Angarita-Osorio, Natalia; Pérez-Aranda, Adrián; Feliu-Soler, Albert; [et al.]. «Patients with fibromyalgia reporting severe pain but low impact of the syndrome : clinical and pain-related cognitive features». Pain practice : the official journal of World Institute of Pain, Vol. 20 Núm. 3 (2020), p. 255-261. 15 pàg. DOI 10.1111/papr.12847

DR. ALBERT FELIU-SOLER (Orcid ID : 0000-0003-2810-7670)
PROF. XAVIER BORRÀS (Orcid ID : 0000-0003-3972-1385)
DR. JUAN V LUCIANO (Orcid ID : 0000-0003-0750-1599)

Article type : Original Manuscript

Patients with fibromyalgia reporting severe pain but low impact of the syndrome: clinical and pain-related cognitive features

Natalia Angarita-Osorio, MSc[1], Adrián Pérez-Aranda, MSc[1,2,3], Albert Feliu-Soler, PhD[1,2,3*], Laura Andrés-Rodríguez, MSc[1,2,3,4], Xavier Borràs, PhD[1,4], Carlos Suso-Ribera, PhD[5], Mahmoud Slim[6], Paola Herrera-Mercadal, PhD[7], Rita Fernández-Vergel, Dr[8,9], Mª Elena Blanco, Dr[9,10], Juan V. Luciano, PhD[1,2,3]

[1] Group of Psychological Research in Fibromyalgia & Chronic Pain (AGORA), Fundació Sant Joan de Déu, Esplugues de Llobregat, Spain. [2] Teaching, Research & Innovation Unit, Parc Sanitari Sant Joan de Déu, Sant Boi de Llobregat, Spain. [3] Primary Care Prevention and Health Promotion Research Network, RedIAPP, Madrid, Spain. [4] Faculty of Psychology, Universitat Autònoma de Barcelona, Bellaterra, Spain. [5]Department of Basic and Clinical Psychology and Psychobiology, Universitat Jaume I, Castellón de la Plana, Spain. [6]Division of Neurology, The Hospital for Sick Children, Toronto, Canada. [7]Centro de Investigación Biomédica en Red de Salud Mental, Primary Care Prevention and Health Promotion Research Network, Instituto Aragonés de Ciencias de la Salud Zaragoza, Spain. [8]SAP Delta Llobregat. DAP Costa Ponent. Institut Català de la Salut (ICS), Catalonia, Spain. [9]Fundació Idiap Jordi Gol i Gurina, Barcelona, Spain. [10]Primary Health Centre Bartomeu Fabrés Anglada, SAP Delta Llobregat, Unitat Docent Costa de Ponent, Institut Català de la Salut, Gavà, Spain.

Corresponding author: Dr. Albert Feliu-Soler: a.feliu@pssjd.org. Address: Teaching, Research & Innovation Unit, Parc Sanitari Sant Joan de Déu. C/ Dr. Antoni Pujadas 42, 08830, Sant Boi de Llobregat, Barcelona, Spain

Keywords: Fibromyalgia, pain, impact, adaptability, catastrophism, psychological inflexibility.

This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record. Please cite this article as doi: 10.1111/PAPR.12847

Funding: The study has been funded in part by the Instituto de Salud Carlos III (ISCIII) of the Ministry of Economy and Competitiveness (Spain) through the Network for Prevention and Health Promotion in Primary Care (RD16/0007/0005 & RD16/0007/0012), by a grant for research projects on health from ISCIII (PI15/00383) cofinanced with European Union ERDF funds. The second and fourth listed authors (APA and LAR) have a FI predoctoral contract awarded by the Agency for Management of University and Research Grants (AGAUR; FI_B00754 and FI_B00783, respectively). The third listed author (AFS) has a "Sara Borrell" research contract from the ISCIII (CD16/00147). The last listed author (JVL) has a "Miguel Servet" research contract from the ISCIII (CP14/00087).

