EPQ). N (a stable tendency toward the experience of negative emotions, physiological hyperreactivity, greater physical and mental fatigability, higher distress in response to environmental stressors, etc.) represents a personality trait of great public health significance, because it is associated with numerous comorbid mental and physical disorders, in addition to increased use of mental and general health services, and impaired life quality and longevity among other outcomes (Lahey, 2009). Chronic pain patients who score high on N tend to experience more intensely and catastrophically their symptoms and negative emotions (Affleck et al., 1992; Montoya, Pauli, Batra, & Wiederman, 2005), and showed a reduced ability to tolerate discomfort (Costa, 1987; Harkins, Price, & Braith, 1989). High levels of N may also be associated with pain catastrophizing and a more passive-oriented stress and pain coping strategies (Asghari & Nicholas, 2006; Martínez et al., 2011; Ramírez et al., 2001). In turn, passive coping strategies predict higher perceived pain intensity (Affleck et al., 1992; Bolger, 1990). High N is also associated with lower scores for health-related quality of life (HRQL) (McCain, 1996). Furthermore, N, along with E, is associated with autonomic nervous system responses to pain (Paine, Kishor, Worthen, Gregory, & Aziz, 2009).

High N has been widely implicated as a potential mechanism underlying chronic pain diseases, including FMS. High N scores in FMS patients, in comparison to healthy controls, have been reported previously (Asghari & Nicholas, 1999; Besteiro et al., 2008; Netter & Hennig, 1998; Malt, Olafsson, Lund, & UrsIn, 2002). However, the relationship between N and FMS symptoms is not clear. Some studies have found associations between N and pain anxiety and severity, depression, stress, anxiety, sleep disturbance, fatigue and confusion in FMS patients (Malin & Littlejohn, 2012a; Martínez et al., 2011), although other studies reported no such associations (e.g. Albertsen, Olafsson, Lund, & Ursin, 2002; Zautra et al., 2005).

Regarding E (higher activity, dynamism, positive emotionality, interest in the outside world, sociability, etc.), chronic pain patients scoring highly on this dimension have higher pain thresholds and tolerance compared with introverts (Eysenck, 1967). Therefore, E might represent a protective factor against pain (Ramírez & Valdivia, 2003) and may also affect selective attention toward it (Eysenck, 1967). Reduced levels of E have been reported in FMS patients (Ayats et al., 2006; Besteiro et al., 2008; Glazer et al., 2010; Kersh et al., 2001; Malin & Littlejohn, 2012b; Zautra et al., 2005). N and E are considered as the two most salient factors differentiating FMS and healthy control patient personality types (see Malin & Littlejohn, 2012b for a review).

Finally, regarding P (tough mindedness, impulsivity, aggressiveness, egocentrism, irresponsibility, emotional detachment or low empathy, anti-sociability, impersonality, and creativity; Eysenck & Eysenck, 1985), to the best of our knowledge, no studies have specifically assessed this dimension in the context of FMS, although some reports suggests higher levels of P in FMS patients relative to healthy controls (e.g. Banic et al., 2004).

The study of personality traits in FMS may currently be of heightened relevance due to newly proposed criteria for FMS diagnosis, based on the use of two self-report scales measuring widespread pain (Widespread Pain Index Scale) and symptom severity (Symptom Severity Scale) (Wolfe et al., 2010). Self-reported scales can be affected by a negative affectivity component that may artificially inflate the reportage of somatic symptoms (Watson & Pennebaker, 1989), such that individuals with high negative affectivity or N usually report greater levels of somatic symptoms (Lahey, 2009; Watson & Pennebaker, 1989).

In this study we evaluate differences in H. J. Eysenck's three personality dimensions between FMS patients and a healthy control group, and assess each dimension's association with (a) clinical (pain, fatigue, sleep), (b) emotional (anxiety and depression), (c) and functional (HRQL and impact of disease) variables, in addition to (d) pain-coping strategies. Finally, we also evaluate the association between personality, comorbid emotional disorders (depression and anxiety) and medication use. In accordance with the studies reviewed above we anticipate that: (1) FMS will exhibit higher levels of N and lower levels of E compared to healthy participants; (2) high N will be associated with more severe clinical symptoms, anxiety, and depression, a greater impact of illness on HRQL and the use of passive, non-adaptive coping strategies; and (3) high E will be associated with less clinical symptoms, lower anxiety and depression levels, higher scores on HRQL and a lower impact of illness, and the use of more active-adaptive coping strategies. We have no clear expectations regarding P, although given the observations of Banic et al. (2004), higher scores on this dimension may occur in FMS patients. Finally, the relative magnitude of associations between personality dimensions and measured outcomes in each group will be additionally compared. In analyzing the association between personality (especially N) and clinical outcomes in FMS, it is necessary to take into account the fact that the disability and clinical manifestations associated with a debilitating illness such as FMS may also negatively affect certain clinical outcomes, and probably surpass the modifying influence of personality characteristics. Given the relevance of the negative influence of the disability associated with FMS, we expected that associations (especially concerning N due to its expected negative influence) would be of lower magnitude in FMS patients than in healthy participants.

2. Method

2.1. Participants

Eighty-nine women and three men diagnosed with FMS, recruited via the Fibromyalgia Association of Jaén, participated in the study. All patients were examined by a rheumatologist and met the American College of Rheumatology criteria for FMS