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The Spanish version of the Fibromyalgia Rapid Screening Tool: translation, validity and reliability

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Abstract

Objective. Despite showing acceptable psychometric properties, the criterion validity of the original Fibromyalgia Rapid Screening Tool (FiRST) has been called into question for including insufficiently challenging comparison groups. Consequently our objective was to validate a Spanish version of the FiRST including pain disorders more analogous to fibromyalgia.

Methods. The FiRST was translated following international standards. Internal consistency and temporal stability were assessed. The ability of the FiRST global score as a screening tool for fibromyalgia (criterion validity) was assessed by logistic regression analysis. To determine the degree to which potential confounders might affect the criterion validity of the FiRST (divergent validity), it was reassessed by hierarchical multivariate logistic regression, entering demographics in a first step, followed by pain, anxiety and depression, catastrophizing, disability and the FiRST global score in a last step.

Results. The final sample comprised 257 patients (67% cases of fibromyalgia). The Spanish version of the FiRST showed acceptable internal consistency, reliability and criterion validity. The FiRST was able to discriminate between fibromyalgia and non-fibromyalgia patients even after controlling for the effect of potential confounders. However, both criterion and divergent validity were challenged by a moderate specificity.

Conclusion. The Spanish version of the FiRST may be used as a screening tool for fibromyalgia even in those patients whose cognitive style is characterized by catastrophizing about pain and high levels of functional disability, anxiety and depression. The clinical consequences of the moderate specificity shown by this Spanish version of the FiRST are discussed.

Key words: fibromyalgia, diagnosis, differential, psychometrics, questionnaires.

Introduction

FM is a common chronic pain disorder whose diagnosis requires an expert clinical examination [1], which makes an easy assessment of diagnostic criteria difficult in some health settings. Perhaps the greatest consequence of this problem is the delay in diagnosis, treatment and referral to specialized services [2–4].

To solve this problems, several screening procedures, such as the London Fibromyalgia Epidemiology Study Screening Questionnaire [5], the Manchester Criteria [6] and the Survey Criteria [7], have been developed. However, their lack of full psychometric validation along with uncertain sensitivity and specificity in some cases has prompted the creation of a new screening test, the Fibromyalgia Rapid Screening Tool (FiRST) [8] (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 final version of the FiRST included six homogeneous and temporally stable yes/no items that, at a

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cut-off point of 5, correctly classified 87.9% of FM patients with a sensitivity of 90.5% and a specificity of 85.7%. The FiRST global score was shown to be independent of depression, anxiety, catastrophizing and functional disability, suggesting that it would be able to detect FM patients with or without psychological comorbidities.

However, both the authors of the FiRST [8] and a commentary by Hansson [9] suggested as a main limitation of the study that the comparison groups included conditions with a clinical picture not comparable to that of FM, thereby questioning its ability to assist physicians in identifying FM in daily clinical practice. The independence between psychopathology and the FiRST global score might also be called into question by the exclusion of patients with severe depression.

In light of the above, the aim of this study was to validate a Spanish version of the FiRST that took into account these previous recommendations [8, 9] regarding the sensitivity and specificity of the FiRST, specifically by including complex clinical syndromes and widespread pain conditions not fulfilling ACR criteria of FM.

Materials and methods

Participants

Patients consecutively referred from the Rheumatology and Neurology Services of the Hospital Clinic of Barcelona due to suspected FM were approached by the rheumatologists of the Fibromyalgia Unit and invited to participate in a validation study of the FiRST. Illiterate patients or those age <18 years were not considered for the study. For all remaining patients, informed consent was obtained prior to further examination. After a medical examination, a psychiatric assessment was performed by the clinical psychologist of the Fibromyalgia Unit. All patients not suffering a psychiatric disorder that could compromise their ability to understand the questionnaires (e.g. schizophrenia or dementia) were eligible for inclusion in the study. Depression was not an exclusion criterion.