Conflict of interest: The authors have no conflict of interest to declare.

Abstract

Background: Fibromyalgia (FM) is a prevalent and highly disabling chronic pain syndrome. However, differences among patients regarding how pain impacts on daily life are remarkable. The main aim of this study was to identify clinical and pain-related cognitive variables characterizing patients reporting high adaptability despite experiencing severe chronic pain.

Methods: 283 Spanish patients with FM with high levels of pain were classified on two groups: (1) those reporting low impact of the syndrome, and (2) those with moderate-to-high impact. Perceived stress, anxiety, and depressive symptoms along with pain catastrophizing, psychological inflexibility, and perceived control over pain were evaluated. Differences in sociodemographics, years with FM, past/current major depressive disorder comorbidity, and health-related economic costs (i.e. medications, use of medical services, lost productivity due to sick leave) were also assessed. Stepwise logistic regression analyses predicting group membership from clinical variables and pain-related cognitive processes as predictors were performed.

Results: Lower stress, anxiety and depressive symptoms along with reduced pain catastrophism, psychological inflexibility and perceived control over pain were found in the low-impact group. Significant predictors of group membership (low-impact vs. moderate-to-high impact) in regression analyses were "cognitive fusion" (psychological inflexibility), "helplessness" (pain catastrophizing) and depressive symptomatology, together with pain intensity and other FM symptoms.

Conclusions: The present study provides further evidence on resilience resources in chronic pain by identifying some variables (i.e. reduced depressive symptomatology, pain catastrophizing and psychological inflexibility) differentially characterizing a profile of FM patients who are especially able to adapt to high levels of pain.

Keywords: Fibromyalgia, pain, impact, adaptability, catastrophism, psychological inflexibility.

Patients with fibromyalgia reporting severe pain but low impact of the syndrome: clinical and pain-related cognitive features

Introduction

Fibromyalgia (FM) is a highly prevalent and disabling syndrome characterized by chronic widespread pain, fatigue, sleep difficulties and perceived cognitive dysfunction, without a curative treatment to date [1,2]. FM is associated with remarkable levels of impairment and it is characterized by elevated rates of unemployment and per-patient costs [3]. Clinically, it has been estimated that 20% to 60% of patients with FM present comorbid affective disorders such as anxiety and depression [4]. Previous studies have also identified different pain-related cognitive processes that contribute to an increased negative impact of FM on emotional functioning including pain catastrophizing [5], psychological inflexibility [6] and coping abilities [7], which should be, therefore, key points to be addressed by non-pharmacological interventions in FM [8].

The complex symptomatology of FM interferes in patients' daily function, preventing them from accomplishing their goals and reducing their ability to plan work and social activities [9]. Widespread pain is the cardinal symptom in FM and has a major effect on quality of life [10]. However, pain is not the only factor explaining the impact of the syndrome as the latter is known to vary across patients reporting similar pain severity levels [1, 11]. This study focuses on investigating the psychological correlates of patients with FM characterized by high adaptability to severe levels of pain, that is patients in an extreme scenario of success, showing *low* overall impact of the syndrome despite experiencing *severe* pain. Identifying clinical and psychological characteristics of this "super-adaptive profile" or "low-impact group" of patients with FM under severe pain could be helpful for both researchers and clinicians to design treatments addressed to target those attributes that are more strongly related with effectively managing FM.

Therefore, we aimed to specifically compare the clinical and pain-related cognitive processes between FM patients with high adaptability (i.e. reporting low overall impact on their daily functioning) versus those with poorer adaptability (i.e. reporting moderate-to-high impact) to severe chronic pain. Differences between both groups on sociodemographic variables, clinical history, and health-related costs were also explored.

