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Alexithymia in fibromyalgia syndrome

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ABSTRACT

The study compared alexithymia in fibromyalgia syndrome (FMS) patients and healthy individuals, and analyzed its association with clinical, emotional, and functional variables. Forty-five FMS patients and 31 healthy individuals completed the Toronto Alexithymia Scale, which includes the dimensions: Difficulty Identifying Feelings (DIF), Difficulty Describing Feelings (DDF), and Externally-Oriented Thinking (EOT). Participants also completed instruments assessing Eysenck's personality dimensions, pain, fatigue, sleep, anxiety, depression, health-related quality of life (HRQL) and coping with pain. FMS patients exhibited higher scores in DIF and DDF than healthy individuals; group differences were markedly lower when depression and anxiety were statistically controlled. Patients furthermore displayed greater depression-anxiety, fatigue, sleep problems and neuroticism, lower HRQL and dysfunctional coping. Alexithymia was overall more closely related to clinical variables in healthy individuals than in patients; in patients, many associations disappeared when anxiety and depression were controlled. The data corroborate the high prevalence of alexithymia in FMS; however, they also suggest that alexithymia may play a less important role in symptom experience in patients vs. healthy individuals. This result may be discussed by considering the distinction between state and trait alexithymia; the weaker associations in patients may be ascribed to specific enhancement of state alexithymia due to illness-related affective distress.

1. Introduction

Fibromyalgia Syndrome (FMS) is a chronic condition characterized by persistent and widespread musculoskeletal pain, which affects 2–4% of the general population (Wolfe et al., 1990; Wolfe, Ross, Anderson, Russell, & Hebert, 1995) and approximately 15% of rheumatological samples gathered across different countries (Neumann & Buskila, 2003). Frequent comorbid conditions include fatigue, insomnia, mild cognitive impairment, depression and anxiety disorders (Reyes del Paso, Pulgar, Duschek, & Garrido, 2012; Van Middendorp et al., 2008; Wolfe et al., 2010).

Despite intensive research, the etiology and pathophysiology of FMS are still widely unknown; furthermore, the disease has no specific somatic signs, and is considered to be on the spectrum of medically unexplained syndromes (Jackson & Kroenke, 2008). Nevertheless, FMS most likely involves abnormal central nervous pain processing and the inhibition of anti-nociceptive inhibitory mechanisms (i.e. central pain sensitization), thereby resulting in diffuse hyperalgesia and allodynia (Loggia et al., 2014; Sumpton & Moulin, 2014). Hyperalgesia is expressed in increased sensitivity to experimental pain stimulation, e.g. reduced pain and tolerance thresholds and elevated pain ratings, as observed in paradigms including electrocutaneous, pressure, heat and cold stimulation (Arroyo & Cohen, 1993; Montoro, Duschek, Muñoz, & Reyes del Paso, 2016; Petzke, Clauw, Ambrose, Khine, & Gracely, 2003; Reyes del Paso, Garrido, Pulgar, & Duschek, 2011). On a central nervous level, a neuromatrix of nociception has been identified, including the somatosensory cortex, anterior cingulate, insula and thalamus, as well as prefrontal, supplementary motor and parietal areas (Apkarian, Bushnell, Treede, & Zubieta, 2005). Numerous studies, most of which used functional imaging, revealed evidence of increased neural activity in this matrix during the processing of acute pain, which confirms the notion of exaggerated central nervous nociceptive responding as a relevant pathogenetic mechanism in FMS (Burgmer et al., 2009; Duschek et al., 2012; Gracely & Ambrose, 2011; Montoro et al., 2016).