Rheumatologists, who were in charge of diagnosing patients according to the ACR 1990 criteria [1] or establishing an alternative chronic pain diagnosis according to the International Classification of Diseases, 10th revision (ICD-10) [10], were blinded to the results of the questionnaires. The clinical psychologist, who was in charge of administering the questionnaires, was blinded to the medical diagnostics.

Given that the study included a logistic regression analysis, the sample size was calculated using Freeman's formula: $[n = 10^*(k+1)]$, where k is the number of independent variables [11]. In the analysis of divergent validity, a maximum of 13 variables, including the FiRST global score, could potentially be introduced and therefore the minimum sample size required was 140 patients.

Instruments

The FiRST was created on the basis that the absence or presence of several items representative of FM might significantly increase the validity of the already existing screening tools [8]. However, as explained in the corresponding instrument subsections, the expression of all domains assessed by the FiRST may be influenced by variables other than suffering from FM. We therefore expected that differences in pain, affective distress, catastrophizing and disability would partially explain the differences between FM and non-FM patients above and beyond the FiRST score. All instruments were selected according to previous recommendations by Salaffi *et al.* [12].

McGill Pain Questionnaire

Pain is expressed with idiosyncratic descriptors and intensity [13]. Differences between FM and non-FM patients in the expression of pain might affect the ability of the FiRST to differentiate them. This is said to be a problem with the Manchester Criteria, which seem to better identify FM patients with more severe symptoms [8].

The McGill Pain Questionnaire (MPQ) [14] includes 66 pain descriptors assessing the sensory, affective and evaluative components of the painful experience. The Spanish version of the MPQ has shown acceptable psychometric qualities [15, 16]. However, as there are data that question the validity of the evaluative dimension [17], it was decided to consider only the sensory and affective subscales of pain.

Hospital Anxiety and Depression Scale

Self-report measures of depression and anxiety may reflect states of transient distress that are not necessarily representative of clinical syndromes, but which are nonetheless able to increase the likelihood that individuals report higher levels of pain, greater disability and greater interference due to pain [18, 19]. The latter may be especially relevant for at least the last question of the FiRST, which also includes symptoms potentially attributable to a depressive state.

The Hospital Anxiety and Depression Scale (HADS) is a 14-item self-administered questionnaire comprised of two 7-item subscales that assess current anxiety and depressive symptoms [20]. The content of the HADS seems less contaminated by the presence of somatic symptomatology than are other psychopathology questionnaires [21] and it is a valid screening tool for anxiety and depressive disorders [22]. The Spanish version of the HADS scale has proved to be a valid and reliable instrument for assessing anxiety and depressive symptoms and for detecting psychiatric morbidity in medical patients [23].

Beck Depression Inventory

The Beck Depression Inventory (BDI-II) is a 21-item self-administered questionnaire designed to assess the presence and severity of depressive symptoms. The Spanish version of the BDI-II has shown acceptable psychometric properties in the general population [24] and among psychiatric [25] and medical [26, 27] patients.

Pain Catastrophizing Scale

Individuals with high scores in catastrophizing seem to be more expressive during their pain experience [28]. Therefore the level of catastrophizing might influence responses on the FiRST. Catastrophizing also contributes

to heightened levels of pain, emotional distress and disability [29], which might worsen the self-report of these variables, possibly accounting for the differences between FM and non-FM patients above and beyond the FiRST scores.

The Pain Catastrophizing Scale (PCS) is a 13-item self-administered questionnaire that evaluates the overestimation of the noxious and disabling nature of pain [30]. It is comprised of three subscales that assess the tendency to magnify the perception of pain as a threat and to expect heightened pain (magnification), the difficulty to inhibit pain-related thoughts (rumination) and the feelings of helplessness in the presence of pain [31].

The Spanish version of the PCS has shown psychometric properties similar to those of the original version [32].

Stanford HAQ disability scale

In a nationwide study in Spain, patients with FM showed a functional disability similar to that caused by other rheumatologic conditions, thereby questioning whether greater interference in daily activities due to pain is specific to FM patients. However, a higher percentage of patients with FM did report suffering a high degree of functional disability [33]. These somewhat contradictory results make it advisable to consider functional disability when assessing the divergent validity of the FiRST.