Methods

Participants and procedure

We pooled data from two previous studies with adult FM patients carried out in Barcelona, Spain [12,13]. Both studies received ethical approval from each enrolling institution –Sant Joan de Déu Foundation (PIC-33-11 and PIC-102-15) and the Jordi Gol i Gurina Foundation research ethics committee (P12/94)– and are in line with the 1964 Helsinki Declaration and its later amendments. A written informed consent was obtained from all participants. The first study included a sample of 229 patients (i.e., Sample 1) and the second study comprised a sample of 160 patients (i.e., Sample 2). A detailed description of both studies protocols and inclusion/exclusion criteria can be found elsewhere [12,13]. Of the total sum of patients, only those reporting severe levels of pain were included in the present study (*n*= 385). Following the methodology used by Suso-Ribera et al [14], a score of 7 or higher in the pain intensity item of the *Revised Fibromyalgia Impact Questionnaire* (FIQR; item #12: *"please indicate the intensity of the pain in the last 7 days, where 0 is no pain and 10 is unbearable pain"*) was used as a cut-off to select patients with severe pain levels. According to this inclusion criterion, the final sample of the present study (*n*= 283) was composed of 156 patients from Sample 1 (55.12%) and 127 patients from Sample 2 (44.88%). The 283 patients were then classified into two groups according to the tertile of their scores on the FIQR's subscale "Overall impact": (1) the "low-impact group"; with scores ≤ 10 out of 20, corresponding to the first tertile (*n*= 97) and, (2) the "moderate-to-high-impact group; with scores > 10 out of 20, including second and third tertiles (with scores ranging from 11 to 18, and > 18, respectively; *n*= 186).

Regarding sociodemographic differences between samples included in the study (Sample 1 vs Sample 2), participants in Sample 1 were younger (*M* –mean–= 53 vs 58 years old; *p*< .001), had higher education levels (e.g. primary school 53% vs 33%; *p*< .001) and were more likely to have paid employment (26% vs 14%; *p*< .001). Clinically, participants in Sample 1 reported experiencing less severe pain (*M*= 8.35 vs 8.9; *p*< .001), less "Physical impairment"-FIQR (*M*= 20.3 vs 22.2; *p*< .001), lower "Overall Impact"-FIQR (*M*= 12.8 vs 14.4; *p*= .045) and lesser levels of pain catastrophizing (*M*= 25.8 vs 33.1; *p*< .001). Longer FM duration was reported in Sample 1 (*M*= 13.9 vs 9.6 years; *p*< .001).

Measures

Both Sample 1 and 2 completed the *Revised Fibromyalgia Impact Questionnaire* (or FIQR) and the *Pain Catastrophizing Scale* (or PCS). The FIQR is the current "gold standard" for assessing the functional impairment in FM [15] and was used in the present study to classify patients into the two groups of FM impact. The FIQR "Overall impact" subscale addresses the overall impact of FM on functioning and symptom severity and consists of the following two items: *"Fibromyalgia prevented me from accomplishing goals for the week"* and *"I was completely overwhelmed by my fibromyalgia symptoms"* (both with a range of scores from 0 to 10). The FIQR consists of 21 items using an 11-point numerical rating, which ranges from 0 to 10 with higher scores indicating greater functional impairment. Items are grouped into three subscales: "Physical impairment" (scores from 0 to 30), "Severity of symptoms" (scores from 0 to 50), and the aforementioned "Overall impact" subscale (with scores ranging from 0 to 20).

The PCS [16] is a widely used measure of the frequency of thoughts about catastrophic consequences of pain consisting of 3 dimensions (i.e. Rumination: tendency to focus excessively on pain sensations; Magnification: tendency to magnify the threat value of pain sensations; and Helplessness: tendency to perceive oneself as unable to control the intensity of pain).

