

Personality, Cognitive Appraisal and Adjustment in Chronic Pain Patients

Ana M^a Herrero, Carmen Ramírez-Maestre, and Vanessa González
Universidad de Málaga (Spain)

This study investigated the relationship between clinical personality patterns and cognitive appraisal as well as their repercussions on adjustment to chronic pain in a sample of 91 patients. It was predicted that clinical personality patterns would be related to adjustment and cognitive appraisal processes, whereas cognitive appraisals would be related to anxiety, depression and levels of perceived pain. The instruments used were as follows: the Millon Clinical Multiaxial Inventory, the Cognitive Appraisal Questionnaire, the Hospital Anxiety and Depression Scale, and the McGill Pain Questionnaire. Multiple regression analyses, the Kruskal-Wallis test, and the Mann Whitney U-test were used to analyse the data obtained. The results show that certain clinical personality patterns were associated with poor adjustment to chronic pain. The use of cognitive appraisal of harm predicted higher anxiety levels and greater perceived pain in chronic pain patients. The use of cognitive appraisals of challenge predicted lower depression levels.

Keywords: chronic pain, Millon Inventory, cognitive appraisal, anxiety, depression

Este estudio investigó la relación entre los patrones clínicos de personalidad y la evaluación cognitiva y sus repercusiones sobre la adaptación al dolor crónico en una muestra de 91 pacientes. Se predijo que los patrones de personalidad se relacionarían con los procesos de ajuste y de evaluación cognitiva, mientras que las evaluaciones cognitivas se relacionarían con la ansiedad, la depresión y los niveles de dolor percibido. Se emplearon los siguientes instrumentos: el Inventario Clínico Multiaxial de Millon, el Cuestionario de Evaluación Cognitiva, las Escalas de Ansiedad y Depresión Hospitalarias y el Cuestionario de Dolor de McGill. Se emplearon el análisis de regresión múltiple y los tests de Kruskal-Wallis y de Mann Whitney para analizar los datos obtenidos. Los resultados muestran que ciertos patrones clínicos de personalidad se asociaban con baja adaptación al dolor crónico. El uso de la evaluación cognitiva del daño predijo niveles más altos de ansiedad y mayor dolor percibido en los pacientes de dolor crónico. El uso de la evaluación cognitiva de retos predijo niveles más bajo de depresión.

Palabras clave: dolor crónico, Inventario Millon, evaluación cognitiva, ansiedad, depresión

Correspondence concerning this article should be addressed to Carmen Ramírez-Maestre, Departamento de Personalidad, Evaluación y Tratamiento Psicológico, Facultad de Psicología, Universidad de Málaga, Campus de Teatinos, 29071 Málaga (Spain). Phone: +34 952-132430. Fax: +34 952-131101. Email: cramirez@uma.es

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Pain is currently considered to be a multidimensional phenomenon. Besides being a sensation in a part of the body, pain is also perceived as an unpleasant subjective experience. Therefore, it has an emotional component deriving from a wide range of biological, psychological, and social factors (IASP, 1986). Thus, some psychological factors are central to the pain experience and the way the patient behaves during treatment (Garofalo, 2000). Psychological research has mainly focused on chronic pain. Chronic pain begins as acute pain but persists for 6 months or more despite treatment (Cruzado, Labrador, De la Puente, & Vallejo, 1990).

