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Unraveling pathways to depression in fibromyalgia, the role of perseverative negative thinking and negative affect

A.M. Pinto [1,2,3,*], C. Costa [2], A.T. Pereira [3], M. Marques [3,4], J.A. Pereira da Silva [2], A. Macedo [3,4]
[1] Faculty of Psychology and Educational Sciences of the University of Coimbra, Cognitive and Behavioural Center for Research and Intervention, Coimbra, Portugal
[2] Faculty of Medicine of the University of Coimbra and Coimbra Hospital and University Centre, Rheumatology University Clinic, Coimbra, Portugal
[3] Faculty of Medicine of the University of Coimbra, Psychological Medicine Department, Coimbra, Portugal
[4] Coimbra Hospital and University Centre, Department of Psychiatry, Coimbra, Portugal
* Corresponding author.

Introduction Several studies have demonstrated a strong link between fibromyalgia, negative affect (NA) and depression. However, it remains unclear why some fibromyalgia patients get depressed while others do not and, primarily, which mechanisms account for this difference. We hypothesize that, besides clinical features, the engagement in dysfunctional strategies like perseverative negative thinking (PNT) followed by an amplification of NA levels may increase the risk of fibromyalgia patients experiencing depressive symptoms.

Objective/Aims To explore the serial mediator effect of PNT and NA on the relationship between fibromyalgia symptoms and depressive symptoms.

Methods Hundred and three women with fibromyalgia (mean age 47.32 ± 10.63) completed the Portuguese version of the Revised-Fibromyalgia Impact Questionnaire, Perseverative Thinking Questionnaire, Profile of Mood States and Beck Depression Inventory-II. The association between the variables was investigated via Pearson correlations and serial multiple mediation.

Results The estimated model was significant [$F (3.86) = 57.318$, $P < .001$] explaining 66.66% of depressive symptoms variance. The total effect of fibromyalgia symptoms on depressive symptoms was of .4998 (SE = 0.0795, $P < 0.001$; CI > 0.3417 and < 0.6578), with a significant direct effect of 0.1911 (SE = 0.0653; CI > 0.0614 and < 0.3209). The total indirect effects were of 0.3086 (SE = 0.0619; CI > 0.2033 < 0.4458). Three significant specific indirect effects were found.

Conclusion The effect of fibromyalgia symptoms on depressive symptoms is partially operated through cognitive interference/unproductiveness, which in turn influences NA levels. Such findings highlight the crucial role of these constructs in the relationship between fibromyalgia symptoms and depressive symptoms and the urge to address them when treating individuals reporting greater fibromyalgia symptoms.

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A cross-sectional analysis of the relationships of FAM components and their effects on quality of life in Chinese patients with chronic musculoskeletal pain

W. Wong [1,*], H. Lim [2], P. Chen [3], S. Wong [4], Y. Chow [4], J. Lam [5], R. Fielding [6]
[1] Hong Kong Institute of Education, Dept of Special Education & Counseling, Hong Kong, China
[2] United Christian Hospital, Dept of Anesthesiology & Operating Services, Hong Kong, China
[3] Alice Ho Miu Ling Nethersole Hospital, Dept of Anesthesiology & Operating Services, Hong Kong, China
[4] Queen Mary Hospital, Dept of Anesthesiology & Operating Services, Hong Kong, China
[5] Hong Kong Institute of Education, Dept of Psychological Studies, Hong Kong, China
[6] University of Hong Kong, School of Public Health, Hong Kong, China
* Corresponding author.

Introduction A body of evidence has accrued supporting the Fear-Avoidance Model (FAM) of chronic pain which postulated the mediating role of pain-related fear in the relationships between pain catastrophizing and pain anxiety in affecting pain-related outcomes. Yet, relatively little data points to the extent to which the FAM be extended to understand chronic pain in Chinese population and its impact on quality of life (QoL).

Objective This study explored the relationships between FAM components and their effects on QoL in a Chinese sample.

Methods A total of 401 Chinese patients with chronic musculoskeletal pain completed measures of three core FAM components (pain catastrophizing, pain-related fear, and pain anxiety) and QoL. Cross-sectional structural equation modeling (SEM) assessed the goodness of fit of the FAM for two QoL outcomes, Physical (Model 1) and Mental (Model 2). In both models, pain catastrophizing was hypothesized to underpin pain-related fear, thereby influencing pain anxiety and subsequently QoL outcomes.

Results Results of SEM evidenced adequate data-model fit (CFI[3]0.90) for the two models tested (Model 1: CFI = 0.93; Model 2: CFI = 0.94). Specifically, pain catastrophizing significantly predicted pain-related fear (Model 1: stdb = 0.90; Model 2: stdb = 0.91), which in turn significantly predicted pain anxiety (Model 1: stdb = 0.92; Model 2: stdb = 0.929) and QoL outcomes in a negative direction (Model 1: stdb = −0.391; Model 2: stdb = −0.651) (all $P < 0.001$) (Table 1, Fig. 1).

Conclusion Our data substantiated the existing FAM literature and offered evidence for the cross-cultural validity of the FAM in the Chinese population with chronic pain.

Table 1 Results of SEM testing the FAM for two QoL outcomes.

Model	S–Bχ^2	df	P value	CFI	NNFI	RMSEA	90% CI	SRMR
Model 1: QoL-Physical	147.70	33	<0.001	0.93	0.90	0.10	0.09, 0.12	0.05
Model 2: QoL-Mental	141.50	33	<0.001	0.94	0.91	0.10	0.08, 0.18	0.05

Note: The FAM hypothesized that pain catastrophizing is the predictor of pain-related fear, which influenced pain anxiety and subsequently pain adjustment outcomes. QoL-Physical was indexed the SF-12 physical component score; QoL-Mental was indexed by the SF-12 mental component score. S–Bχ^2 = Satorra & Bentler scaled chi-square statistics; df = degrees of freedom; CFI = comparative fit index; NNFI = non-normed fit index; RMSEA = root mean square error of approximation; CI = confidence interval; SRMR = standardized root mean square residual.