Additionally, the following scales were administered in Sample 1: the *Perceived Stress Scale (PSS-10)* which is a well-known self-report measure for stress assessment [17]; the *Hospital Anxiety and Depression Scale* (HADS) which evaluates anxiety and depressive symptomatology [18]*;* and the *Psychological Inflexibility in Pain Scale* (PIPS) which is a cognitive process measure which assesses two main aspects of psychological inflexibility: Avoidance of pain and Fusion with pain thoughts [19]. Participants in Sample 2, besides FIQR and PCS, also completed the following scales: the *Center for Epidemiologic Studies Depression Scale* (CES-D) for evaluating depressive symptomatology [20]; the *trait subscale from the State-Trait Anxiety Inventory-Trait* (STAI-T) for assessing anxiety trait [21]; and perceived control over pain (*Coping Strategies Questionnaire*) as a measure of the perceived efficacy to control and decrease pain (CSQ-Control) [22].

Direct, indirect, and total health-economic costs of FM were also computed for the whole study sample (see Table 1) through the Spanish adaptation of the *Client Service Receipt Interview* (CSRI) [23]. The CSRI used in the present study collected 12-month retrospective data on FM-related medications and service receipt (i.e. direct costs), and number of days on sick leave (i.e. indirect costs).

Statistical analyses

SPSS v22.0 was used to compute the data analyses. Comparisons between low- and moderate-to-high-impact groups were conducted using Student's *t* test for continuous variables and χ^2 tests for categorical variables. Finally, two logistic stepwise multivariate regressions (one for each of the two samples) were performed to predict impact group membership using clinical variables and pain-related cognitive variables as independent predictors of “low-impact group” membership (0= No, 1= Yes). Odds ratios (OR) and Nagelkerke’s R^2 were reported.

Results

There were no significant differences in any of the sociodemographic characteristics between low- and moderate-to-high-impact groups (Table 1). Overall, most participants were women (98%) with an average age of 55 years old. Most of them were married (75%), and had not completed secondary school (65%). Only 58 patients (20%) had a paid employment at the time of assessment. Patients had a documented diagnosis of FM for an average of 11 years prior to enrollment.

Insert Table 1

Compared to the “low-impact profile”, patients in the moderate-to-high-impact group reported significantly higher rates of “Current depressive episode” (66% vs. 46.4%, p= .017) and “Current first depressive episode” (50% vs. 25%, p= .002) but they were less likely to report “Previous depressive episode” (28% vs. 51.87%, p= .003). Regarding costs associated with FM, significant differences in direct (p= .011) and total costs (p= .016) were found between groups, with more elevated direct costs being linked to the “moderate-to-high-impact” condition. No significant differences were observed in indirect costs.

As shown in Table 2, patients in the low-impact group had significantly lower scores (all p< .01) on PSS-10, HADS-Anxiety and HADS-Depression (Sample 1), and CESD and STAI-T (Sample 2). Regarding cognitive process variables, significant differences were observed for the PCS and its subscales (all p< .001; both samples), the PIPS and its subscales (all p≤ .001; Sample 1), and the CSQ-Control (p< .001; Sample 2). Item of perceived pain from the FIQR-Symptoms subscale, along with “Physical impairment” and “Other FM Symptoms” were also found to favor the low-impact group (p< .001; both samples).

Insert Table 2

Regarding variables administered in Sample 1, the following constructs were found to be significant predictors of low-impact group membership (R^2= .445, and 75.2% of the cases correctly classified): FIQR-perceived pain (OR= .601, p= .001), FIQR-Other FM Symptoms (OR= .885, p= .001), and PIPS-Cognitive Fusion (OR= .893, p= .004). In Sample 2, the following variables were found to be significant predictors of group membership (R^2= .580, and 81.1% of the cases correctly classified): FIQR-perceived pain (OR= .606, *p*< .001), PCS-Helplessness (OR= .856, *p* = .001) and CESD (OR= .932, *p*= .002). Note that self-reported level of pain from the FIQR (which was found to be significantly higher in moderate-to-high-impact group) was entered as predictor in both logistic regressions, so its relationship with the outcome was controlled.

