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Original Research Article

The Discriminatory Ability of the Fibromyalgia Rapid Screening Tool (FiRST): An International Study in Spain and Four Latin American Countries

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Abstract

Objective. To assess the transcultural equivalency of the Spanish version of the Fibromyalgia Rapid Screening Tool (FiRST) and its discriminatory ability in different Latin American samples.

Design. Validation study.

Setting. Departments of Rheumatology in general hospitals and private centers; fibromyalgia unit in a university hospital.

Subjects. 350 chronic pain patients from Spain, Argentina, Mexico, Peru, and Ecuador.

Methods. The cultural relevance of the Spanish version of the FiRST was evaluated. The ability of the FiRST as a screening tool for fibromyalgia was assessed by logistic regression analysis. To determine the degree to which potential confounders, such as differences in demographics, pain, affective distress, catastrophizing, and disability, might affect the discriminatory ability, the tool was reassessed by hierarchical multivariate logistic regression.

Results. Slightly different versions of the FiRST were recommended for use in each Latin American subsample. The FiRST showed acceptable criterion validity and was able to discriminate between fibromyalgia and non-fibromyalgia patients even after controlling for the effect of potential confounders. However, low specificities were observed in samples from Spain and Mexico.

Conclusions. The Spanish version of the FiRST may be used as a screening tool for fibromyalgia in several Latin American subsamples, even in those patients with high scores on potential confounders. In Spain and Mexico, the low specificity of the FiRST suggests, however, that it would be best

used to support a suspected diagnosis of fibromyalgia, rather than to exclude the diagnosis.

Key Words. Fibromyalgia; Diagnosis; Differential; Psychometrics; Questionnaires

Introduction

Fibromyalgia (FM) is a chronic pain disorder that typically affects women and is present worldwide. Despite ongoing research uncovering surprising findings about its pathophysiology, no established biomarker has been found for its diagnosis. Instead, clinical criteria are relied upon to identify and diagnose patients through expert clinical examination, which can preclude efficient diagnosis in primary care [1]. To facilitate the identification of patients with FM, a new set of criteria was proposed [2], revised [3], and further amended [4]. Because the diagnostic criteria require that clinicians must be able to exclude other disorders that might better account for a patient's pain, these approaches typically require a specialist rheumatologic examination that hinders detection of FM in primary care.

The Fibromyalgia Rapid Screening Tool (FiRST) was developed as a screening test by Perrot et al. [5][1]
[1]FiRST, Serge Perrot, Didier Bouhassira, REDAR, 2010. All rights reserved. FiRST contact information and permission for use: MAPI Research Trust, Lyon, France. E-mail: PRO information@mapi-trust.org; http://www.mapi-trust.org. The test aimed to facilitate the identification of patients in primary care with a high probability of having FM, enabling appropriate case selection for detailed rheumatologic examinations. Recently, our group validated the Spanish version of FiRST, demonstrating that the tool could be used to discriminate FM from other chronic pain disorders in a Spanish population [6].

In this study, we aim to assess the transcultural equivalency of the Spanish version of the FiRST and seek to assess its discriminatory ability in different Latin American countries.

Methods

Participants

Consecutive patients from Spain, Argentina, Mexico, Peru, and Ecuador were referred with suspected FM from departments of rheumatology or neurology or from pain clinics. After referral, patients were invited to participate in the study by rheumatologists specializing in FM (AC, OM, LV, CR, and PC). The study centers were the Hospital Clinic of Barcelona (Spain), Hospital Cosme Argerich of Buenos Aires (Argentina), Centro Diagnóstico de la Osteoporosis y Enfermedades Reumáticas (CEDOR) of Lima (Peru), Hospital 2 de Octubre, México DF (Mexico), and Centro de Reumatología de Guayaquil (Ecuador). Diagnosis was made according to the American College of Rheumatology (ACR) 1990 criteria [1] or by establishing an alternative chronic pain diagnosis according to the International Classification of Diseases, 10th revision (ICD-10) [7].