The 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, reliability and sensitivity to clinical change [34].

Procedure and statistical analysis

The study was approved by the Clinical Research and Ethics Committee of the Hospital Clinic in Barcelona. Statistical analyses were performed with the software PASW Statistics, version 18.0.0 and MedCalc for Windows, version 12.6.1.0 (MedCalc Software, Ostend, Belgium).

Linguistic validation

Two independent translations of the FiRST English version into Spanish were obtained from two English native and Spanish bilingual professional translators. The first author and the translators agreed on a version that was conceptually equivalent to the original one and avoided technical expressions and professional jargon. This first version was then back-translated by a professional English translator who was independent of the research team, to ensure the absence of translation errors and verify the semantic concordance between the original and the back-translated versions of the FiRST [35]. The final version of the FiRST was tested in a pilot study of 20 patients with FM who confirmed a high level of item acceptance and comprehension and who, on average, were able to complete the questionnaire in <3 min.

Internal consistency and reliability

Internal consistency of the FiRST was analysed by calculating Cronbach's α coefficient. Two to four weeks after the first administration, the MPQ, HADS and HAQ were re-administered to a random subgroup of outpatients. Patients who reported no changes in their health status were selected for the test–retest reliability analysis. At the item level, test–retest reliability was assessed by calculating the κ coefficient between the two administrations. For the FiRST global score, temporal stability was assessed by calculating the intraclass correlation coefficient (ICC) and the Bland–Altman plot and limits of agreement [36, 37].

Criterion validity

A measurement technique has criterion validity if its results are closely related to those given by another well-established technique that is considered the 'gold standard' (in this case, the medical diagnosis). The ability of the FiRST to discriminate at the item level between FM and non-FM chronic pain patients was assessed by comparing the pairwise equality of proportions and by the chi-square 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 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, positive likelihood ratio (LR) and negative LR. 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 κ coefficient.

Divergent validity

Divergent validity assesses whether the measurement is unrelated to variables from which it should be relatively independent. The goal here was to assess the degree to which the ability of the FiRST to discriminate between FM and non-FM patients might be affected by potential confounding variables. To this end, demographic and clinical variables for FM and non-FM patients were compared by *t*-tests for comparison of means and by chi-square tests and the pairwise test of the equality of proportions (*z*-test) with the Bonferroni correction for multiple comparisons of proportions. Pearson correlation coefficients were also calculated between the FiRST global score and the sensorial and affective dimensions of pain, and its intensity on a visual analogue scale (MPQ), depression (HADS-D, BDI-II) and anxiety (HADS-A), pain catastrophizing (PCS) and functional disability (HAQ).

Variables that showed differences between groups and those showing a linear relationship with the FiRST global score were considered potentially influential or confounders of the criterion validity of the FiRST, which was then reassessed by hierarchical multivariate logistic regression using a manual, forward-entry selection method with demographics in a first step, followed by pain, anxiety and depression, catastrophizing, disability and the FiRST global score.

Results

A total of 258 patients were invited to participate in the study. One patient did not consent to answering the questionnaires. No illiterate patients or individuals <18 years of age were referred to the FM Unit during the study period. None of the patients was diagnosed with a psychiatric disorder that might compromise his/her understanding of the questionnaires (Table 1). Hence the final sample comprised 257 patients. In 172 (67%) cases the rheumatologist of the FM Unit confirmed the diagnosis of FM. Diagnoses in the group of non-FM patients were heterogeneous, most notably axis or peripheral arthrosis, dorsopathies and soft tissue disorders (Table 2). Table 1 shows the demographic and clinical characteristics of each group of patients. Non-significant differences between FM and non-FM patients were observed in the percentage of personality disorders (PDs) (Table 1). In the FM group the PD diagnoses comprised 1 (0.6%) paranoid, 2 (1.2%) borderline, 1 (0.6%) histrionic, 4 (2.3%) obsessive–compulsive, 1 (0.6%) avoidant and 4 (2.3%) PDs not otherwise specified. In the non-FM group, 1 (1.2%) patient was diagnosed with a borderline PD, 1 (1.2%) histrionic and 2 (2.4%) PDs not otherwise specified.

