

Personality profiles and coping styles in migraine patients with fibromyalgia comorbidity

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Abstract

Fibromyalgia syndrome (FM) is frequently associated with migraine. In this study we aimed to compare personality profiles and coping styles across 23 migraine without aura patients sharing FM comorbidity (MWA-FM), 28 migraine without aura patients without FM symptoms (MWA) and 51 age- and sex-matched controls, by means of Big Five Questionnaire (BFQ) and Coping Orientation to Problem Experienced (COPE), and to correlate main results with clinical features. The “Energy” personality factor was significantly reduced in patients presenting with FM symptoms, compared to both migraine without aura patients and controls. A low score in “Dynamism” sub-item with a high score in denial coping style was able to distinguish MWA from MW-FM groups with an accuracy of 82.35% (Wilks lambda = 0.98; chi-square = 8.99, DF = 1, $p = 0.005$). In particular, lower “Dynamism” scores corresponded to a major expression of allodynia, fatigue, anxiety, depression, headache frequency and poor quality of sleep and life.

Avoidance from active coping with stressful events may facilitate worsening of migraine and fibromyalgia comorbidity.

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1. Introduction

Migraine, an incapacitating disorder of neurovascular origin, consists of episodes of headache, accompanied by autonomic and possibly neurological symptoms [1]. Fibromyalgia (FM) is a common musculoskeletal pain syndrome characterized by widespread pain for more than 3 months, abnormal tenderness in at least 11 tender point sites of 18, fatigue, stiffness, sleep disturbance, depression, anxiety, and cognitive impairment [2,3]. The new diagnostic criteria outlined the severity and the potential impairment deriving from fatigue, waking unrefreshed, cognitive and somatic symptoms accompanying musculoskeletal pain [3]. Fibromyalgia comorbidity is frequently present in migraine patients [4]. In particular, migraine patients sharing FM comorbidity exhibit more frequent headache

and signs of central sensitisation as pericranial muscle tenderness, anxiety, and sleep inadequacy [5,6]. These migraine patients may represent a sub-group deserving attention for therapeutic approach [4]. Studies dealing with the personality structure of patients with primary headache disorders, described mild anxiety and depression [7,8] and neuroticism [9,10]. In fibromyalgia patients, neuroticism, openness and agreeableness were associated with pain anxiety [11], as well as pain severity, sleep disturbance, fatigue and confusion [12].

Fibromyalgia comorbidity seems to characterize more severe migraine [5,6]. In this view, further attention would be addressed to personality traits predisposing migraine patients to this invalidating syndrome and its associated symptoms [3]. The five-factor personality model is the most reproducible method of trait assessment [13,14]. The aims of the study were as follows: (a) to compare the personality factors and coping strategies across migraine patients sharing or not FM comorbidity and controls and (b) to correlate personality traits and coping strategies with main clinical features.

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2. Methods

2.1. Subjects

Patients were recruited at the Headache Ambulatory of the Neurophysiopathology of Pain Unit of Bari University.

We included 51 patients with a diagnosis of migraine without aura, according to the most recent diagnostic criteria [1]. Twenty-three presented with FM comorbidity and higher headache frequency (Table 1). The exclusion criteria and clinical management of patients were the same as the previous studies [5,6]. Briefly, patients with general medical, neurological or psychiatric diseases [15] were excluded from the study, as well as subjects on central nervous system-active drug therapy or preventive treatment for migraine, to rule out any effect on personality traits and clinical features. All patients underwent the clinical assessment, defined in the previous study [5,6], consisting of evaluation for FM diagnosis [2,3], frequency of headache (the average number of days with headache over a month, computed in the last 3 months), total tenderness score (TTS) [16] allodynia questionnaire [17], Short-Form 36 (SF-36) Health Survey [18], depression [self-rating depression scale (SDS)] and anxiety [self-rating anxiety scale (SAS)] scales [19,20], Multidimensional Assessment of Fatigue (MAF) [21], and Medical Outcomes Study (MOS) [22]. In this study, we considered the sleep problems index (SLP9), expressing the sleep problems index, and sleep quantity (SLPQ), expressing the sleep quantity [22]. Migraine Disability Assessment scale (MIDAS) in the Italian version [23], was used to quantify headache-related disability in all headache patients. In addition, FM patients underwent the tender point survey to measure pain level at any tender point [24] and the fibromyalgia-linked invalidity questionnaire [25]. Personality traits and coping style were also assessed in healthy controls, on the basis of the above-reported exclusion criteria, and the exclusion of primary headache and fibromyalgia diagnosis, and first-degree inheritance for both conditions (Table 1).

The local ethics committee of Bari Policlinico General Hospital approved the study and all patients and controls gave their informed consent.

Table 1
Demographic and clinical data in patients and controls.

	MWA	MWA-FM	Controls	
Sex				
Male	9	3	11	Chi-square: n.s.
Female	19	20	30	
Age				
Mean	40.3	45.3	40.3	ANOVA: n.s.
SD	14	9.18	15.53	
Education time (years)				
Mean	9.8	9.7	10.8	ANOVA: n.s.
SD	3.3	3.5	5.5	

MWA, migraine without aura; FM-MWA, migraine without aura with fibromyalgia comorbidity.

2.2. Instruments

The following instruments were applied to patients and healthy controls.

- (1) *Big Five Questionnaire* (BFQ) [26]. The BFQ was designed to assess the constellation of traits defined by the Five-Factor Theory of Personality. It is one of the most widely used instruments to represent different systems of personality in a single framework [27]. It consists of a validated 132-item personality scale, scored as 1 (disagree strongly) through 5 (agree strongly) to indicate the extent of agreement with the items. The 132 items comprise five scales to offer an integrative overview of personality based on five dimensions. Each dimension is measured by means of six subscales, encompassing variety of specific traits: *Extraversion* (*E*) (subscales: Dynamism/Dominance) which refers to the tendency to be outgoing, chatty, assertive, active, adventurous, daring, energetic and sensation-seeker, as opposed to withdrawn, shy, quiet, reserved, and reticent; *Agreeableness* (*A*) (subscales: Cooperativeness/Politeness) which relates to the tendency to be friendly, amiable, modest, courteous, at ease with others, flexible, forgiving, considerate, tolerant, kind, trustworthy and cooperative, as well as the more humane aspects of personality, such as altruism and concern for others; *Openness* (*O*) (subscales: Openness to Culture/Openness to Experience), including the tendency to be intellectually curious, have a vivid imagination, to be open to new ideas and experiences, and be sensitive, inquisitive, and inventive; *Conscientiousness* (*C*) (subscales: Scrupulousness/Perseverance) consisting of the tendency to be careful, thorough, responsible, efficient, organized, achievement-oriented, and moral; and *Neuroticism* (*N*) (subscales: Emotion control/Impulse control) which relates to the tendency to be anxious, depressed, tense, nervous, fearful, angry, and insecure, as opposed to emotionally stable [28].
- (2) *Coping Orientation to Problem Experienced* (COPE) [29]. The COPE is a 60-self-reported item measuring 15 coping styles distinct in three broad types: problem-focused coping, emotion-focused coping and dysfunctional coping. Problem-focused coping includes active coping (C5), planning (C15), restraint (C10), seeking social support for instrumental reasons (C4) and suppression of competing activities (C14). Emotion-focused coping covers the following: positive reinterpretation and growth (C1), religion (C7), humor (C8), acceptance (C13) and seeking social support for emotional reasons (C11). Dysfunctional coping includes focus on and venting of emotions

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