We excluded patients who were unable to understand the questionnaires, including those who were illiterate, had a comorbid psychiatric disorder compromising their ability to answer the questionnaires (e.g., schizophrenia or dementia), or were aged < 18 years. Informed consent was obtained prior to further examination of the included patients. Rheumatologists were blinded to the results of the questionnaires when diagnosing patients, and the clinical psychologist in charge of administering the questionnaires was blinded to the medical diagnosis. The study was approved by the relevant clinical research and ethics committees of the participating hospitals.

Sample Size

Given that the study included a logistic regression analysis, the sample size was calculated using Freeman's formula: $[N = 10^*(k + 1)]$, with k being the number of independent variables [8]. In the analysis of divergent validity, a maximum of 13 variables, including the FiRST global score, could potentially be introduced. Thus, the minimum sample size required was 140 patients.

Instruments

As stated in our previous validation study [6], all domains assessed by the FiRST can be influenced by variables unrelated to the diagnosis of FM. For example, differences in pain, affective distress, catastrophizing, and disability might partially explain the differences between patients with and without FM above and beyond the FiRST score. To control for the effects of these variables, the following instruments were selected.

Visual Analog Pain Scale

The intensity of pain was measured with an 11-point visual analog scale (VAS), where 0 represented no pain and 10 represented the maximum pain.

Hospital Anxiety and Depression Scale

The Hospital Anxiety and Depression Scale (HADS) is a 14-item, self-administered questionnaire comprising two 7-item subscales that assess current anxiety and depressive symptoms [9]. The HADS is a valid screening tool for anxiety and depressive disorders [10], and its content is less affected by the presence of somatic symptomatology compared with other psychopathology questionnaires [11]. The Spanish version of the HADS scale has proven validity and reliability [12].

Pain Catastrophizing Scale

The Pain Catastrophizing Scale (PCS) is a 13-item, self-administered questionnaire that evaluates the overestimation of the noxious and disabling nature of pain [13]. The Spanish version of the PCS has psychometric properties comparable to those of the original version [14].

Stanford Health Assessment Questionnaire-Disability Scale

The Health Assessment Questionnaire (HAQ) assesses functional disability across eight dimensions. A global score is obtained from the mean score across the eight categories, with higher scores indicating greater functional disability. The Spanish version of the HAQ has shown adequate validity and reliability, as well as sensitivity to clinical change [15].

Procedure and Statistical Analysis

Cultural Accuracy Revision

The FiRST was previously translated into Spanish and back-translated into English following international recommendations [6]. The Spanish version of the FiRST was reviewed by native English speakers and bilingual professional Spanish translators from Mexico, Argentina, Peru, Ecuador, and Spain to assure cultural relevance. In the final version, the following additions were made: the word "cansancio" was added to "fatiga" (fatigue) for all countries (item 2), the word "pinchazos" (pins and needles) was replaced by "piquetes" in the Mexican version (item 4), and the word "cefalea" (headache) was replaced by "dolores de cabeza" for all countries (item 5).

Internal Consistency

The internal consistency of the FiRST was assessed by calculating Cronbach's alpha coefficient.

Criterion Validity

Agreement between the results of the FiRST and those given by the "gold standard" (the medical diagnosis) was assessed at both the item and global score levels. At the item level, the ability of the FiRST to discriminate between patients with and without FM was assessed by comparing the pairwise equality of proportions and by the chi-squared test. The ability of the FiRST global score to serve as a screening tool for FM was assessed by logistic regression analysis.

The accuracy of the FiRST global score was further assessed by calculating the area under the receiver operating characteristic (ROC) curve and the cut-off points with the highest discriminative ability based on their sensitivity, specificity, and positive and negative likelihood ratios (LRs). The degree of agreement between the observed diagnoses and those predicted by the FiRST global score cut-off points was further assessed by calculating the kappa coefficient.

Divergent Validity

To assess the ability of the FiRST to discriminate between patients with and without FM by country of origin, and to assess the effect of other potential confounding variables, we compared demographic and clinical variables. Specifically, we used t-tests to compare means, and we used chi-square tests and pairwise tests of the equality of proportions (z-test) with Bonferroni corrections for multiple comparisons of proportions. Pearson's correlation coefficients between the FiRST global score and the pain intensity (VAS), depression (HADS-D), anxiety (HADS-A), pain catastrophizing (PCS), and functional disability (HAQ) scores were also calculated.