Transactional models of stress (Lazarus & Folkman, 1984b) suggest that chronic pain may be categorized as a long-lasting stressful situation which patients cannot cope with due to a lack of resources. The cognitive appraisal patients make about pain is conceived of as a process by which the person evaluates the effect a particular encounter with the environment (i.e. the pain) has on his or her well-being. There are three kinds of cognitive appraisals: cognitive appraisal of harm or loss, of threat, and of challenge. The type of appraisal influences the coping strategies used and the patients' adjustment to the stressful situation. Several researchers have stated that cognitive appraisal has a strong relationship with the coping strategies chronic pain patients use (Barrowclough, & Parle, 1997; Compas, Worsham, Sydney, & Howell, 1996; Chang, 1998; Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986; Lazarus, 1966; Lazarus & Folkman, 1984a, 1984b; McCrae, 1984; Mukulincer & Florian, 1995). Based on this view, different patients make different appraisals of the same stressful situation and thus their coping strategies are also different (Lazarus & Folkman, 1984b). The patients making appraisals of loss or harm normally use more passive coping strategies, and focus on their emotions more than patients who make challenge appraisals. The latter use more active or problem-oriented coping strategies (Carver & Scheier, 1994; Folkman & Lazarus, 1980; Holmes & Houston, 1974; McCrae, 1984; Ptacek, Smith, & Dodge, 1994; Stone & Neale, 1984; reviewed by Ramírez-Maestre, Valdivia, Anarte, & Masedo, 2000).

Whereas some chronic pain patients present high levels of dysfunction in different key areas of their life, others are positively and actively adapted to the pain experience (Doleys, Crocket, & Patton, 1982). Thus, authors such as Chang (1998), Folkman et al., (1986), Oliver and Brough (2002), Turk and Okifuji (1995) and Turk and Rudy (1986) suggest that some types of appraisal negatively affect the intensity of perceived pain, and might lead to affective disorders and poorer adjustment. In this sense, researchers investigating the relationship between cognitive appraisal processes and their effect have reported that patients who make cognitive appraisals of harm and use passive or emotion-focused coping strategies experience more depression and anxiety (Gittes, 1996; Miller, 1998; Skinner

& Brewer, 2002; Turk & Okifuji, 1995). Other researchers (Folkman et al., 1986; Kimble, 1998) have also found a significant and negative relationship between loss or harm cognitive appraisals and psychological well-being. Soriano and Monsalve (1999) studied chronic pain and reported that patients who made threat and loss or harm cognitive appraisals perceived more pain, lacked resources to cope with it, and their daily functioning was limited and were less effective. On the other hand, patients who made a challenge cognitive appraisal had better adjustment capacity because this type of appraisal predicts the use of active or problem-focused coping strategies.

This study discusses the influence of antecedent variables on the differences found in the cognitive appraisal process and their consequences for chronic pain patients. The role of the patient's personality as a predictive variable in the coping process and its effect on the patient's adjustment to this stressful situation is investigated.

Although Lazarus and Folkman (1984b) did not consider the role of personality to be a predictive variable in their stress model, several other authors have defended the role of personality as an antecedent variable influencing how people adjust to stressful situations (Kobasa, 1979; Ramírez-Maestre, López, & Esteve, 2004). This relationship is explained by the type of coping strategy employed (McCrae & Costa, 1986). The Hewitt and Flett model (1996) is based on this perspective. They argue that personality is a determinant in the coping strategies people use in stressful situations and that these strategies are responsible for good or poor adjustment.

Most research has analysed the influence of the dimensions of Neuroticism, Extraversion and Dispositional Optimism as antecedent variables in this process. The results of several studies on chronic pain support this relationship. Some studies show a relationship between the neuroticism dimension and poor adjustment (Asghari, 1997; BenDebba, Torgerson, & Long, 1997; Costa & McCrae, 1990; Endler & Parker, 1990; McCrae & Costa, 1986; Ramírez-Maestre, López, & Esteve, 2004; Wade, Dougherty, Hart, & Cook, 1992). Other works have reported a relationship between the extraversion dimension and lower intensity of perceived pain and less subjective discomfort (McCrae & Costa, 1986; Morasso, Costantini, Baracco, Borreani, & Capelli, 1996; Sánchez Cánovas & Sánchez López, 1994). Finally, dispositional optimism has been associated with good results in adjustment to stressful situations (Scheier & Carver, 1985, 1992).