Internal consistency and reliability

The internal consistency of the FiRST was acceptable (Cronbach's $\alpha = 0.72$), suggesting that its items are

Table 1 Differences between FM and non-FM chronic pain patients in sociodemographic and clinical characteristics and in responses to the FiRST items

	Non-FM ($n = 85$)	FM ($n = 172$)	Chi-square/t-value	d.f.	P
Gender, *n* (%)					
Female	78 (92)	168 (98)	4.85	1	<0.05*
Male	7 (8)	4 (2)			
Age, mean (S.D.), years	51.9 (11.7)	46.5 (10.0)	3.86	255	<0.01*
Civil status, *n* (%)			1.34	3	0.72
Married	62 (73)	131 (76)			
Single	7 (8)	8 (5)			
Divorced	14 (17)	29 (17)			
Widow	2 (2)	4 (2)			
Educational level, *n* (%)			0.08	2	0.96
Elementary	30 (35)	58 (34)			
High school	39 (46)	82 (48)			
College	16 (19)	32 (18)			
Pain duration, months	101.3 (130.2)	103.7 (93.2)	−0.17	255	0.87
Tender points	5.9 (3.1)	14.4 (2.1)	−22.67	123.07[a]	<0.01*
MPQ					
Sensorial	17.7 (6.7)	20.5 (7.6)	−2.95[a]	186.8[a]	<0.01[a]*
Affective	3.2 (1.9)	4.2 (2.2)	−3.54	255	<0.01*
VAS (0–10 cm)	5.8 (1.9)	6.9 (1.4)	−4.57[a]	129.67[a]	<0.01[a]*
HADS					
Depression	8.2 (4.8)	10.4 (4.6)	−3.57	255	<0.01*
Anxiety	9.7 (4.5)	12.3 (4.6)	−4.27	255	<0.01*
BDI-II	20.5 (12.3)	27.1 (12.2)	−4.13	255	<0.01*
PCS	25.2 (12.1)	30.8 (11.4)	−3.62	255	<0.01*
HAQ	1.2 (0.7)	1.6 (0.5)	−4.13[a]	131.39[a]	<0.01[a]*
Psychiatric diagnoses (axis I), *n* (%)					
Yes	37 (44)	113 (66)	11.51	1	<0.01*
Adjustment disorders	17 (20)	45 (26)	1.18	1	0.27
Affective disorder	18 (22)	59 (34)	4.67	1	0.03*
Anxiety disorder	1 (1)	3 (2)	0.12	1	0.73
Other	1 (1)	6 (4)	1.15	1	0.28
Psychiatric diagnoses (axis II-PD), *n* (%)					
Yes	4 (5)	13 (8)	0.75	1	0.36
FiRST, *n* (%)					
Item 1 (yes)	47 (55)	163 (95)	59.32	1	<0.01*
Item 2 (yes)	60 (71)	164 (95)	31.16	1	<0.01*
Item 3 (yes)	49 (58)	129 (75)	8.05	1	<0.01*
Item 4 (yes)	54 (64)	164 (95)	44.75	1	<0.01*
Item 5 (yes)	49 (58)	153 (89)	33.14	1	<0.01*
Item 6 (yes)	65 (77)	168 (98)	30.21	1	<0.01*

[a]Corrected for inequality of variances according to the Levene's test. *Statistically significant mean or proportion differences between FM and non-FM patients.