Discussion

The main purpose of this study was to identify clinical and pain-related cognitive features of patients with FM who despite having a high level of pain, report low levels of overall perceived impact of FM. To our knowledge, this is the first investigation that attempts to evaluate and define such a profile of patients.

Along with favorable FM-related symptomatology and less functional impairment, the low-impact condition presented significantly lower levels of perceived stress, anxiety and depression compared to the moderate-high-impact profile. Reduced number of cases with a current depressive episode in the low-impact group (46% vs 66 %) was also found in the low-impact group, which is consistent with studies showing the emotional impact of the disease [4, 9]. Unexpectedly, a higher prevalence of past depressive episode was found in the group reporting a lower impact of the syndrome (51.8% vs 28%), which could be interpreted as showing a relatively protective effect of this previous experience on the current impact of FM or on how the current situation is appraised/relativized [24].

The observed differences in pain-related cognitive variables revealed a low-impact group characterized by reduced pain catastrophizing, more psychological flexibility and more perceived control over pain, suggesting that promoting such cognitive features may entail benefits regarding how FM impacts on patients' daily life. Coherently with our findings, pain catastrophizing has been considered as one of the classic therapeutic targets of non-pharmacological interventions due to its significant impact on well-being [16]. Furthermore, psychological inflexibility is one of the main targets of "third-wave" cognitive-behavioral psychotherapies and it is an important mechanism through which Acceptance Commitment and Therapy leads to beneficial outcomes for a wide variety of populations and clinical symptoms [25]. Finally, perceived control over pain has been linked to pain-related self-efficacy in FM and has been also associated with positive outcomes in pain settings, including pain severity [26] and disability [27].

These findings emphasize the need to include the aforementioned cognitive process variables (along with other clinical aspects such as current depression) as primary targets in the treatment of FM. It must be noted that sociodemographic variables were not found to be significantly different between low- and moderate-to-high-impact groups, which suggests that the results may be applicable to participants of different age groups, educational and marital situations. Also importantly, patients in the low-impact group also reported lower health-care related economic costs (i.e., direct costs related to medication and use of health-care resources), which suggests that addressing the clinical and psychological variables identified in the present study may also entail benefits from a socioeconomic perspective.

This study has some limitations that cannot be overlooked. First, it involves secondary analysis of data. That is, we explored issues other than those for which the data were gathered in the original studies. Therefore, there are gaps in the data with regard to the questions being asked in the secondary analysis. Thus, not all of the analyses were conducted using the whole pooled sample. Consequently, these results should be interpreted with caution until they are eventually replicated in further investigations.

The identification of resilience resources in chronic pain patients is becoming a topic of increasing interest [28]. The present study provides further evidence in this direction by identifying some variables (i.e. reduced depressive symptomatology, pain catastrophizing and psychological inflexibility) differentially characterizing a profile of FM patients who are especially able to adapt to high levels of pain at a relatively low overall impact of the syndrome. These results show that differences in overall functioning exist in patients with severe pain levels and indicate that clinical and, most importantly, pain-related cognitive features can help identify those with a low-impact profile and, ultimately, guide interventions in a more effective manner. Multicomponent treatments aimed at enhancing psychological flexibility and reducing both pain catastrophizing and depression symptomatology may promote a more adaptive profile in FM patients experiencing severe pain.

References

1. Häuser W, Ablin J, Fitzcharles M-A, Littlejohn G, Luciano J V, Usui C, et al. Fibromyalgia. Nat Rev Dis Prim; 2015;1:15022.

2. Cabo-Meseguer A, Cerdá-Olmedo G, Trillo-Mata JL. Fibromialgia: prevalencia, perfiles epidemiológicos y costes económicos. Med Clin (Barc); 2017;149:441–8.

3. Leadley RM, Armstrong N, Lee YC, Allen A, Kleijnen J. Chronic Diseases in the European Union: The Prevalence and Health Cost Implications of Chronic Pain. J Pain Palliat Care Pharmacother. 2012;26:310–25.