Country of origin, variables with between-group differences, and variables showing a linear relationship with the FiRST global score were considered potential confounders of the criterion validity of the FiRST. The FiRST was then reassessed by hierarchical multivariate logistic regression with manual, forward-entry selection. Country of origin (Spain was used as the reference category), demographics, pain, anxiety and depression, catastrophizing, disability, and the FiRST global score were entered in that order.

Results

In total, 350 patients were included in the study, as follows: Spain, 60 patients with FM and 60 patients with chronic pain (controls); Argentina, 29 patients with FM and 30 controls; Peru, 30 patients with FM and 20 controls; Ecuador, 30 patients with FM and 30 controls; and Mexico, 30 patients with FM and 31 controls. Patients with chronic pain not due to FM were heterogeneous regarding their diagnoses, with a high percentage of arthroses, dorsopathies, and soft tissue disorders (Table 1).

The demographic and clinical characteristics are shown in Table 2. Compared with the control (non-FM) group, patients with FM were mostly younger women who experienced more intense pain, anxiety, depression, and disability and perceived their pain as more noxious and disabling.

Internal Consistency

The internal consistency of the FiRST was acceptable (Cronbach's alpha = 0.70), suggesting that its items were interdependent and homogeneous. Only the deletion of item 3 ("pain like burns, electric shocks, or cramps") slightly increased the internal consistency of the FiRST by 0.02 points.

Table 1 Principal medical diagnoses in non-fibromyalgia chronic pain patients

		N (%)
Arthropathies		
	Polyarthritis	10
	Systemic connective tissue disorders	2
	Osteoarthritis	28
	Other joint disorders	6.5
Dorsopathies and spinal disorders		
	Spinal osteochondrosis	8.3
	Spondylopathies	3.8
	Other dorsopathies	3.4
	Chronic back pain	9.5
Soft tissue disorders		
	Synovial and tendon disorders	1.2
	Myofascial pain and other soft tissue disorders	9.6
	Myositis	4.7
	Complex regional pain syndrome	2.4
Polyneuropathies and other disorders of the peripheral nervous system		6.0
Demyelinating diseases of the central nervous system (multiple sclerosis)		3
Chronic fatigue syndrome		1.2

Note: The presence of several comorbidities entails percentages greater than 100%.

Criterion Validity

Responses were significantly different in all FiRST items for patients with and without FM, suggesting that a greater percentage of patients with FM presented with the symptoms measured by the FiRST (Table 2). The logistic regression for the FiRST global score as a single index showed that the model was able to discriminate between patients with FM and controls (−2 log likelihood = 352.37; chi-square = 132.65, d.f. = 1, $P < 0.01$; Nagelkerke $R^2 = 0.42$). The model showed an appropriate goodness of fit (chi-square = 2.97, d.f. = 4, $P = 0.56$), indicating that the number of predicted and observed patients with FM did not significantly differ. The model showed both an acceptable specificity (75% of controls were correctly classified) and sensitivity (76% of patients with FM were correctly classified).

The calculation of the area under the ROC curve indicated that the predictions of the FiRST global score had appropriate accuracy (area = 0.82 [0.02], $P < 0.01$, 95% CI 0.78 to 0.87) (Figure 1). The calculation of the curve coordinates showed that a cut-off point of 5 had the greatest ability to discriminate between patients with FM and controls (Table 3).

Divergent Validity

Table 2 shows the differences between patients with and without FM. Patients with FM tended to be younger women who reported greater pain intensity on the VAS, felt more anxious and depressed, and presented greater catastrophic thinking and lower functional capacity. The FiRST global score showed significant linear relationships with age at assessment and pain duration and with scores on the VAS, HADS, PCS, and HAQ (Table 4).

The multivariate logistic regression analysis showed that the FiRST was able to discriminate between FM and controls even after considering the country of origin and the effect of potential confounding variables (Table 5). In the last step of the logistic regression analysis, the FiRST global score explained a significant 8% of uncertainty of the data. Each point increase in the FiRST global score increased the odds of suffering from FM by two points.

Discussion

The results of our study show that the Spanish version of the FiRST was able to differentiate patients with FM from controls with other causes of chronic pain in Spain and different Latin American countries, even after taking into account the effect of potential confounding variables.