Table 2 Medical diagnoses in non-FM chronic pain patients ($n = 85$)

	n (%)
Arthropathies	
Inflammatory polyarthropathies	11 (13)
Arthrosis	27 (32)
Other joint disorders	5 (6)
Dorsopathies	
Deforming dorsopathies	5 (6)
Spondylopathies	1 (1)
Other dorsopathies	80 (94)
Soft tissue disorders	
Disorders of synovium and tendon	11 (13)
Other soft tissue disorders	34 (40)
Episodic and paroxysmal disorders	
Migraine and other headache syndromes	1 (1)
Systemic connective tissue disorders	1 (1)
Disorders of bone density and structure	5 (6)
Polyneuropathies and other disorders of the peripheral nervous system	3 (3)
Demyelinating diseases of the central nervous system (multiple sclerosis)	6 (7)
Chronic fatigue syndrome	2 (2)

The presence of several comorbidities entails percentages >100%.

interdependent and homogeneous. Temporal stability was acceptable both for each item and for the global score. At the item level, complete agreement between test and retest answers of the subgroup of patients ($n = 20$) who reported no changes in their health status was observed on items 1, 2, 4 and 6. On item 3, two cases changed from no to yes ($\kappa = 0.74$) while one case changed from no to yes on item 5 ($\kappa = 0.83$). For the global score, the ICC indicated strong agreement (ICC = 0.76, $P < 0.01$, 95% CI 0.50, 0.90). The Bland–Altman plot further suggested acceptable agreement between the test and retest measurements, shown by the low difference on average between the FiRST global score at test and retest administrations [mean = −0.25 (0.44), 95% CI −0.46, −0.04] and the distribution of points within the narrow interval between the limits of agreement (−1.12 to 0.62) (Fig. 1).

Criterion validity

A comparison of the responses of FM and non-FM patients revealed significant proportion differences in all FiRST items, suggesting that a greater percentage of FM patients presented the symptoms measured by the FiRST (Table 1). The logistic regression for the FiRST global score as a single index showed that the model was able to discriminate between FM and non-FM (−2 log likelihood = 250.13; chi-square = 76.10, d.f. = 1, $P < 0.01$; Nagelkerke $R^2 = 0.36$). The model showed an appropriate goodness of fit (chi-square = 4.82, d.f. = 3, $P = 0.19$), indicating that the number of FM patients observed did not significantly differ from the number of FM patients predicted by the model. However, these findings were challenged by a moderate specificity (55% of non-FM patients

Fig. 1 Bland–Altman plot of the difference in the FiRST global score (test measurement − retest measurement) against the mean of the two administrations.

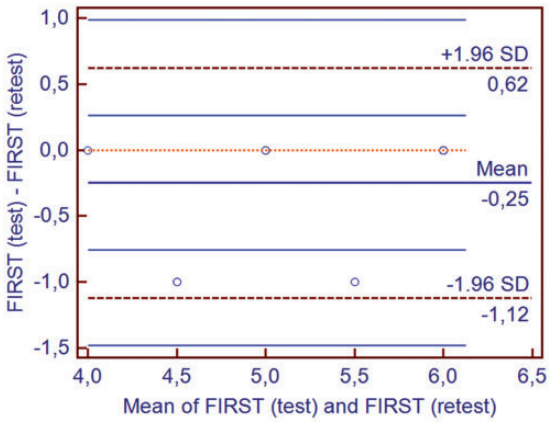
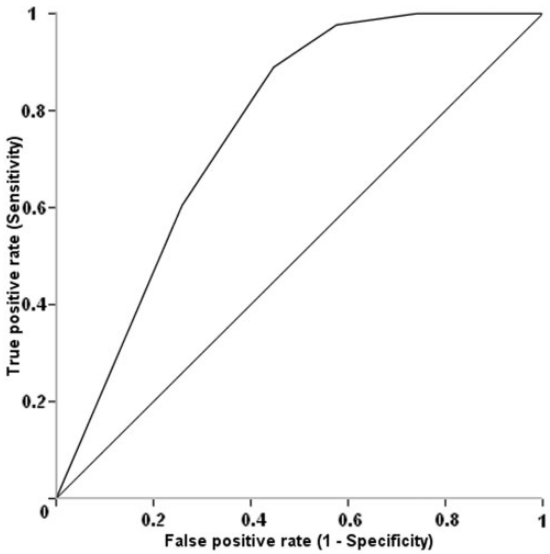


Fig. 2 ROC curve for the FiRST global score showing its ability to differentiate between FM and non-FM chronic pain patients.



correctly classified) despite high sensitivity (89% of FM patients were correctly classified).