4. Clauw DJ. Fibromyalgia: a clinical review. JAMA. 2014;311:1547–55.

5. Edwards RR, Bingham CO, Bathon J, Haythornthwaite JA. Catastrophizing and pain in arthritis, fibromyalgia, and other rheumatic diseases. Arthritis Rheum. 2006;55:325–32.

6. Wicksell RK, Renöfält J, Olsson GL, Bond FW, Melin L. Avoidance and cognitive fusion--central components in pain related disability? Development and preliminary validation of the Psychological Inflexibility in Pain Scale (PIPS). Eur J Pain. 2008;12:491–500.

7. Rodero B, Casanueva B, Luciano J V, Gili M, Serrano-Blanco A, García-Campayo J. Relationship between behavioural coping strategies and acceptance in patients with fibromyalgia syndrome: Elucidating targets of interventions. BMC Musculoskelet Disord. 2011;12:143.

8. Pérez-Aranda A, Barceló-Soler A, Andrés-Rodríguez L, et al. Description and narrative review of well-established and promising psychological treatments for fibromyalgia. Mindfulness & Compassion. 2017;2:112–29.

9. Arnold LM, Crofford, LJ, Mease PJ, Burgess SM, Palmer SC, Abetz L, Martin, SA. Patient perspectives on the impact of fibromyalgia. Patient education and counseling. 2008;73(1):114-120.

10. Bennett RM, Schein J, Kosinski MR, Hewitt DJ, Jordan DM, Rosenthal NR. Impact of fibromyalgia pain on health-related quality of life before and after treatment with tramadol/acetaminophen. Arthritis Care & Research: Official Journal of the American College of Rheumatology. 2005;53(4):519-527.

11. Pérez-Aranda A, Andrés-Rodríguez L, Feliu-Soler A, et al. Clustering a large Spanish sample of patients with fibromyalgia using the Fibromyalgia Impact Questionnaire–Revised: differences in clinical outcomes, economic costs, inflammatory markers, and gray matter volumes. Pain. 2019;160(4):908-921.

12. Luciano J V, Forero CG, Cerdà-Lafont M, et al. Functional Status, Quality of Life, and Costs Associated With Fibromyalgia Subgroups: A Latent Profile Analysis. Clin J Pain. 2016;32:829–40.

13. Feliu-Soler A, Borràs X, Peñarrubia-María MT, et al. Cost-utility and biological underpinnings of Mindfulness-Based Stress Reduction (MBSR) versus a psychoeducational programme (FibroQoL) for fibromyalgia: a 12-month randomised controlled trial (EUDAIMON study). BMC Complement Altern Med. 2016;16:81.

14. Suso-Ribera C, García-Palacios A, Botella C, Ribera-Canudas MV. Pain Catastrophizing and Its Relationship with Health Outcomes: Does Pain Intensity Matter? Pain Res Manag. 2017;2017:1–8.

15. Bennett RM, Friend R, Jones KD, Ward R, Han BK, Ross RL. The Revised Fibromyalgia Impact Questionnaire (FIQR): validation and psychometric properties. Arthritis Res Ther. 2009;11:R120.

16. Sullivan MJL, Bishop SR, Pivik J. The Pain Catastrophizing Scale: Development and validation. Psychol Assess. 1995;7:524–32.

17. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. J Health Soc Behav. 1983;24:385–96.

18. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. Acta Psychiatr Scand. 1983;67:361–70.

19. Wicksell RK, Renöfält J, Olsson GL, Bond FW, Melin L. Avoidance and cognitive fusion–central components in pain related disability? Development and preliminary validation of the Psychological Inflexibility in Pain Scale (PIPS). Eur J Pain. 2008;12:491-500.

20. Radloff LS. The CES-D Scale. Appl Psychol Meas [Internet]. Sage Publications Sage CA: Thousand Oaks, CA; 1977;1:385–401.