Several studies have examined the relationship between personality and cognitive appraisal. Pattnoff (1995) found that personality and depressive symptoms are related through cognitive appraisal. Chang (1998) reported a relationship between dispositional optimism and the cognitive appraisal process. Smith (1984) concluded that optimism and self-confidence are related to appraisal of challenge. A study carried out by Miller (1998) demonstrated a significant

negative relationship between dispositional optimism and depression and anxiety levels. The author indicated that it is also possible that loss or harm cognitive appraisals mediate this relationship. Folkman et al., (1986) suggest that personality characteristics plus goals, commitment and beliefs can predict whether the subject will appraise the event as relevant to his/her well-being or not. In a study carried out by Smith and Ellsworth (1985), a significant correlation was found between internal variables (self-responsibility and personal control) and cognitive appraisal of harm.

The influence of several healthy personality dimensions in the process of coping with chronic pain has been frequently studied by researchers. However, very few authors have studied the role of pathological disorders, i.e. a clinical personality, in chronic pain patients. Several studies (Jay, Grove, & Grove, 1987; Dersh, Polatin, & Gatchel, 2002; Dersh, 2000) have found signs of personality pathology in this population. There is a strong association between chronic pain and depression, anxiety, somatoform disorder, personality disorders and substance abuse. Gatchel (2000) and Weisberg (2000) also found a high prevalence of personality disorders in chronic pain patients. Bockian, Meager, and Millon (2000) found a prevalence of around 40-60% in such patients using the Millon Clinical Multiaxial Inventory (MCMI). However, other researchers have found that personality disorders do not predict patients' adjustment level (Ericsson, Paston, Linder, Taylor, Haddock, & Foreyt, 2002; Linder, Poston, Haddock, Foreyt, & Ericsson, 2000).

According to Millon (1981), certain personality styles are more adaptative than others, and patients with a healthier personality style have a better response to treatment than patients with personality disorders. According to this theory, these styles are distributed along a continuum, whose extremes are 'normality' and 'pathology'. Personality styles can be understood as the ideas people have about themselves and the world as a whole, together with particular ways of feeling, thinking and behaving (Choca, 1992). The personality model proposed by Millon (1994) presents personality disorders as the result of poor adjustment. The clinical personality styles derived from this theory are: Schizoid, Avoidant, Dependent, Histrionic, Narcissistic, Antisocial, Sadistic, Compulsive, Negativistic, and Passive-aggressive.

Millon also established some diagnostic scales for severe personality pathologies to represent severe structural disorders (*pathological personalities*). The criteria established by these scales are as follows: deficits in social competence and frequency of psychotic episodes. These are people highly vulnerable to stress in daily life, their personality is less integrated and their coping strategies are less effective than the ten clinical basic patterns of personality described before. The pathological personalities are classified as follows: Schizotypal personality, Borderline personality and Paranoid personality.

The clinical syndromes proposed by Millon are understood as a distortion of the basic patterns of personality. They are transitory and are a function of the impact a given stressful situation has on the subject. Millon establishes some categories for clinical symptoms of medium severity which are related to the following scales: Anxiety, Somatoform, Manic, Disthymia, Alcohol Dependence and Drug Dependence. Millon also establishes categories of severe clinical symptoms related to thought disorder, major depression and delusional disorders.

In the literature, the MCMI (Millon, 1997) has been used to evaluate personality disorders and the influence they have on the success or failure of pain treatment (Elliot, Jackson, Layfield, & Kendall, 1996).

Present Study

The present study is set within the theoretical context of chronic pain. The objectives were to identify the role played by Millon's clinical personality patterns as variables in explaining the differences in cognitive appraisals made by chronic pain patients and their adjustment. We analyse the relationship between the presence of a clinical personality pattern and adjustment to chronic pain. Should a significant relationship be found, this would provide relevant information for the clinical treatment of chronic pain. Understanding the influence of these patterns on adjustment is essential from the standpoint of prevention as it would allow us to detect patients in need of psychological treatment. Moreover, multidisciplinary treatment would help to ameliorate the illness as well as improve the quality of life. A further objective of this study was to determine the frequency of clinical personality patterns in this clinical context and which are the most significant.