The area under the ROC curve indicated that the predictions of the FiRST global score showed an appropriate level of accuracy (area = 0.76 (0.04), $P < 0.01$, 95% CI 0.69, 0.83) (Fig. 2). The calculation of the curve coordinates suggested that the cut-off point with the greatest ability to discriminate between the FM and the non-FM patients was 5 (Table 3).

Divergent validity

Table 1 shows the differences between FM and non-FM patients. A higher percentage of women were observed

Table 3 Ability of the FiRST global score cut-off points to discriminate between FM and non-FM chronic pain patients

Cut-off point, ⩾	Sensitivity, %	Specificity, %	Positive LR	Negative LR	κ (95% CI)
1	100	4.7	1.04	0	0.06 (0.0034, 0.12)
2	100	16.5	1.20	0	0.21 (0.11, 0.31)
3	100	25.9	1.35	0	0.32 (0.21, 0.43)
4	97.7	42.4	1.70	0.05	0.46 (0.35, 0.58)
5[a]	89.0	55.3	1.99	0.20	0.47 (0.35, 0.59)
6	60.5	74.1	2.33	0.53	0.30 (0.20, 0.41)

[a]Cut-off point established for the original version of the FiRST [8].

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

	FIRST global score	
	r	*P*
Age	−0.18	<0.01*
Pain duration, months	0.07	0.29
MPQ		
Sensorial	0.25	<0.01*
Affective	0.24	<0.01*
VAS (0–10 cm)	0.43	<0.01*
HADS		
Depression	0.34	<0.01*
Anxiety	0.38	<0.01*
BDI-II	0.40	<0.01*
PCS	0.40	<0.01*
HAQ	0.39	<0.01*

*Statistically significant linear relationships between the FiRST global score and the corresponding control variable.

among FM patients, who were also younger, reported greater pain both on the VAS and on the sensorial and affective dimensions of the MPQ, felt more anxious and depressed and presented greater catastrophic thinking and lower functional capacity. The FiRST global score showed significant linear relationships with the age at assessment and with scores on the MPQ, HADS, BDI-II, PCS and HAQ (Table 4).

The multivariate logistic regression analysis showed that the FiRST was able to discriminate between FM and non-FM patients even after considering the effect of potentially confounding variables (see supplementary Table S1, available as supplementary data at *Rheumatology* Online). In the last step of the logistic regression analysis, the FiRST global score explained a unique and significant 13% of the proportion of uncertainty of data. Each point increase in the FiRST global score increased the odds of suffering FM by 2 points.

Discussion

The Spanish version of the FiRST showed acceptable internal consistency, temporal stability and criterion validity and it may therefore be used as a screening tool for FM. Perhaps the main strength of the FiRST is its ability to discriminate between FM and other chronic pain patients once potentially confounding variables have been considered. Contrary to the results of the original version [8], the Spanish version of the FiRST showed significant univariate linear relationships with measures of anxiety, depression, catastrophizing and functional capacity, but none of these variables was able to differentiate between FM and non-FM patients when considered concurrently with pain intensity and the FiRST global score. Additionally, the FiRST was able to discriminate between FM and non-FM patients even after controlling for the effect of the differences between samples in the age of patients and pain intensity. Consequently the FiRST is applicable even to those patients whose cognitive style is characterized by catastrophizing about pain and high levels of functional disability, anxiety and depression.

