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THE DOCTORAL SCHOOL OF MEDICINE AND PHARMACY

PhD THESIS ABSTRACT

Implications of psychological flexibility processes in chronic musculoskeletal pain

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Background

Chronic musculoskeletal pain is commonly associated with anxiety and depressive disorders, worsening the overall disability level. Regarding the treatment of these medical conditions, clinical trials emphasized the success of multimodal approaches, which generally combine medication, sometimes accompanied by surgical procedures, with physical therapy and psychological interventions.

Among the psychological approaches, cognitive-behavioral therapies (CBT) accumulated a considerable number of clinical studies, proving their effectiveness for managing a wide area of psychopathology, as well as affective disorders related to medical conditions. Particularly, acceptance and commitment therapy (ACT), belonging to the new generation of cognitive-behavioral interventions, presents an increased utility for addressing anxiety and depression in association with chronic pain, due to the integration of techniques like acceptance, mindfulness, cognitive defusion, and the elaboration of action plans based on one's personal values.

Exploring the psychological processes involved in the development of affective disorders co-occurring with chronic pain is an essential step towards individualizing these interventions. Specifically, the scientific literature highlighted the role of personality traits and psychological flexibility in the adjustment to chronic pain, while also underlining the need of further investigations in this direction.

The main objective of this research was to determine the implications of psychological factors for the physical and emotional health status of individuals suffering from chronic musculoskeletal pain.

Study 1 focused on comparatively analysing the efficiency of psychological interventions based on CBT and ACT in fibromyalgia (i.e., a medical condition characterized by pain that is widespread throughout the body, fatigue, sleeping problems and cognitive dysfunction) in comorbidity with disorders from the anxious-depressive spectrum. In this respect, a systematic review and meta-analysis were conducted, based on a pre-registered protocol within the PROSPERO database (CRD42022354119). The analysis was based on the PRISMA 2009 reporting criteria and comprised 17 randomized controlled trials published between 2000-2023, investigating the effect of psychological interventions in fibromyalgia. The results of the meta-analysis showed that CBT and ACT approaches had equivalent effectiveness, considering that a significantly higher number of studies tested the impact of standard CBT. Both psychological interventions proved a moderate effect size for reducing anxiety and depressive

symptoms in fibromyalgia patients, emphasizing the benefits of protocols focusing on specific difficulties, such as insomnia.

Study 2 aimed to explore the impact of a process-based CBT intervention, which was delivered as a single-session as part of the multimodal treatment of emotional disorders associated with chronic pain. The study employed a repeated measures design with no control group. After a screening for the presence of anxiety and depression, a total number of 31 participants diagnosed with rheumatic conditions were included. The initial assessment, the psychological intervention, along with the post-test (T1) were conducted in the in-patient context, during the time when patients were undergoing both medical treatment and physical therapy. At this time, there was a significant reduction of cognitive fusion (i.e., the tendency to perceive thoughts as rules with universal applicability, without questioning their contents), experiential avoidance (i.e., the effort to suppress certain disturbing physical and/or emotional states, despite the negative impact on wellbeing) and dysfunctional behavioral processes. At the telephonic assessment (T2), which was conducted one month after the hospitalization and involved 28 participants, a decrease of subjective pain, anxiety and depression ratings was observed.

Study 3 involved testing the mediating effect of psychological inflexibility in the relation between personality traits and frequent chronic pain outcomes. The study applied a cross-sectional observational design, enrolling 108 individuals with rheumatic conditions. The assessment was conducted by medical professionals, who approached patients and provided explanations related to the fill-in instructions of included scales. In this analysis, psychological inflexibility was operationalized as one's tendency to avoid internal states, such as uncomfortable emotions and physical sensations. The results of the mediation analysis confirmed that psychological inflexibility serves as a mediator conducting the impact of personality on the perception of pain, fatigue, anxiety and depression. Within individual models, psychological flexibility presented a mediating role only in the path from extraversion (i.e., preference for social activities, generally associated with positive affect) and emotional stability (i.e., good emotional management skills, resilience when facing stressors) on anxiety. Specifically, these results indicated that psychological inflexibility could exacerbate certain stable individual patterns, such as behavioral inhibition and withdrawal from social activities, thus contributing to the onset of anxiety.

General discussion

The clinical implications of this research involve the possibility of refining the methods that are currently used for developing assessment and psychological intervention protocols for individuals diagnosed with medical conditions defined by the presence of chronic musculoskeletal pain and psychopathology. Notably, by demonstrating the feasibility of psychological interventions relying on CBT organized in the format of a unique session provides the possibility of obtaining significant results, while also maximizing the limited time resources available within the medical context. Therefore, these condensed approaches could represent promising alternatives to standard-length psychological interventions, which consist of multiple sessions. Moreover, the identification of personality traits and dysfunctional psychological processes allows the personalization of clinical assessment, further optimising the selection of targeted psychological treatment components according to the established patient profiles.