The two main hypotheses of the present paper are described below.

1. *Clinical patterns of personality, cognitive appraisal, and adjustment.* Based on the empirical literature concerning these variables (Chang, 1998; Folkman et al., 1986; Kobasa, 1979; Miller, 1998; Pattnoff, 1995; Smith & Ellsworth, 1985), we hypothesize that there will be differences between the patients' cognitive appraisal and adjustment as a function of clinical personality patterns. Thus, some clinical personality patterns will be related to harm or threat cognitive appraisals and to poor adjustment (higher levels of pain intensity, anxiety and depression).

2. *Cognitive appraisal, adjustment and perceived pain.* Several studies associate the use of coping strategies with how subjects adjust to pain (Asghari, 1997; BenDebba et al., 1997; Costa & McCrae, 1990; Endler & Parker, 1990; McCrae & Costa, 1986; Morasso et al., 1996; Sánchez Cánovas & Sánchez López, 1994; Wade et al., 1992). Some studies also examine the determinant role of cognitive appraisal in the coping process, and thus, in the subjects'

adjustment to a stressful situation (Hewitt & Flett, 1996; McCrae & Costa, 1986). If such a relationship is found, the present study would be one of the few to relate cognitive appraisal processes to people's adjustment to pain. It has been shown that there is a relationship between making a cognitive appraisal of harm or threat and psychological discomfort, negative emotions and high depression and anxiety levels (Folkman et al., 1986; Gittes, 1996; Kimble, 1998; Miller, 1998; Pattnoff, 1995; Skinner & Brewer, 2002; Soriano & Monsalve, 1999; Turk & Okifuji, 1995). This is more accentuated in the context of chronic pain, where we find a high level of perceived pain, affective disorders and poor psychological adjustment in patients who appraise their pain situation as harmful or threatening (Chang, 1998; Oliver & Brough, 2002; Turk & Okifuji, 1995; Turk & Rudy, 1986). Therefore, we hypothesize that patients whose cognitive appraisal is of harm or loss will not adapt as well as patients who make appraisals of challenge. The adjustment of patients to this situation is indicated by better mood and less intensity of perceived pain.

Method

Participants

The sample was made up of 91 chronic pain patients who attended the Clinical Pain Unit at the Carlos Haya Hospital in Málaga (Spain). Individuals were considered eligible for the study if they had pain for at least 6 months, and were not being treated for a terminal illness. All patients who attended the Clinical Pain unit and presented these characteristics were asked to participate in the study; there were no refusals. Table 1 presents the descriptive data of the sample. The mean age was 55 years and the sample was predominantly female (62%). Of the total sample, 69.2% of the patients were married and 33% had children. 31.9% of the sample had attended primary school and 34.1% were retired. The mean time of suffering from pain was 13 years, ranging from 7 months to 52 years. The patients had been admitted to the Pain Management Unit of the hospital after being referred by their doctor. The diagnoses were varied, the most frequent being musculoskeletal pain (45%) and oncological pain (15%).

Table 1
Descriptive Characteristics of the Sample (N = 91)

Variable		Percentage / SD
Age	$M = 54.87$	$SD = 12.55$
Sex	Male	37.4%
	Female	62.6%
Marital Status	Single	6.6%
	Married	69.2%
	Divorced	9.9%
	Widow	14.3%
Number of children	0-3children	75.9%
	4-7	24.2%
Educational level	None	24.2%
	Reading and Writing	14.3%
	Primary	31.9%
	Secondary	16.5%
	University	13.2%
Work Status	Unemployed	30.8%
	Retired	34.4%
	Sick leave	29.7%
Pain Time	$M = 11.23$	$SD = 10.67$
Type of pain	Bone	42%
	Oncology	15%
	Fibromyalgia	14%
	Hernia	9.9%
	Fibrosis	7.7%
	Low back pain	4%
	Neuralgia	2.2%
	Others	12%

Instruments

Besides providing information on social and demographic variables, the subjects responded to a variety of assessment instruments.