21. Spielberger CD, Gorsuch RL, Lushene RE. Manual for the State-Trait Anxiety Inventory. Palo Alto, CA: Consulting Psychologists Press; 1970.

22. Rosenstiel AK, Keefe FJ. The use of coping strategies in chronic low back pain patients: relationship to patient characteristics and current adjustment. Pain. 1983;17:33–44.

23. Vázquez-Barquero J, Gaite L, Cuesta M, García-Usieto E, Knapp M, Beecham J. Versión española del CSRI: una entrevista para la evaluación de costes en salud mental. Arch Neurobiol (Madr). 1997;60:171–84.

24. Leknes S, Berna C, Lee MC, Snyder GD, Biele G, Tracey I. The importance of context: when relative relief renders pain pleasant. PAIN. 2013;154(3):402-410.

25. Ciarrochi, J. Bilich, L., & Godsel, C. (2010). Psychological flexibility as a mechanism of change in Acceptance and Commitment Therapy. In Ruth Baer’s (Ed), Assessing Mindfulness and Acceptance: Illuminating the Processes of Change.(pp. 51-76). New Harbinger Publications, Inc.: Oakland, CA.

26. Nicassio PM, Schoenfeld-Smith K, Radojevic V, Schuman C. Pain coping mechanisms in fibromyalgia: relationship to pain and functional outcomes. J Rheumatol. 1995;22:1552–8.

27. Dobkin PL, Liu A, Abrahamowicz M, et al. Predictors of Disability and Pain Six Months After the End of Treatment for Fibromyalgia. Clin J Pain. 2010;26:23–9.

28. Suso-Ribera C, Camacho-Guerrero L, Osma J, Suso-Vergara S, Gallardo-Pujol D. A reduction in pain intensity is more strongly associated with improved physical functioning in frustration tolerant individuals: A longitudinal moderation study in chronic pain patients. Front Psychol. 2019;10:1–12.

Table 1. Descriptive characteristics of the low- and moderate-to-high-impact groups.

	Low **(*n* = 97)**	**Moderate-High** **(*n* = 186)**	***t* or χ^2 (*p*)**
Age (*M*, *SD*)	56.36 (7.58)	54.83 (8.97)	-1.43 (.153)
Sex (No. Females, %)	95 (97.9%)	182 (97.8%)	.002 (.961)
Marital status, *n* (%)			3.97 (.265)
Single	2 (2.1%)	6 (3.2%)	
Married	79 (82.6%)	134 (72%)	
Separated/divorced	8 (8.3%)	29 (15.6%)	
Widowed	7 (7.3%)	17 (9.1%)	
Education level, *n* (%)			2.39 (.793)
Illiterate	10 (10.3%)	19 (10.2%)	
Not graduated	10 (10.3%)	23 (12.4%)	
Primary school	46 (47.4%)	79 (42.5%)	
Secondary school	27 (27.8%)	60 (32.3%)	
University	4 (4.1%)	4 (2.2)	
Others	0	1 (.5%)	
Employment status, *n* (%)			9.64 (.210)
Homemaker	18 (18.8%)	35 (18.8%)	
Paid employment	24 (25%)	34 (18.3%)	
Paid employment but on sick leave	3 (3.1%)	12 (6.5%)	
Unemployed with subsidy	14 (14.6%)	24 (12.9%)	
Unemployed without subsidy	10 (10.4%)	26 (14%)	
Retired/pensioner	16 (16.7%)	19 (10.2%)	
Temporary disability	0	6 (3.2%)	
Others	11 (11.5%)	30 (16.1%)	

