

Clinical Study

The sex-specific interrelationship between spinal pain and psychological distress across time in the general population. Results from the Stockholm Public Health Study

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Abstract

BACKGROUND CONTEXT: Detailed knowledge about the interrelationship between neck pain, back pain, and psychological distress is important from a public health prospective, but missing because of lack of large population-based cohort studies.

PURPOSE: To assess and compare the sex-specific recovery rate of spinal pain and psychological distress as single and comorbid conditions, to describe the interrelationship between these conditions at the baseline (2002) and follow-up 5 years later, and to explore the questions of spinal pain as a risk factor for the onset of psychological distress and vice versa.

STUDY DESIGN: A prospective cohort study.

PATIENT SAMPLE: General population in Stockholm county aged 18 to 84 years, $n=19,774$.

OUTCOME MEASURES: Spinal pain (modified Nordic Pain Questionnaire) and psychological distress (General Health Questionnaire-12).

METHODS: A random sample of the population in Stockholm was approached with postal questionnaires at the baseline and at follow-up.

RESULTS: Comorbidity of spinal pain and distress was twice as common among women (11%) than among men (4%) (relative risk=2.4, 95% confidence interval [CI]: 2.1–2.7). Women also more commonly had spinal pain without psychological distress (women, 20%; men, 14%) and vice versa (women, 15%; men, 12%). Comorbidity makes recovery less probable (women, 26%; men, 27%) than having single conditions of spinal pain (women, 41%; men, 44%) or psychological distress (women, 49%; men, 52%). No statistical significant sex differences were seen. Twenty-four percent of the women and 17% of the men with spinal pain without psychological distress at the baseline had psychological distress at follow-up. Corresponding figures for spinal pain among participants with psychological distress without spinal pain at the baseline were 24% and 20%. Spinal pain

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was a determinant of psychological distress (odds ratio [OR]=2.6, 95% CI: 2.3–2.9) and vice versa (OR=2.0, 95% CI: 1.8–2.2).

CONCLUSIONS: Spinal pain and psychological distress as comorbid and single conditions are common in the general population, especially among women. Comorbidity affects recovery negatively both in men and women. This study confirms the bidirectional association between spinal pain and psychological distress in the general population. © 2014 Elsevier Inc. All rights reserved.

Keywords:

Neck pain; Back pain; Psychological distress; Public health; Sex differences; Cohort study

Introduction

Neck and back pain are common public health problems in numerous countries with a lifetime prevalence of 54% to 80% [1,2]. Neck and back pain often occur concurrently [3].

There is ample evidence, mostly from cross-sectional studies, that chronic neck and back pain are associated with psychological distress [4,5]. Many studies of pain and chronic pain with concurrent psychological distress are concerned with depression [6,7], but anxiety disorders might have a similar relationship with chronic pain [5]. Leijon et al. [3] and Leijon and Mulder [8] reported that the 6-month prevalence of low back pain and neck-shoulder pain rose moderately from 1990 to 2006, but the prevalence of neck and back pain with concurrent psychological distress rose more sharply, about twofold in the general population in the Stockholm County in Sweden. More recent studies suggest that people with depressive symptoms are at an increased risk to develop neck or back pain [9–11], and likewise, those with neck or back pain are also at an increased risk of developing depressive symptoms [12,13]. Moreover, spinal pain and psychological distress seem to increase the negative effect on health when presenting as comorbid conditions [6]. This highlights the importance for more detailed studies to explain the relationship between neck and back pain and psychological distress. Garcia-Cebrian et al. [7] have suggested that the diagnosis and treatment of depression should involve investigating and treating the full spectrum of symptoms, emotional and physical.

Because spinal pain and psychological distress are major public health problems and comorbidity seems to have a negative effect on health [6], more detailed information concerning the course and prognosis for these conditions is required for planning public health intervention and health care [14]. Such research requires large cohorts of the general population to enable the kind of subgroup analyses required to address these questions.

In this study, we have access to information from a large sample of the general population that enables us to describe the sex-specific interrelationship of neck pain, back pain, and psychological distress as single and comorbid conditions. The aims of the study were to assess and compare the sex-specific recovery rate of spinal pain and psychological distress as single and comorbid conditions and to describe the interrelationships between these conditions at the baseline and at follow-up 5 years later. In addition,

we further explored the questions of spinal pain as a risk factor for onset of psychological distress and vice versa.

Methods

Study design

Study design was a prospective population cohort surveyed twice in the year 2002 and again in the year 2007. The study was approved by the Regional Ethical Review Board in Stockholm with number 2009/5:4.

Study population

The Stockholm Public Health Cohort is a prospective study, set within the framework of the Stockholm County Council Public Health Surveys with the aim of collecting data for regional public and occupational health reports. The Stockholm Public Health study is extensive and has been described in detail elsewhere and only the details relevant for the present study are described here [15]. In 2002, hereafter called baseline, 50,067 individuals were sent a postal questionnaire. These individuals were randomly selected after area-stratification from the 1.4 million eligible residents in the Stockholm County aged 18 to 84 years (the source population). Responders ($n=31,182$; 62%) were resurveyed in 2007 with a mixed mode postal/web-based questionnaire, hereafter called the follow-up. Participants to both surveys ($n=23,794$; corresponding to a 76% retention rate) constitute the Stockholm Public Health Cohort. To be able to describe the interrelationships among different combinations of neck pain, back pain, and psychological distress in a valid way, participants having missing values on any of the questions measuring neck pain, back pain, or psychological distress at the baseline or at follow-up were excluded ($n=4,020$ exclusions). Accordingly, the study population was 19,774 participants divided into four subcohorts according to spinal pain and psychological distress at baseline, Table 1. These subcohorts were used to assess and compare the recovery of spinal pain and psychological distress as single and comorbid conditions and to describe the interrelationships between these conditions at baseline and at follow-up 5 years later.

For the analyses of whether spinal pain was a risk factor for the onset of psychological distress and vice versa, two subcohorts were defined within the study population from the four subcohorts described in Table 1; 1) Participants at risk for developing spinal pain at follow-up, $n=14,876$

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