The Millon Clinical Multiaxial Inventory (MCMI-II) (Millon, 1997), adapted to Spanish by Avila et al. (1998) was used to assess personality. This is frequently used to make clinical decisions and identify subjects with psychological disorders. Its main use is to interpret profiles by deriving the most important aspects from 22 scales. The MCMI has been used in several studies to describe the psychological characteristics of a sample. In general terms, the MCMI was designed to measure personality and psychological disorders (Choca, 1992). Its 175-item, true-or-false answer format measures the following scales: 10 basic clinical personality scales (Schizoid, Avoidant, Dependent, Histrionic, Narcissistic, Antisocial, Aggressive/Sadistic, Compulsive, Self-defeating and Passive-aggressive), 3 for severe personality pathology (Schizotypal, Borderline and Paranoid), 6 clinical syndromes (Anxiety, Somatoform, Manic, Disthymia, Alcohol dependence and Drug dependence) and 3 severe clinical syndromes (Thought disorder, Major depression and Delusional disorders). It is easy to apply and is interpreted automatically. The user can obtain the scales in situ when interviewing patients referred by mental health services, at general hospitals or in private clinics for reports. The Base Rate is 75 or higher. The Spanish version of the scale shows appropriate reliability and validity (Avila et al., 1998). The results obtained with the Kuder-Richardson (KR) formula show that the median of the coefficient for all clinic scales is .90 (range: .81 to .95). In addition, the reliability index for the scale was robust for the present study. The median of the coefficient for all clinic scales was .75 (range: .63 to .82).

The Cognitive Appraisal Inventory for chronic pain patients (CAI; Anarte et al., 1999; Ramírez-Maestre et al., 2005) was used to assess cognitive appraisal. This scale has 31 items divided into three subscales. The scales were designed to assess the type of appraisal that patients make about the situation of suffering chronic pain:

1. *Harm or loss appraisal*: This subscale assesses whether patients think that they have lost something important in their lives or have experienced some kind of injury because of their pain (e.g., *Do you think or feel that since you have had chronic pain you go out less than before?*). Reliability under Cronbach's alpha was 0.80. (Present sample, $\alpha = .70$).
2. *Threat appraisal*: This assesses whether patients think that they will lose something important in their lives or will experience some kind of injury in the future because of their pain (e.g., *Do you think or feel that if pain goes on you will have to stop doing things that you like?*). The internal consistency for the scores was .85 (Present study, $\alpha = .72$).

3. *Challenge appraisal*: This subscale assesses patients' thoughts about potential for growth, mastery, or gain despite the pain (e.g., *Despite having chronic pain, will you be able to take care of your family?*). The internal consistency for the scores was .85 (Present study, $\alpha = .74$).

Thus, the CAI (see Appendix) assesses the three types of cognitive appraisals of pain as Lazarus and Folkman proposed in their model (1984a, 1984b). Another important and original characteristic of this instrument is that it was designed only for chronic pain patients. The first study was conducted with a sample of 135 heterogeneous chronic pain patients (Anarte et al., 1999). The internal structure of the inventory was replicated in a second study with a sample of 224 chronic pain patients with the same characteristics as those in the first one (Ramírez-Maestre et al., 2005).

The Hospital Anxiety and Depression Scale (HADS) was used to assess anxiety and depression. This was created by Zigmond and Snaith in 1983 (adapted to Spanish by Tejero, Guimerá and Farré, 1996) who designed a scale that substitutes the physical pain symptoms for others more specific to psychological disorders. The goal was to design an instrument that evaluates depression and anxiety states in non-psychiatric patients in hospital. It is a self-applied 14-item questionnaire with two subscales: anxiety and depression. The items of the anxiety subscale are taken from the revised Hamilton Anxiety Scale, and do not include physical symptoms that the patient can confuse with his/her physical illness. The HADS provides a measurement of 'psychological discomfort' as a dimension, and correlates well with the severity of the physical illness and other quality of life measurements. It can be used to detect changes during the illness or during the treatment process. The Spanish version of the scale has appropriate reliability and validity. The internal consistency of both scales is high ($\alpha = .86$ for anxiety; $\alpha = .86$ for depression) (Tejero, Guimera, & Farré, 1996; Quintana et al., 2003). The reliability of both subscales for the present sample was $\alpha = .76$ for anxiety; $\alpha = .86$ for depression.