Clinical history			
Years of diagnosis of FM (M, *SD*)	11.81 (8.32)	11.44 (8.45)	.33 (.740)
Current depressive episode (*n*, %) *	26 (46.4%)	66 (66%)	5.69 (.017)
Current *first* depressive episode (*n*, %)*	14 (25%)	50 (50%)	9.27 (.002)
Past depressive episode (*n*, %)*	29 (51.8%)	28 (28%)	8.76 (.003)
Health-economic costs in euros (*M, SD)*			
Direct costs	976 (1,343)	1,055 (1,400)	-2.55 (.011)
Indirect costs	1,851 (6,131)	3,895 (20,965)	-1.96 (.104)
Total costs	2,907 (6,326)	5,002 (21,411)	-2.42 (.016)

Note: *data available only for Sample 1, evaluated by means of the depression module from the SCID-I, Structured Clinical Interview for DSM Axis I Disorders ($n_{\text{“low-impact”}}$= 56 and $n_{\text{“high-impact”}}$= 100). For clarity, Means and *SD*s of economic costs in the table are not log-transformed.

Table 2. Clinical and cognitive variables in the low- and moderate-to-high impact groups.

	Low **(*n*=97)**	**Moderate-High** **(*n*=186)**	***t* (*p*)**
Clinical variables			
FIQR			
FIQR Pain item (0-10)	7.95 (.96)	8.93 (1.07)	-7.84 (<.001)
FIQR Overall impact (0-20)	5.54 (3.88)	17.63 (2.70)	-27.46 (<.001)
FIQR Other FM Symptoms (0-45)	25.87 (7.76)	33.82 (6.31)	-10.82 (<.001)
FIQR Physical impairment (0-30)	18.65 (5.34)	22.42 (5.07)	-5.81 (<.001)
FIQR Total (0-100)	56.45 (12.13)	78.86 (11.17)	-15.51 (<.001)
Psychological variables			
PSS-10 (0-40) [a]	21.63 (8.62)	26.01 (8.87)	-2.99 (.003)
HADS Anxiety (0-21) [a]	10.71 (4.68)	12.74 (4.14)	-2.80 (.006)
HADS Depression (0-21) [a]	7.25 (4.75)	10.01 (4.69)	-3.51 (.001)
CESD (0-60) [b]	28.24 (9.27)	40.27 (9.64)	-6.65 (<.001)
STAI-T (20-80) [b]	32.85 (8.38)	41.74 (9.68)	-5.04 (<.001)
Pain-related cognitive process variables			
PCS Rumination (0-16)	7.52 (4.94)	10.59 (4.48)	-5.25 (<.001)
PCS Magnification (0-12)	4.43 (2.79)	6.76 (3.21)	-6.29 (<.001)
PCS Helplessness (0-24)	9.73 (6.17)	15.56 (5.86)	-7.74 (<.001)
PCS Total Score (0-52)	21.67 (12.45)	32.91 (12.27)	-7.22 (<.001)
PIPS Avoidance (8-56) [a]	27.25 (11.88)	38.30 (13.70)	-5.05 (<.001)
PIPS Cognitive Fusion (4-28) [a]	20.47 (5.16)	23.26 (4.14)	-3.64 (.001)
CSQ-Control (0-6) [b]	4.51 (1.45)	3.29 (1.99)	3.91 (<.001)

Note: Results are presented as mean (*SD*). CESD = Center for Epidemiological Studies-Depression; CSQ-Control = Control Over Pain from the Coping Strategies Questionnaire; FIQR = Fibromyalgia Impact Questionnaire Revised; HADS = Hospital Anxiety and Depression Scale; PCS = Pain Catastrophizing Scale; PIPS = Psychological Inflexibility in Pain Scale; PSS = Perceived Stress Scale; STAI-T = State-Trait Anxiety Inventory – Trait. [a] Only available in Sample 1 ($n_{\text{“low-impact”}}$= 56 and $n_{\text{“moderate-to-high-impact”}}$= 100); [b] Only available in Sample 2 ($n_{\text{“low-impact”}}$= 41 and $n_{\text{“moderate-to-high-impact”}}$= 86).