For a cut-off point of 5, the sensitivity of the FiRST was beyond the generally accepted 75%, correctly classifying 89% of FM patients and leaving an 11% rate of false negatives. Specificity, however, was lower than that observed in the original version. Scores below the cut-off point of 5 correctly identified 55% of non-FM patients, leaving a 45% rate of false positives. This lower specificity may be related to several similarities between FM and other chronic pain patients that were observed in our study but not in the original one. Specifically, two of the FiRST items were endorsed by >70% of non-FM patients. Item 2 (continuous fatigue accompanying pain) inquires about a symptom that seems to be frequent both in the pain disorders included in our study and in the literature [38, 39]. The wording of item 6 (impact of pain on life, sleep and concentration, and feeling generally slower) is possibly too general and seems to be common to a substantial number of heterogeneous Spanish pain patients and to previous observations of other types of pain disorders [40]. Further research might try to refine the content of the FiRST, perhaps by specifying a more disabling aspect of fatigue [41] and/or by dividing item 6 into its four components to assess which of them, if any, is more specific to FM patients.

Perhaps the main conclusion of our study is that this Spanish version of the FiRST would be best used to support a suspected diagnosis of FM rather than to discard it. However, the clinical utility of this instrument also rests on

other considerations. The FiRST is a cheap, easy-to-apply tool that can be completed in <3 min, and it seems acceptable and relevant for the patients. Given that in Spain the first line of detection for FM cases is primary care, there is a need for an easy-to-use screening tool in daily clinical practice. In this regard, the Spanish version of the FiRST would allow missed cases to be kept to a minimum, albeit at the cost of increasing false alarms, what might raise the question of the cost of increasing the number of false-positive cases of FM. Ideally a suspected diagnosis of FM on the FiRST should be followed by a confirmatory medical assessment, which would undoubtedly increase costs in the short term. However, a diagnosis of FM based solely on the FiRST cut-off point might cause the attribution of all symptoms to FM, thus overlooking other chronic pain disorders (e.g. multiple regional pain disorders) that require a different therapeutic approach in up to 45% of cases. Patients with FM may present with comorbid rheumatologic conditions, which might compromise the ability of the FiRST to differentiate between patients with overlapping diagnoses. However, the FiRST was constructed from a list of items that are considered to be specific to FM. In fact, one of the main conclusions of the original validation study was that FM constitutes a specific entity, at least on clinical grounds. Therefore rheumatologic comorbidity should not affect the original high sensitivity and specificity of the FiRST, a finding that is not fully confirmed by the present results.

In all, application of the Spanish version of the FiRST might help reduce morbidity through early detection of the disease, when treatment is usually more successful. Indeed, early treatment of FM seems more cost-effective [42], and the cost of screening is less than the cost of later care, when some problems (such as affective or sleep disorders) may have worsened, new problems (related to work or finance) may have developed and perpetuating factors may have been fully developed [43, 44]. Future research should also assess the real costs of detecting a higher number of false positives [2, 45] and the risk reduction achieved, i.e. by determining if earlier detection is followed by a real improvement of clinical and psychosocial outcomes.

Limitations

The applicability of this version of the FiRST is limited to the population of Spain. Further research is required to confirm its psychometric properties and cultural accuracy in Hispanic populations. Patients were recruited from those referred through primary care to the specialist rheumatology and neurology services of our hospital. Although a selection bias could have resulted from the inclusion of more evolved and severe cases, which might compromise the generalization of our results, such cases may also be those for which family physicians find more differential diagnostic difficulties. It would be advisable for further research to assess the accuracy of the FiRST in cases of shorter duration and with a less severe clinical picture.

Items assessing descriptors of pain quality, abnormal sensations and comorbid symptoms proved to be the most discriminant. Given that the content of this item is similar to those assessing neuropathic pain, the low number of neuropathic pain cases included in our study might compromise the assessment of this item's specificity.

Rheumatology key messages

- The Spanish version of the FiRST may aid in the differential diagnosis of FM.
- The moderate specificity of the FiRST discourages its clinical use for rejecting a diagnosis of FM.

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Supplementary data

Supplementary data are available at *Rheumatology* Online.

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