The FiRST assesses symptoms that, by definition, are subjective. Therefore, it is essential to consider cultural and linguistic differences in the idiosyncratic expression of those illness states [16]. The Spanish version of the FiRST was found to have acceptable transcultural equivalency at both the denotation and connotation levels, as indicated by the minor adaptations that were necessary after the cultural accuracy revisions. These minor

Table 2 Differences in sociodemographic and clinical characteristics and responses to FiRST

	Non-FM (N = 171) N (%)/mean (SD)	FM (N = 179) N (%)/mean (SD)	Chi-squared/t	df	*P*
Gender					
Female	**157 (92%)**	**175 (98%)**	**6.35**	**1**	**< 0.05**
Male	**14 (8%)**	**4 (2%)**			
Age	**55.0 (14.8)**	**47.3 (11.5)**	**5.42**[a]	**320.32**[a]	**< 0.01**[a]
Civil Status					
Married	105 (61%)	115 (64%)	**16.94**	**3**	**< 0.01**
Single	27 (16%)	31 (17%)			
Divorced	15 (9%)	28 (16%)			
Widow	**24 (14%)**	**5 (3%)**			
Educational level					
Elementary	66 (39%)	55 (31%)	3.13	2	0.21
High School	61 (36%)	65 (36%)			
College	44 (25%)	59 (33%)			
Pain duration (months)	59.4 (85.9)	70.5 (87.9)	–1.19	348	0.23
Tender points	**4.1 (3.9)**	**14.4 (2.6)**	**–29.12**[a]	**291.41**[a]	**< 0.01**[a]
Pain VAS (0–10 cm)	**5.5 (2.0)**	**7.5 (1.8)**	**–9.78**	**348**	**< 0.01**
HADS					
Depression	**6.4 (4.2)**	**9.8 (4.1)**	**–7.54**	**348**	**< 0.01**
Anxiety	**7.1 (3.9)**	**11.6 (4.2)**	**–10.36**	**348**	**< 0.01**
PCS	**19.9 (12.4)**	**28.8 (13.4)**	**–6.49**	**348**	**< 0.01**
HAQ	**0.9 (0.7)**	**1.1 (0.7)**	**–2.82**	**348**	**< 0.01**
FiRST					
Item 1 (Yes)	**91 (53%)**	**161 (90%)**	**58.52**	**1**	**< 0.01**
Item 2 (Yes)	**107 (63%)**	**165 (92%)**	**44.26**	**1**	**< 0.01**
Item 3 (Yes)	**81 (47%)**	**130 (73%)**	**23.30**	**1**	**< 0.01**
Item 4 (Yes)	**87 (51%)**	**157 (88%)**	**56.19**	**1**	**< 0.01**
Item 5 (Yes)	**64 (37%)**	**152 (85%)**	**83.47**	**1**	**< 0.01**
Item 6 (Yes)	**110 (64%)**	**155 (87%)**	**23.58**	**1**	**< 0.01**

[a]Corrected for inequality of variances according to Levene's test.
FM = fibromyalgia; FiRST = fibromyalgia rapid screening tool; VAS = visual analog scale; HADS = hospital anxiety and depression scale; PCS = pain catastrophizing scale; HAQ = health assessment questionnaire.
Bold values indicate statistically significant linear relationships.

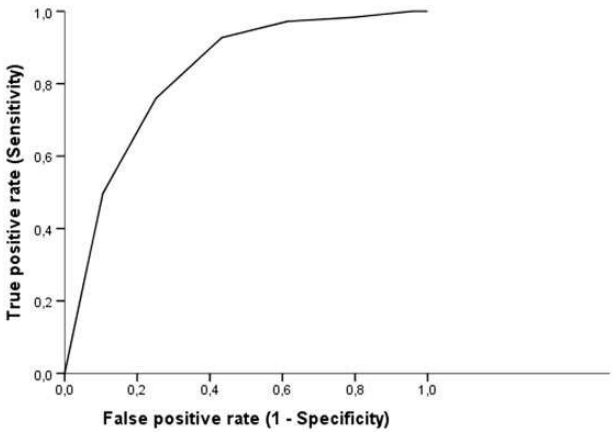

Figure 1 ROC curve for FiRST global score showing its ability to differentiate between fibromyalgia and non-fibromyalgia chronic pain patients.

changes resulted in a slightly different version of the FiRST for use in Latin American countries and a Mexican-specific version for item 4.