The McGill Pain Questionnaire (Melzack, 1975) was used to measure pain intensity. We employed a Spanish adaptation (Lázaro et al. 1994). This instrument consists of a list of 67 adjectives or descriptors classified into 19 subcategories. This scale yields an overall score of perceived pain which was used in this research. The internal consistency for the total score in this Spanish version is $\alpha = .74$ (present study, $\alpha = .67$).

Procedures

All patients were receiving treatment in the Pain Management Unit at the 'Hospital Civil' in Málaga, Spain. The purpose of the study was explained to the patients who gave their informed consent to participate in the study. They were interviewed in the department ward. Each interview lasted approximately 40 minutes.

Results

Frequency of Clinical Personality Patterns

The frequency of clinical personality patterns in this sample were analyzed and which were the most significant. Of the total sample, 95.6% of the patients scored in one or more basic clinical personality scales. Nevertheless, none of them presented severe personality pathology, clinical syndromes, or severe clinical syndromes. These results enable grouping the patients into four personality profiles: *Profile 1*: A schizoid, compulsive and dependent profile (patients who had high scores in three basic clinical personality scales: schizoid, compulsive and dependent); *Profile 2*: An antisocial and compulsive profile (patients who had high scores in three basic clinical personality scales: compulsive, narcissistic, and aggressive/sadistic); *Profile 3*: A compulsive profile (patients who had high scores in basic clinically compulsive personality scale); and *Profile 4*: A psychosocial maladjustment profile (patients who had high scores in two basic clinical personality scales: narcissistic, and aggressive/sadistic). Table 2 shows the percentages of patients included in each profile. It also shows the number of patients who do not score in any MCMI-II scales ($N = 4$), the ones scoring in all MCMI-II scales ($N = 2$), and the patient who had a high score in the basic clinically histrionic personality scale.

Because of the low number of patients included in the remaining categories, only Profiles 1 ($N = 42$), 2 ($N = 22$), and 3 ($N = 17$) were taken into account in the following analysis. It is worthwhile noting that 89% of the patients

had high scores in basic clinically compulsive personality scale. However, different profiles are composed of a unique combination of several personality characteristics. Thus, patients included in Profile 1 (compulsive, schizoid, and dependent), and those in Profile 2 (compulsive, narcissistic, and aggressive/sadistic) show different behaviours. As the data regarding personality profiles did not have a normal distribution, two nonparametric analyses were applied: Kruskal-Wallis and Mann-Whitney's U .

The components of the profiles were further analysed by sex frequency (Table 2); more variables were taken into account by applying Kruskal-Wallis analysis to investigate differences between profiles regarding the period during which pain was suffered. Table 3 shows the results of this analysis.

It can be seen that there are no differences between profiles in this variable.

Clinical Personality Patterns, Cognitive Appraisal, Perceived Pain, and Mood

In order to consider the relationship between personality profiles, cognitive appraisal and patient adjustment, the patients' CAI, McGill, and HADS scores were compared according to the presence of one of the three profiles by means of Kruskal-Wallis analysis. Table 4 shows the results of this analysis.

