IOCBS 2026 Conference

The 1st International Online Conference on Behavioral Sciences

01–03 April 2026 | Online

MDPI

FIBROMYALGIA AND EMOTIONAL VULNERABILITY: EXPLORING THE ROLES OF PSYCHOLOGICAL INFLEXIBILITY AND ANXIETY SENSITIVITY

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INTRODUCTION

Psychological factors play a relevant role in pain modulation in Fibromyalgia Syndrome (FMS), particularly personality traits such as neuroticism (N), extraversion (E), psychoticism (P) and alexithymia, which have been associated with differences in emotional processing, coping strategies, and pain perception (Seto et al., 2018; Santiago et al., 2025). Higher N and alexithymia are commonly linked to maladaptive coping strategies such as catastrophizing and emotional avoidance (Di Tella et al., 2018). Beyond these traits, cognitive-emotional processes such as experiential avoidance and anxiety sensitivity have been associated with avoidance-oriented coping and emotional distress (Esteve et al., 2012). However, their relationships with personality traits, alexithymia, and pain outcomes in FMS remain insufficiently explored.

OBJECTIVES

The present study examines:

- The association between psychological inflexibility (experiential avoidance) and anxiety sensitivity (physical, cognitive, and social dimensions) in FMS patients and healthy controls.
- The relationship between psychological inflexibility and relevant psychological and emotional variables in FMS, including personality traits (N, E and P) and alexithymia.
- The association between psychological inflexibility and pain perception (pain threshold and tolerance) in patients with FMS and healthy controls.
- The relationship between psychological inflexibility and heart rate variability (HRV) as an indicator of emotional regulation.
- The mediating role of psychological and emotional variables (personality traits and alexithymia) in the relationship between psychological inflexibility, anxiety sensitivity and pain perception in patients with FMS.

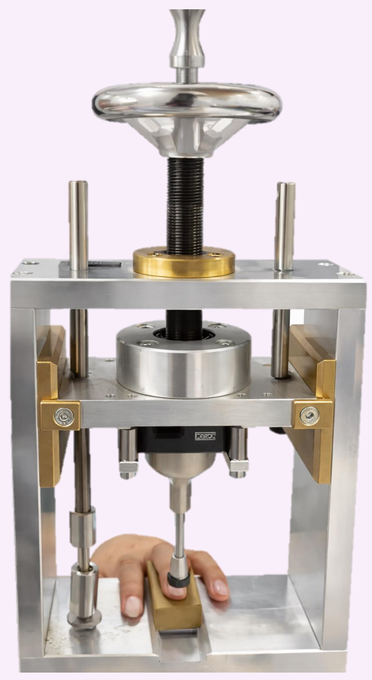
METHOD

Participants: 38 women with FMS (29–67 year) and 37 healthy controls (41–68 year). Exclusion criteria included other chronic pain, severe illness, certain medications, or substance abuse.

Measures: Personality (N, E, P), alexithymia, experiential avoidance and anxiety sensitivity. Clinical pain evaluated with MPQ.

Physiological and Pain Assessment: HRV recorded via electroencephalogram (High Frequency-HRV, Low Frequency-HRV). Pain threshold and tolerance measured with pressure algometry.

Procedure: Single lab session including questionnaires, 5-minutes rest for HRV, and pain testing. Informed consent obtained; approved by University of Jaén Bioethics Committee.



RESULTS & DISCUSSION

FMS patients showed higher experiential avoidance, anxiety sensitivity (cognitive, social and total), N and alexithymia (factor 1 and 2, and total score) compared to healthy controls. They also exhibited lower pain threshold and tolerance and reduced HRV (HF, LF, Total Power). In FMS patients, experiential avoidance and anxiety sensitivity (except social dimension) correlated positively with N and alexithymia, while cognitive anxiety sensitivity was negatively associated with HRV-HF. Pain tolerance was negatively related to experiential avoidance and physical anxiety sensitivity, and total anxiety sensitivity scores. MPQ pain measures showed similar associations with anxiety sensitivity dimensions. No significant correlations were observed in healthy controls. Mediation analyses indicated that N and alexithymia mediated the relationships between experiential avoidance, anxiety sensitivity and pain tolerance.

Consistent with prior research, FMS patients showed higher experiential avoidance, alexithymia and cognitive anxiety sensitivity compared to controls (Castelli et al., 2012; Cetingok et al., 2022), reflecting cognitive-emotional vulnerability that may amplify pain and distress (Bardeen & Fergus, 2016). They also exhibited higher N, lower pain threshold and tolerance (Reyes del Paso et al., 2011), and reduced HRV (Ho Kang et al., 2016). Experiential avoidance and anxiety sensitivity were positively associated with N and alexithymia, while the cognitive dimension of anxiety sensitivity negatively correlated with pain tolerance and HRV-HF (Bardeen & Fergus, 2016; Cetingok et al., 2022). Mediation analyses indicated that their effects on pain tolerance occur indirectly through N and alexithymia, highlighting the role of emotional regulation in pain modulation (Seto et al., 2018).

CONCLUSION

Our findings indicate that FMS patients have a vulnerable emotional and physiological profile, marked by avoidance of negative emotions and difficulty recognizing or expressing feelings, which is linked to greater pain sensitivity and reduced emotional regulation. Psychological inflexibility and anxiety sensitivity may contribute to pain intensity and maintenance, while N and alexithymia mediate their impact on pain tolerance. Enhancing emotional awareness, acceptance and regulation could improve pain tolerance and overall quality of life in these patients.

FUTURE WORK

Future research should further explore the mechanisms linking emotional vulnerability, interoceptive fear, and emotion regulation with pain processing, as well as evaluate targeted interventions addressing these factors to improve pain management and quality of life in individuals with FMS.

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