The specificity of the FiRST in the present study was higher than that observed previously, when only patients from Spain were included [6]. Differences between control groups might explain these differences. In our previous study, patients were selected only if they had a pain condition that represented a clear differential diagnosis. In the current study, the Latin American samples included cases with regional pain pathology. These painful conditions may be different enough from fibromyalgia to increase the specificity of the FiRST for screening purposes. Thus, further studies using the FiRST in Latin American countries should take this limitation into account.

Pain is expressed with idiosyncratic descriptions and levels of intensity. Consequently, differences in the

Table 3 Discriminatory ability of FiRST and cut-off points by country of origin

Country of origin	Best cut-off point	Sensitivity (%)	Specificity (%)	Positive likelihood ratio	Negative likelihood ratio	Kappa (95% CI)
Spain	≥ 5	85	48.3	1.65	0.31	0.33 (0.16 to 0.50)
Argentina	≥ 4	96.6	100	10	0	0.90 (0.79 to 1.00)
Peru	≥ 4	83.3	75	3.33	0.22	0.58 (0.35 to 0.81)
Ecuador	≥ 4	73.3	96.7	2.31	0	0.57 (0.36 to 0.78)
Mexico	≥ 4	80	58.1	1.91	0.16	0.38 (0.15 to 0.61)

CI = confidence interval; FiRST = fibromyalgia rapid screening tool.

Table 4 Correlations between FiRST global score and demographic and clinical variables

	FiRST global score	
	r	p
Age	**−0.25**	**< 0.01**
Pain duration (months)	**0.20**	**< 0.01**
Pain VAS (0–10 cm)	**0.46**	**< 0.01**
HADS		
Depression	**0.51**	**< 0.01**
Anxiety	**0.58**	**< 0.01**
PCS	**0.53**	**< 0.01**
HAQ	**0.35**	**< 0.01**

FiRST = fibromyalgia rapid screening tool; VAS, visual analog scale; HADS = hospital anxiety and depression scale; PCS = pain catastrophizing scale; HAQ = health assessment questionnaire.
Bold values indicate statistically significant linear relationships.

expression of pain between patients with and without FM might have affected the ability of the FiRST to differentiate between them. Higher pain duration, for instance, might be accompanied by a more severe clinical presentation that is characterized by the reporting of more symptoms and that potentially increases the FiRST score independently of the actual disorder (FM or another chronic pain disorder). Affective distress and catastrophizing might carry the same confounding effect, such that those with higher PCS and HADS scores might report higher levels of pain, greater disability, and greater interference due to pain. The latter seems especially relevant for the last question of the FiRST, which includes symptoms that potentially relate to depressive states. Finally, patients with FM had demographic variables different from those with chronic pain.

Despite these potential confusion effects, the last step of the multivariate analysis revealed that only age, VAS, and HADS–anxiety had essentially non-significant influences on the differentiation between patients with and without FM when considered together with the FiRST global score. Therefore, our results suggest that neither demographic variables, such as age or civil status, nor the severity of anxiety, depression, catastrophic thinking, or functional disability were reliable enough to differentiate FM from other chronic pain conditions. Instead, it may be assumed that the FiRST could correctly identify patients with FM regardless of age and civil status, and despite the presence of severe pain, long-lasting pain, affective distress, catastrophizing, or functional disability.

Country of origin could not independently differentiate between patients with and without FM. This finding supports the transcultural validity of the FiRST in Latin American countries. However, country of origin significantly increased the odds of suffering from FM when assessed with the FiRST global score, suggesting an influence on the ability of the FiRST to differentiate patients with FM from controls. For that reason, cut-off points and measures of agreement were recalculated for each country, and the results uncovered the need for different cut-off points for Spain, with lower than acceptable specificities for Spain and Mexico. This finding, which had been observed in our previous validation study [6], again suggests that the FiRST would be best used to support a suspected diagnosis of FM in these countries, rather than to exclude the diagnosis.

