E-Poster

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Fear-Avoidance Beliefs, Depression and Anxiety: Assessing their Predictive Role in Pain Outcomes of Digital Care for Chronic Musculoskeletal Pain

Topic: Pain

Dora Janela[1], Xin Tong[2], Anabela C. Areias[3], Diogo Pires[4], Fabíola Costa[5], Hélder Fonseca[6]

[1]*Faculty of Sport, University of Porto, Porto, Portugal*
[2]*Department of Psychology, University of Virginia, Charlottesville, United States*
[3]*Clinical Research, Sword Health, Inc, Draper, United States*
[4]*Instituto Politécnico de Setúbal, Escola Superior de Saúde, Setúbal, Portugal*
[5]*Clinical Research, Sword Health, Inc, Draper, United States*
[6]*Research Center in Physical Activity, Health and Leisure (CIAFEL), Faculty of Sport, Porto, Portugal*

BACKGROUND

Chronic musculoskeletal pain (CMP) affects nearly one in five adults, standing as the leading cause of disability worldwide. Effective treatment is crucial to mitigate its global burden, with psychological factors recognized as key predictors of recovery after in-person rehabilitation. However, psychological factors influence in remote digital care settings remains unknown. This study evaluated the predictive role of fear-avoidance beliefs, depression and anxiety in pain outcomes following a digital care program (DCP) for CMP.

METHODS

Ad-hoc analysis of a decentralized interventional investigation involving patients with CMP who underwent a DCP. This DCP was fully-remote and prescribed by a physical therapist, incorporating real-time biofeedback for asynchronous, continuous monitoring. The program comprised exercise, education, and behavioral strategies. Numerical Pain Rating Scale (NPRS - 11-point) assessed pain through four measures: last pain score, relative pain change, achievement of post-intervention mild pain (NPRS ≤ 3), and pain response (i.e., ≥ 30% change or NPRS ≤ 3). Predictors included baseline scores of fear-avoidance beliefs (Fear-avoidance Beliefs Questionnaire related to Physical Activity — FABQ-PA), depression (Patient Health 9-item Questionnaire — PHQ-9), and anxiety (Generalized Anxiety Disorder 7-item scale — GAD-7). Structural equation models were developed to assess their predictive value on pain outcomes, both unadjusted and adjusted for potential demographic (i.e., age, gender, body mass index, race/ethnicity, and education level) and clinical (i.e., analgesics intake, pain anatomical area, total sessions, and baseline pain) confounders.

RESULTS

Fear-avoidance beliefs and depression were consistent predictors across all pain outcomes after confounders adjustment. Worse pain outcomes were predicted by higher baseline fear-avoidance beliefs (e.g., last pain score: $\beta = 0.15$, SE 0.04, $p < 0.001$; pain response likelihood: OR 0.86, 95% CI 0.78;0.96, $p = 0.001$), and higher levels of depression (e.g., last pain score: $\beta = 0.14$, SE 0.05, $p = 0.007$; pain response likelihood: OR 0.85, 95% CI 0.74; 0.98, $p = 0.008$). Anxiety did not significantly influence any pain outcome. Sensitivity analyses indicated an enhanced predictive power when combining psychological factors with other clinical characteristics.

CONCLUSION

Fear-avoidance beliefs and depression are consistent predictors of pain outcomes in digital rehabilitation for CMP, which is consistent with the reported for in-person rehabilitation settings. These findings underscore the importance of adopting a biopsychosocial approach with targeted interventions addressing these psychological factors to maximize recovery in remote care.

Statement of Disclosures

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Corresponding Author:
Dora Janela
Faculty of Sport, University of Porto, Porto, Portugal
Email: d.janela@swordhealth.com

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