Psychological vulnerability to stress and negative affect have been proposed as relevant factors in CNS nociceptive sensitization (Duschek et al., 2012; Gracely, Petzke, Wolf, & Clauw, 2002; Montoya, Pauli, Batra, & Wiedemann, 2005). Interindividual differences in emotional and stress responses may also be relevant in the modulation of psychosocial adaptation and health outcomes in FMS (Crofford & Demitrack, 1996; Goldenberg, 1996), where vulnerability may partly result from the maladaptive ways in which FMS patients regulate their emotions and respond to aversive stimuli (Bartley, Rhudy, & Williams, 2009; Duschek, Werner, Limbert, Winkelmann, & Montoya, 2014). In this context, alexithymia is considered a relevant factor (Brosschot & Aarsse, 2001; van Middendorp et al., 2008).

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Alexithymia has been traditionally conceptualized as a personality trait involving a lack of emotional awareness, difficulties in identifying and communicating feelings and an externally oriented cognitive thinking style (Bagby, Parker, & Taylor, 1994; Sifneos, 1973). However, it has been pointed out that alexithymia can also manifest as a transient state that varies in severity in accordance with stress levels and the presence of psychopathological conditions, including depression and anxiety disorders (Honkalampi, Hintikka, Saarinen, Lehtonen, & Viinamäki, 2000; Pollatos et al., 2011; Sifneos, 1988). The most frequently used self-report measure of alexithymia is the 20-item Toronto Alexithymia Scale (TAS-20) (Bagby, Parker, et al., 1994; Bagby, Taylor, & Parker, 1994). This questionnaire comprises three subscales pertaining to dimensions of alexithymia: Difficulty Identifying Feelings, Difficulty Describing Feelings, and Externally-Oriented Thinking. The fact that this instrument has been used extensively, together with its good psychometric properties, supports its utility (Parker, Bagby, Taylor, Endler, & Schmitz, 1993).

Alexithymia has been proposed as a mediating factor in the relationship between maladaptive coping and pain chronification. It has also been associated with clinical pain and other factors related to FMS, such as general distress, depression, anxiety, somatosensory amplification, neuroticism and psychoticism (Deary, Scott, & Wilson, 1997; Hosoi et al., 2010; Luminet, Bagby, Wagner, Taylor, & Parker, 1999; Pollatos et al., 2011; Sandin, Chorot, Santed, & Jiménez, 1996; Wise & Mann, 1994). A negative impact of alexithymia on vitality (Hosoi et al., 2010) and extraversion (Luminet et al., 1999; Parker, Taylor, & Bagby, 1989) has also been postulated. A large body of research documents increased alexithymia in FMS (e.g. Castelli et al., 2012; Huber, Suman, Biasi, & Carli, 2009; Steinweg, Dallas, & Rea, 2011), suggesting that affected patients are more likely than healthy individuals to exhibit deficits in emotional awareness, and difficulties distinguishing emotions from physical sensations and verbally expressing their feelings. Concerning the specific components of alexithymia affected by FMS, recent research points towards a particular enhancement of the Difficulty Identifying Feelings and Difficulty Describing Feelings dimensions (Huber et al., 2009; Martínez et al., 2015).

However, the precise role of alexithymia in FMS pathology is still poorly understood (Huber et al., 2009; Taylor, 2000). It has been proposed that alexithymia interferes with the successful self-regulation of negative emotions, where the resulting sustained aversive affective state may contribute to the onset and exacerbation of psychic and somatic symptoms (Huber et al., 2009). High alexithymic individuals may furthermore tend to misinterpret emotional arousal as symptoms of physical illness, which, by extension, may reinforce maladaptive illness-related behaviors and pain chronification (Lumley, Stettner, & Wehmer, 1996; Pilowsky & Katsikitis, 1994). The first studies on the association between alexithymia and specific features of FMS and related symptoms revealed correlations with affective pain experience, depression, anxiety, neuroticism and health-related quality of life (HRQL; Castelli et al., 2012; Malt, Olafsson, Lund, & Ursin, 2002; Tuzer et al., 2011). While the Difficulty Describing Feelings factor appears related to insomnia, anxiety, depression, fear of pain, pain catastrophizing and vigilance to pain (Martínez et al., 2015; Tuzer et al., 2011), the Difficulty Identifying Feelings factor exhibited associations with increased affective pain and experimental pain sensitivity (Huber et al., 2009). However, it should be noted that equivocal results have also been reported that in particular challenge the notion that alexithymia is involved in FMS pain (Castelli et al., 2012; Evren, Evren, & Guler, 2006; Sayar, Gulec, & Topbas, 2004).