As can be seen, there are no differences between profiles in the type of cognitive appraisal used, and in the intensity of perceived pain. The only differences appear in levels of anxiety and depression. Thus, there are significant differences between the mean ranges of anxiety and depression. It is

Table 2
Personality Profiles: Number of Patients and Percentages

Personality Profiles	Total <i>N</i> / %	Sex	
		Male <i>N</i> / %	Female <i>N</i> / %
Profile 1: Schizoid, compulsive and dependent	42 / 46.2%	16 / 38%	26 / 62%
Profile 2: Antisocial and compulsive	22 / 24.2%	10 / 45.5%	12 / 54.5%
Profile 3: Compulsive	17 / 18.7%	4 / 23.5%	13 / 76.5%
Profile 4: Antisocial	3 / 3.3%	0	3
No scores in any MCMI-II scales	4 / 4.4%	3	1
Scores in all MCMI-II scales	2 / 2.2%	0	2
Histrionic	1 / 1.1%	1	0
TOTAL	91 / 100%	34 / 37.4%	57 / 62.6%

Table 3
Kruskal-Wallis Results. Profile, Pain Time, and Age. Differences between Mean Ranges

	Profiles	Mean range	χ^2	Significance of asymptote
Pain Time	Profile 1	43.40	1.180	.554
	Profile 2	36.70		
	Profile 3	40.62		

Table 4
Kruskal-Wallis Results. Differences between Mean Ranges

	Profiles	Mean range	χ^2	Significance of asymptote
Pain Time	Profile 1	42.32	2.151	.341
	Profile 2	35.05		
	Profile 3	45.44		
Harm appraisal	Profile 1	44.89	2.904	.234
	Profile 2	34.64		
	Profile 3	39.62		
Threat appraisal	Profile 1	43.56	1.182	.554
	Profile 2	37.07		
	Profile 3	39.76		
Challenge appraisal	Profile 1	37.64	3.599	.165
	Profile 2	49.02		
	Profile 3	38.91		
Anxiety*	Profile 1	37.75	4.920	.045
	Profile 2	38.55		
	Profile 3	52.21		
Depression	Profile 1	47.20	6.117	.037
	Profile 2	34.91		
	Profile 3	33.56		

* Note that lower scores in the HADS anxiety subscale represent higher anxiety levels.

Table 5
Results of Mann-Whitney U Test. Differences between Mean Range

	Profiles	Mean range	Significance of asymptote
Anxiety*	Profile 1	32.25	.882
	Profile 2	32.98	
	Profile 1	27.00	.034
	Profile 3	37.41	
	Profile 2	17.07	.057
	Profile 3	23.79	
Depression	Profile 1	35.94	.041
	Profile 2	25.93	
	Profile 1	32.76	.052
	Profile 3	23.18	
	Profile 2	20.48	.765
	Profile 3	19.38	

* Note that lower scores in the HADS anxiety subscale represent higher anxiety levels.

important to note that lower scores in the HADS anxiety subscale indicate higher anxiety levels. Thus, Profile 3 patients (high scores in the basic clinically compulsive personality scale) present lower levels of anxiety and depression. On the other hand, Profile 1 patients (high scores in three basic clinical personality scales: compulsive, narcissistic, and aggressive/sadistic) present higher levels of anxiety and depression. The Mann Whitney *U*-test was then applied to analyse differences between profiles in

relation to the previous two variables. The results are presented in Table 5.

Table 5 shows that there are significant between-profile differences in the mean ranges of anxiety and depression. In fact, there are significant differences between Profile 1 and the other profiles regarding depression levels, and between Profile 3 and the other profiles regarding anxiety levels. Thus, Profile 1 patients present higher levels of depression and Profile 3 patients present lower levels of anxiety.

Table 6
Significant Predictors of Scores in Adaptation (Anxiety, Depression, and Pain Perceived)

	Predictors	<i>B</i>	<i>SE B</i>	β	<i>T</i>	Significance of <i>T</i>
Anxiety						
$R^2 = .31$	Harm	-1.57	0.25	-0.55	-6.22	.00
	Constant	25.22	1.74		14.43	.00
Depression						
$R^2 = .38$	Challenge	-1.17	0.16	-0.61	-7.31	.00
	Constant	24.26	1.25		19.35	.00
Pain						
$R^2 = .23$	Harm	2.24	0.43	0.48	5.14	.00
	Constant	20.42	3.01		6.78	.00

Cognitive Appraisal

Multiple stepwise regression was used to analyse the data obtained. The predictor variables were the cognitive appraisal dimensions (threat, harm and challenge), and the dependent variables were depression and anxiety levels, and perceived pain total score. Table 6 shows only the significant between-variables relationships. No significant relations were excluded from the table.