The ACR criteria published in 1990 [1] remain the gold standard for the diagnosis of FM. However, the need to facilitate diagnosis by non-specialists is driving the development of new initiatives. Thus, a new set of diagnostic criteria was proposed in 2010 and, following revision in 2011 [3], is being increasingly applied. These new criteria include 19 pain locations and 6 self-reported symptoms (impaired sleep, fatigue, poor cognition, headaches, depression, and abdominal pain). By removing the physical examination of tender points, the new ACR criteria seem to facilitate assessment in primary care settings.

Several studies have been conducted to determine the sensitivity and specificity of the new ACR criteria in different countries. In Canada, they were reported to be 97.4% and 85.2%, respectively [17], while the corresponding values in a Japanese study were 64% and 96% [18]. Other studies with samples from the USA [19], Spain [20], and Iran [21] have found different sensitivity and specificity values. Differences in the results of these studies may be related to the selection of the comparison groups, with higher specificity and lower

Table 5 Discriminatory ability of FiRST by the effect of potential confounder variables

	B	SE	Odds ratio (95% CI)	Change in − 2 log likelihood	Nagelkerke R^2
Step 1				1.86 ($P = 0.76$)	0.007
Country of origin					
Argentina	−0.03	0.32	0.97 (0.52 to 1.80)		
Peru	0.41	0.34	1.50 (0.77 to 2.93)		
Ecuador	0.00	0.32	1.00 (0.54 to 1.86)		
Mexico	−0.03	0.32	0.97 (0.52 to 1.79)		
Step 2				41.75 ($P < 0.01$)	0.16
Country of origin					
Argentina	0.04	0.33	1.04 (0.54 to 1.98)		
Peru	0.53	0.37	1.70 (0.82 to 3.50)		
Ecuador	0.35	0.34	1.41 (0.73 to 2.74)		
Mexico	0.72	0.37	2.05 (0.99 to 4.23)		
Gender	1.59	0.61	4.91 (1.49 to 16.14)		
Age	−0.04	0.01	0.96 (0.94 to 0.98)		
Civil status (widow)	−1.24	0.58	1.37 (0.09 to 0.90)		
Step 3				90.62 ($P < 0.01$)	0.43
Country of origin					
Argentina	0.38	0.41	1.47 (0.66 to 3.26)		
Peru	1.02	0.45	2.76 (1.15 to 6.65)		
Ecuador	0.67	0.41	1.96 (0.89 to 4.37)		
Mexico	0.32	0.45	1.37 (0.57 to 3.31)		
Gender	1.24	0.65	3.45 (0.97 to 12.20)		
Age	−0.05	0.01	0.95 (0.93 to 0.98)		
Civil status (widow)	−1.57	0.64	0.21 (0.06 to 0.72)		
Pain duration	0.00	0.00	1.00 (1.00 to 1.00)		
Pain VAS	0.06	0.01	1.06 (1.05 to 1.08)		
Step 4				35.84 ($P < 0.01$)	0.51
Country of origin					
Argentina	0.67	0.47	1.95 (0.78 to 4.91)		
Peru	1.33	0.48	3.78 (1.48 to 9.70)		
Ecuador	0.93	0.43	2.53 (1.09 to 5.85)		
Mexico	0.85	0.50	2.33 (0.88 to 6.17)		
Gender	1.29	0.70	3.65 (0.93 to 14.28)		
Age	−0.05	0.01	0.96 (0.93 to 0.98)		
Civil status (widow)	−1.38	0.68	0.25 (0.07 to 0.96)		
Pain duration	0.00	0.00	1.00 (1.00 to 1.00)		
Pain VAS	0.05	0.01	1.05 (1.03 to 1.07)		
HADS—depression	0.04	0.04	1.04 (0.96 to 1.13)		
HADS—anxiety	0.19	0.05	1.21 (1.10 to 1.32)		
Step 5				0.63 ($P = 0.43$)	0.52
Country of origin					
Argentina	0.61	0.47	1.84 (0.73 to 4.66)		
Peru	1.35	0.48	3.85 (1.49 to 9.90)		
Ecuador	1.03	0.45	2.79 (1.16 to 6.73)		
Mexico	0.78	0.53	2.04 (0.73 to 5.70)		
Gender	1.30	0.70	3.65 (0.92 to 14.45)		
Age	−0.05	0.01	0.96 (0.93 to 0.98)		
Civil status (widow)	−1.41	0.68	0.25 (0.06 to 0.94)		
Pain duration	0.00	0.00	1.00 (1.00 to 1.00)		
Pain VAS	0.05	0.01	1.05 (1.03 to 1.07)		
HADS—depression	0.04	0.04	1.05 (0.96 to 1.14)		
HADS—anxiety	0.21	0.05	1.23 (1.11 to 1.36)		
PCS	−0.01	0.02	0.99 (0.96 to 1.02)		