Building on these observations, the present study aimed to further evaluate alexithymia in patients with FMS, in comparison with a healthy group, and to explore its role in the following, associated clinical features and personality characteristics: (a) clinical symptoms (pain, fatigue, sleep), (b) emotional alterations (anxiety and depression), (c) functional variables (HRQL and functional restrictions) (d) strategies to cope with pain, and (e) H.J. Eysenck's personality dimensions (neuroticism, psychoticism, extraversion). The main hypotheses were as follows: (1) FMS patients will exhibit more pronounced alexithymia than healthy individuals, specifically in the Difficulty Identifying Feelings and Difficulty Describing Feelings dimensions; and (2) greater levels of alexithymia will be associated with higher levels of clinical pain, anxiety and depression, lower HRQL, more frequent use of maladaptive pain coping strategies, and higher levels of neuroticism and lower levels of extraversion.

The analysis of the connection between alexithymia features and the remaining variables was conducted separately in FMS patients and healthy individuals. This procedure allowed estimation of the degree to which the impact of alexithymia on the processing of emotional information, experience of physical symptoms and use of coping strategies differs between groups, and whether FMS is characterized by a specific pattern of associations. Finally, given the connection between alexithymia and negative affective states (Hoffart, 1994; Lumley, 2000; Marchesi, Ossola, Tonna, & de Panfilis, 2014), and the high prevalence of mood disturbances in FMS patients, depression and anxiety were statistically controlled during the comparison between patients and healthy participants with respect to alexithymia indices. In this way, the possible impact of these variables on the extent of the expected group differences could be estimated. The relevance of anxiety and depression in the association between alexithymia and clinical features and personality characteristics was furthermore considered by partialing out these parameters in the correlation analysis. The possible effects of medication use and comorbid psychiatric disorders on alexithymia were also assessed.

2. Methods

2.1. Participants

Fifty-five women with FMS, recruited via the Fibromyalgia Association of Jaén, participated in the study. All patients had been examined by a rheumatologist and met the American College of Rheumatology criteria for FMS (Wolfe et al., 1990). The exclusionary criteria were as follows: cardiovascular diseases of any kind, metabolic abnormalities, inflammatory causes of pain, neurological disorders, and severe somatic (e.g., cancer) or psychiatric (e.g. psychotic or bipolar) diseases. The healthy group included 34 healthy women recruited from women's associations in Jaén. The patients and healthy groups did not differ with respect to age, body mass index and educational level (all $p > 0.05$, c.f. Table 1). In addition to having no type of pain disorder, the healthy group was subject to the same exclusionary criteria as were the patients. Table 1 displays the demographic and clinical characteristics of both study groups.

2.2. Psychological measures

In addition to a semi-structured interview that assessed clinical history and demographic data, participants were evaluated with the Structured Clinical Interview for Axis I Disorders of the Diagnostic and Statistical Manual for Mental Disorders (SCID, First, Spitzer, Gibbon, & Williams, 1999) in order to diagnose possible mental disorders. The self-reported questionnaires used are described below:

Toronto Alexithymia Scale (TAS-20) (Bagby, Parker, et al., 1994; Spanish adaptation by Martínez-Sánchez, 1996). This instrument measures alexithymia using the following three subscales and 5-point Likert scales ranging from 1 (*strongly disagree*) to 5 (*strongly agree*): Difficulty Identifying Feelings, i.e. the inability to distinguish between specific emotions or between emotions and bodily sensations; Difficulty Describing Feelings, i.e. the inability to verbalize one's emotions; Externally-Oriented Thinking, i.e. an individual's tendency to focus attention externally rather than on their inner emotional experience. In addition, scores on each subscale are