The results show how the use of a cognitive appraisal of harm predicts higher anxiety levels and perceived pain. On the other hand, viewing the situation as a challenge predicts lower depression levels in chronic pain patients. The cognitive appraisal of threat variable does not predict mood or a higher or lower perceived pain level in chronic pain patients.

Discussion

Some of the results of the present study are similar to those of Monti et al., (1998) in which a frequency analysis showed that 92.4% of the sample presented high scores in one or more MCMI-II basic clinical personality scales. In the present study, 95.6% of the patients in the total sample scored in one or more basic clinical personality scales. Thus, patients were grouped into personality profiles according to the highest scores in the different scales. The more frequent profiles were Profile 1 (46.2%), composed of patients with high scores in the basic clinically schizoid, compulsive and dependent personality scales; Profile 2 (24.2%), composed of patients with high scores in basic clinically compulsive, narcissistic, and aggressive/sadistic personality scales; and Profile 3 (18.7%), composed of patients with high scores in the basic clinically compulsive personality scale. Therefore, 89.1% of the sample had high scores in the compulsive scale. According to Millon (1999), subjects with high scores in this scale are characterized by emotional suppression, passivity and social desirability. Attention should

be drawn to the fact that these characteristics may be related to the physical and social consequences of suffering chronic pain. The patients included in this sample present high scores in the basic clinically schizoid, compulsive and dependent personality scales. Thus, as Millon's theory suggests, these chronic pain patients are characterized by personality traits that, under stressful situations (such as pain), could lead to the risk of suffering a psychological disorder. Rodríguez, Cebriá, Corbella, Segura, & Sobreques, (2003) suggested a similar possibility after investigating personality traits in patients frequently attending Primary Health Care.

On the other hand, one unexpected result is that no differences were found between personality profiles in relation to cognitive appraisals or perceived pain. Nevertheless, Profile 1 patients (high scores in schizoid, compulsive and dependent personality scales) seem to be more poorly adjusted, as they show the highest levels of depression, although Profile 3 patients are the best adjusted, presenting lower levels of anxiety. However, the use of cognitive appraisal of harm predicts higher anxiety levels and greater intensity of perceived pain, suggesting that patients who appraise stressful situations as harmful adjust poorly to the situation. On the other hand, the use of cognitive appraisal of challenge predicts lower levels of depression. According to these results, it seems that patients who make this type of appraisal are better adjusted. These conclusions are in line with the theory that postulates that there may be a relationship between cognitive appraisal and pain intensity, affective disorders and psychological well-being (Chang, 1998; Folkman *et al.*, 1986; Gittes, 1996; Kimble, 1998; Miller, 1998; Oliver & Brough, 2002; Turk & Okifuji, 1995; Turk & Rudy, 1986; Skinner & Brewer, 2002; Soriano & Monsalve, 1999).

Our results support the role of cognitive appraisal made by chronic pain patients regarding their adjustment to this stressful situation. These conclusions are relevant in the clinical context because understanding the relationship between these variables could provide trait patients with an opportunity to make cognitive appraisals of challenge

regarding their condition, such that they could improve their quality of life and reduce anxiety and depression. Psychologists could play an important role in hospital pain units and help to improve the quality of life of these patients.

Finally, further research should be conducted given that—although the influence of clinical personality patterns in the appraisal process remains unclear—such personality profiles may have important consequences for patient adjustment, and thus, more needs to be known about them. Such studies would help us to know more about the psychological aspects of chronic pain and how to improve the quality of life of these patients. It also supports the role of psychologists in the hospital context and, specifically, in the pain management unit.

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