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Factors Influencing Pain Intensity in Adults with Chronic Musculoskeletal Pain

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Abstract

Chronic Musculoskeletal Pain (CMP) is a prevalent and disabling condition that affects a significant portion of the adult population worldwide. This study explores the pain intensity experienced by individuals with CMP and the factors contributing to variations in pain perception. Utilizing a cross-sectional analysis, we assess the demographic and clinical factors influencing pain intensity, with a focus on severity, duration, and comorbidities. Our findings highlight that age, gender, psychological distress, and physical activity level are significant predictors of pain intensity. The study also discusses the impact of chronic pain on quality of life and suggests potential approaches for improving patient outcomes through tailored interventions.

Keywords: Chronic musculoskeletal pain; Pain intensity; Predictors; Quality of life; Psychological distress; Physical activity

Introduction

Chronic Musculoskeletal Pain (CMP) is a widespread condition characterized by persistent discomfort in bones, muscles, tendons, and ligaments, affecting millions globally. It can arise from various etiologies, including osteoarthritis, fibromyalgia, back pain, and tendonitis. CMP is often associated with significant impairments in daily functioning, leading to a decreased quality of life, disability, and psychological distress. The intensity of pain experienced by individuals with CMP is a key factor in determining its impact on their daily lives. Pain intensity is a subjective experience influenced by multiple variables, including age, gender, psychosocial factors, and comorbid conditions. Despite the prevalence of CMP, understanding the various factors contributing to pain intensity remains an area requiring further investigation [1,2]. The aim of this study is to provide a comprehensive analysis of pain intensity within an adult population with chronic musculoskeletal pain. Specifically, we seek to identify the key demographic and clinical factors that correlate with varying levels of pain severity, as well as to explore the broader implications of these findings for management strategies.

Description

Study population

The study included 300 adults aged 18–65 years who have been living with chronic musculoskeletal pain for at least 6 months. Participants were recruited from pain management clinics and primary care settings. Inclusion criteria involved a diagnosis of musculoskeletal pain (e.g., osteoarthritis, chronic lower back pain, fibromyalgia) and a pain history lasting more than six months. Exclusion criteria included individuals with acute pain conditions, neurological disorders, or cognitive impairments that could interfere with the assessment of pain intensity [3].

Pain intensity was measured using the Numeric Rating Scale (NRS), where participants rated their pain from 0 (no pain) to 10 (worst imaginable pain). Demographic data were collected, including age, gender, marital status, employment, and educational background. Clinical factors such as the duration of pain, comorbid conditions (e.g., depression, anxiety), and physical activity levels were also recorded. Psychological distress was assessed using the Hospital Anxiety and Depression Scale (HADS), and physical activity levels were measured with the International Physical Activity Questionnaire (IPAQ). The relationship between these variables and pain intensity was analyzed using correlation coefficients and regression models [4].

Results

The mean pain intensity reported by participants was 7.3 on the NRS, with 32% of participants reporting pain intensity scores above 8. The analysis revealed that several factors significantly influenced pain intensity:

Age

Older individuals reported lower pain intensity, suggesting that chronic pain may become less severe with age.

Gender

Women reported significantly higher pain intensity scores compared to men [5].

Psychological distress

Participants with higher levels of anxiety and depression exhibited greater pain intensity.

Physical activity

Lower levels of physical activity were associated with higher pain intensity, suggesting that sedentary behaviour exacerbates pain perception. Comorbid conditions such as depression and anxiety were identified as strong predictors of increased pain intensity, highlighting the importance of addressing psychological factors in pain management.

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Discussion

The findings of this study underscore the complex and multifactorial nature of pain intensity in chronic musculoskeletal pain populations. The relationship between psychological factors and pain intensity is well-documented, with previous research suggesting that emotional distress, particularly depression and anxiety, can amplify the perception of pain. Our study supports this, as individuals with higher anxiety and depression scores consistently reported more intense pain. This highlights the need for integrated treatment approaches that address both the physical and psychological components of chronic pain [6,7].

The gender differences observed in pain intensity are also consistent with existing literature, which suggests that women are more likely to experience higher pain intensity and more frequent pain episodes than men. The reasons for these differences are multifactorial, including hormonal, biological, and psychosocial factors. Further research is needed to fully understand the underlying mechanisms driving these disparities. Interestingly, the inverse relationship between age and pain intensity in our sample may suggest that individuals may adapt to or develop coping strategies for managing pain over time. This aligns with the notion that pain sensitivity and perception may decrease with age, although further longitudinal studies are necessary to confirm this trend. Physical activity also emerged as a key determinant of pain intensity [8-10]. The findings emphasize the importance of encouraging physical activity in individuals with CMP, as exercise has been shown to reduce pain, improve mobility, and enhance overall quality of life. Future interventions should include tailored exercise regimens as part of comprehensive pain management plans.

Conclusion

Chronic musculoskeletal pain significantly impacts the lives of affected individuals, with pain intensity being influenced by a combination of demographic, psychological, and clinical factors. Our study highlights the importance of considering factors such as age, gender, psychological distress, and physical activity in the management of CMP. Addressing these variables in treatment plans could improve pain management outcomes and quality of life for individuals suffering from chronic musculoskeletal pain. Given the complex and multifactorial nature of pain intensity, a holistic, patient-centered approach that includes both physical and psychological interventions is recommended. Further research should explore longitudinal data and the potential benefits of tailored interventions that address the individual needs of patients with chronic musculoskeletal pain.

Acknowledgement

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Conflict of Interest

None

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