(continued)

Table 5 Continued

	B	SE	Odds ratio (95% CI)	Change in − 2 log likelihood	Nagelkerke R^2
Step 6				0.40 ($P = 0.53$)	0.52
Country of origin					
Argentina	0.73	0.51	2.07 (0.76 to 5.62)		
Peru	1.48	0.53	4.37 (1.56 to 12.28)		
Ecuador	1.18	0.51	3.24 (1.20 to 8.73)		
Mexico	0.79	0.54	2.20 (0.76 to 6.33)		
Gender	1.31	0.71	3.69 (0.93 to 14.68)		
Age	−0.05	0.01	0.96 (0.93 to 0.98)		
Civil status (widow)	−1.43	0.69	0.24 (0.06 to 0.92)		
Pain duration	0.00	0.00	1.00 (1.00 to 1.00)		
Pain VAS	0.05	0.01	1.05 (1.03 to 1.07)		
HADS—depression	0.04	0.04	1.04 (0.95 to 1.13)		
HADS—anxiety	0.21	0.05	1.24 (1.11 to 1.37)		
PCS	−0.02	0.02	0.99 (0.95 to 1.02)		
HAQ	0.17	0.27	1.19 (0.70 to 2.02)		
Step 7				39.77 ($p < 0.01$)	0.60
Country of origin					
Argentina	1.24	0.59	3.45 (1.08 to 11.01)		
Peru	2.09	0.60	8.05 (2.51 to 25.85)		
Ecuador	1.62	0.56	5.04 (1.68 to 15.17)		
Mexico	1.39	0.60	4.01 (1.23 to 1.10)		
Gender	1.24	0.77	3.46 (0.76 to 15.76)		
Age	−0.04	0.02	0.96 (0.93 to 0.99)		
Civil Status (widow)	−1.43	0.74	0.24 (0.06 to 1.02)		
Pain duration	0.00	0.00	1.00 (1.00 to 1.00)		
Pain VAS	0.04	0.01	1.04 (1.02 to 1.06)		
HADS—depression	0.01	0.05	1.01 (0.92 to 1.11)		
HADS—anxiety	0.16	0.06	1.18 (1.06 to 1.31)		
PCS	−0.03	0.02	0.97 (0.94 to 1.00)		
HAQ	0.01	0.29	1.01 (0.57 to 1.78)		
FiRST	0.79	0.14	2.20 (1.66 to 2.90)		

SE = standard error; CI = confidence interval; HADS = hospital anxiety and depression scale; PCS = pain catastrophizing scale; HAQ = health assessment questionnaire; FiRST = fibromyalgia rapid screening tool; VAS, visual analog scale.

sensitivity obtained when FM is compared to regional painful pathologies or healthy populations. The FiRST might be a reliable instrument for differentiating these populations in the initial clinical assessment. However, the ACR 2010 criteria require that pain not be better explained by other conditions. The assessment of this criterion still requires sufficient knowledge for the assessment of other musculoskeletal diseases or neurological conditions. The alternative criteria developed by Bennet et al. [4] classify FM by 28 pain locations and 10 self-reported symptoms. Importantly, this does not exclude a diagnosis of FM in patients with other pain disorders and retains appropriate sensitivity and specificity.

The need for an instrument to facilitate the accurate identification of patients with FM is driving the development of other rapid assessment tools, including the Fibromyalgia Diagnostic Screen [22] and the FibroDetect [23]. However, neither tool has been validated in Spanish populations. Meanwhile, the Spanish version of the FiRST is able, in an average of 3 minutes, to differentiate patients with FM from those with non-FM chronic pain in Spain and several Latin American countries. Moreover, the tool has acceptable sensitivity and moderate specificity, making it an appropriate screening tool that is especially useful in primary care settings.

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