Research Paper

Pain intensity is associated with self-reported disability for several domains of life in a sample of patients with musculoskeletal pain aged 50 or more

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Abstract

Background: Most studies that investigate the impact of pain on function have focused on a particular pain site and use unidimensional measures of disability, making it difficult to know how pain impacts on different areas of functioning and whether different pain characteristics impact differently on function.

Aim: To investigate the relationship between pain characteristics and self-reported disability in patients with musculoskeletal pain aged ⩾50 years.

Methods: Two hundred and four consecutive patients with musculoskeletal pain aged ⩾50 years had their pain assessed (frequency, global pain intensity, pain intensity for the most painful site, location and number of pain sites) and were asked to fill in the World Health Organization Disability Assessment Schedule (WHODAS 2.0) that assesses disability in 6 domains of daily life.

Results: Most patients reported chronic (77.5%), multisite or widespread (55.4%) pain that was always present (90.2%) and of moderate to severe intensity (mean score for global pain intensity = 5.91; SD = 2.02). Mean WHODAS 2.0 total score was 28.06 and SD was 19.86, corresponding to moderate disability. When entering age, sex, level of education, depression, number of comorbid chronic conditions and pain characteristics in a stepwise regression analysis, global pain intensity was the most important predictor for the domains of getting around (adjusted $R^2 = 0.21$, $p < 0.001$), self-care (adjusted $R^2 = 0.14$, $p < 0.001$), household activities (adjusted $R^2 = 0.20$, $p < 0.001$) and work (adjusted $R^2 = 0.34$, $p < 0.001$) and total score (adjusted $R^2 = 0.19$, $p < 0.001$).

Conclusions: Pain intensity seems to be an important predictor of disability for several domains of life, suggesting that pain-related disability should be assessed for these domains.   © 2013 Elsevier Inc. All rights reserved.

Keywords: Musculoskeletal pain; Disability; WHODAS 2.0

Musculoskeletal pain is highly prevalent in the general population internationally across all age groups.[1] The most common sites of musculoskeletal pain include the low back, shoulder and neck, affecting more than 20% of the world population and contributing to the high consumption of health care services.[1,2] Musculoskeletal pain is also associated with disability, leading to changes in the normal performance of a range of activities including moving around, recreational activities, sleep, work and psychological functioning.[3–6] Despite a slight decrease in the prevalence of musculoskeletal pain with age,[7] the extent to which it interferes with daily life has been shown to have a more than twofold increase for individuals 80 years old and older (35.0%) in relation to individuals 50–59 years old (16.0%).[8]

Studies exploring the association between aspects of pain such as frequency, duration, intensity or number of pain sites on older adults revealed that they might impact differently on function. In a population-based study, Eggermont et al[9] found that number of musculoskeletal pain sites and pain severity were associated with poorer performance in a battery of physical performance tests. However, multisite pain was more strongly associated with lower function than pain severity. Hartvigsen et al[3] reported that duration and intensity of back and neck pain were associated with a decrease in physical activities, but duration appeared to be more important than intensity. However, most studies that investigate the association between pain aspects and

function have focused only on one or two aspects of pain for a particular pain site such as the knee, the neck or the back,[3,9,10] making it difficult to compare how the different aspects of pain impact on function. In addition, most studies assess function through the use of physical performance tests including gait velocity, balance, and strength or chair stands.[9,11–14] However, pain may interfere with many life situations and it is difficult to know how a change in balance or chair stands translates into changes in real life situations, where the person interacts with the environment.

A complementary alternative to the physical performance tests is to assess the individual's perception on how pain affects his or her daily life by using self-reported measures. The World Health Organization (WHO) has developed the WHO Disability Assessment Schedule (WHODAS 2.0). This is a generic assessment instrument that links directly to the International Classification of Functioning (ICF) and captures the level of functioning in six domains: i) cognition, ii) mobility, iii) self-care, iv) getting along, v) life activities and vi) participation. Its use allows the characterization of the individual's perceived impact of pain on several daily life domains.[15] Therefore, the instrument supports the investigation of associations between aspects of pain and disability; and, allows a broader characterization of how pain impacts different areas of functioning and whether different pain characteristics impact function differently. This is relevant as a greater insight into which pain characteristics are more strongly associated with changes in specific areas of functioning may provide crucial information to improve pain assessment and management and to prevent the deleterious effect of pain on function. In addition, this study provides empirical evidence of the association between symptoms, such as pain, and function, suggesting that measuring function may be sufficient for capturing the combined effects of conditions on an individual's capabilities without having to capture information on symptoms, body structures and body functions, depending on the purpose of the study.

The aim of this study is to investigate the relationship between pain duration, frequency, intensity, and number of pain sites and self-reported disability in 6 domains of daily life for patients with musculoskeletal pain aged 50 years or older, when controlling for age, sex, level of education, depression and number of comorbid chronic conditions.

Methods

Participants

Participants were consecutive patients attending three different Physical Medicine and Rehabilitation Clinics in the region of Aveiro, Portugal. We believe that the population served by these clinics is heterogeneous as they cover i) both urban and rural areas, ii) traumatic and non-traumatic disorders and iii) different sub-systems within the Portuguese health system. Subjects could be enrolled in the study if the main reason for attending the Clinic was pain related to a musculoskeletal disorder, were ≥50 years old, and were able to give written informed consent. This age cut point was used as a previous study[8] has shown that the extent to which pain interferes with everyday life increases incrementally with age from 50 years old up to ≥80 years old. Subjects with central nervous system disorders or amputation were excluded from participation. The patients were personally invited by the investigators to participate in the study.

The study received Ethical approval from the Service of Bioethics and Medical Ethics, Porto University, Portugal. All participants signed an informed consent prior to their participation.

Procedures

All subjects were interviewed once and underwent the following assessments:

Demographic and health characteristics

Demographic and health characteristics included age, sex, number of years of formal education and presence of chronic non-musculoskeletal disorders. The presence of the latest was ascertained by asking participants whether they had any of the following conditions: i) hypertension, ii) diabetes, iii) cardiovascular disorders, iv) respiratory disorders, v) cancer, vi) other known medical condition or vii) any medical condition for which the nature/medical diagnosis was not known. The total number of reported co-morbid chronic conditions was counted.

Pain intensity, frequency, duration and number of pain sites

Pain intensity was measured using a 10 cm vertical numeric graphic rating scale, with 0 for no pain and 10 for the most severe pain imaginable.

Number of pain sites and pain location were assessed using a body chart and participants were asked to mark on the drawing where pain was felt. The number of pain sites was then counted and categorized as 1) single pain site, 2) two pain sites, 3) 3 or more pain sites but not meeting the criteria for widespread pain and 4) widespread pain. Widespread pain was defined as pain in the left and right side of the body, pain above and below the waist and axial-skeletal pain.[16] Participants with pain in more than one site, were asked to rate both the global intensity of pain and the intensity of the worst pain. Pain frequency during the week before the interview was assessed by asking participants to choose one of the following options: 1) seldom (once a week), 2) occasionally (2–3 times a week), 3) often (more than 3 times a week) or 4) always (all days). To characterize pain duration participants were asked for how long they felt pain and answers were categorized as 1) <6 months and 2) ≥6 months. These