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Disabling musculoskeletal pain in working populations: Is it the job, the person, or the culture?

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ABSTRACT

To compare the prevalence of disabling low back pain (DLBP) and disabling wrist/hand pain (DWHP) among groups of workers carrying out similar physical activities in different cultural environments, and to explore explanations for observed differences, we conducted a cross-sectional survey in 18 countries. Standardised questionnaires were used to ascertain pain that interfered with everyday activities and exposure to possible risk factors in 12,426 participants from 47 occupational groups (mostly nurses and office workers). Associations with risk factors were assessed by Poisson regression. The 1-month prevalence of DLBP in nurses varied from 9.6% to 42.6%, and that of DWHP in office workers from 2.2% to 31.6%. Rates of disabling pain at the 2 anatomical sites covaried ($r = 0.76$), but DLBP tended to be relatively more common in nurses and DWHP in office workers. Established risk factors such as occupational physical activities, psychosocial aspects of work, and tendency to somatise were confirmed, and associations were found also with adverse health beliefs and group awareness of people outside work with musculoskeletal pain. However, after allowance for these risk factors, an up-to 8-fold difference in prevalence remained. Systems of compensation for work-related illness and financial support for health-related incapacity for work appeared to have little influence on the occurrence of symptoms. Our findings indicate large international variation in the prevalence of disabling forearm and back pain among occupational groups carrying out similar tasks, which is only partially explained by the personal and socioeconomic risk factors that were analysed.

1. Introduction

In Europe, musculoskeletal disorders, especially of the back and upper limb, are the biggest single cause of incapacity for work, with direct costs amounting to between 0.5% and 2% of gross domestic product [1]. In many cases they are attributed to mechanical stresses from occupational activities such as heavy lifting and repetitive movements of the wrist and hand, and this has prompted legislation requiring employers to ensure that methods of work are ergonomically sound [8,9].

Unlike many occupational hazards, however, back and arm pain are not a simple consequence of harmful physical exposures. There is good evidence from observational studies that they are also associated with, and predicted by, psychological risk factors such as low mood and somatising tendency (a general tendency to worry about common somatic symptoms) [11,12,18,19]. In addition, they have been linked, although less consistently, with various psychosocial aspects of work, such as low control, support, and job satisfaction [13]. Moreover, there are indications that their prevalence varies among countries, and within countries over time, in a way that cannot be explained by known causes [4,14]. This has led to the hypothesis that their occurrence, and especially their chronicity and resultant disability, are strongly influenced by adverse health beliefs and expectations, acting through a nocebo effect [4].

If correct, this would have important practical implications. Good ergonomic practice reduces physical stresses that can trigger symptoms, and makes tasks easier and more comfortable. However, if presented in the wrong way, it could also promote an exaggerated belief among workers that they are exposed to serious risk of injury, and thereby cause a paradoxical increase in symptoms and disability. An effect of this sort might explain why randomised controlled trials of ergonomic interventions to prevent low back pain have failed to show benefit [7].

Another reason for differences in prevalence among countries might be that rates of disabling musculoskeletal pain are influenced by systems of compensation for work-related illness and injuries, and of financial support for health-related incapacity for work. The possibility of financial benefits from a health problem could be a subconscious stimulus to illness that would not otherwise occur.

The Cultural and Psychosocial Influences on Disability (CUPID) study is an international, multi-centre epidemiological investigation that was established to explore the contribution of culturally determined health beliefs and other psychosocial and economic risk factors to the disability arising from common musculoskeletal complaints [5]. We here present findings on low back and wrist/hand pain, in which we compare the frequency of disabling symptoms among groups of workers carrying out similar physical activities in different cultural and socioeconomic environments, and assess the extent to which variations in prevalence can be explained by putative risk factors, including health beliefs and social security provisions.

2. Methods

The study was conducted by teams of investigators in each of 18 countries (Table 1), data then being forwarded for analysis by a coordinating group in Southampton, UK. Ethical approval was provided by the relevant research ethics committee in each country [5].

2.1. Study sample

Data collection was carried out during 2006–2011, using methods that have been reported in detail elsewhere [5]. The study sample comprised 47 occupational groups (1–4 per country; see Table 1), which fell into 3 categories: nurses (including nursing assistants), office workers, and "other workers" (mainly jobs entailing repetitive tasks with the hands or arms, postal workers being the most common). All participants were aged 20–59 years, and all had been in their current job for at least 12 months. The aim was to recruit at least 200 workers in each occupational group, which would be more than adequate to detect differences in the prevalence of symptoms and disability of the magnitude that was anticipated.