



## Original article

## Sickness absence in patients with arm, neck and shoulder complaints presenting in physical therapy practice: 6 months follow-up

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## ABSTRACT

**Objective:** To describe sickness absence in patients with arm, neck and/or shoulder complaints and to evaluate determinants of sickness absence during 6 months follow-up.**Methods:** A prospective cohort study in physical therapy practice with follow-up measurements at 3 and 6 months. The main outcome measure was the occurrence of sickness absence due to arm, neck and shoulder complaints during 6 months follow-up. Determinants were tested in univariate and multivariate GEE (Generalized Estimating Equations) analysis.**Results:** At baseline 161 patients (33%) reported absence from work. The multivariate analysis showed that self-reported work-relatedness of complaints, previous musculoskeletal trauma, higher severity of complaints at baseline, more somatization and low decision authority at work were associated with sickness absence during the follow-up period.**Conclusion:** In physical therapy practice, social and psychological factors (at work) influence the occurrence of sickness absence in patients with arm, neck and/or shoulder complaints. These factors can be taken into account when developing and evaluating interventions to reduce sickness absence among these patients.

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## 1. Introduction

Many people suffer from arm, neck and shoulder complaints. It is difficult to estimate the precise extent of the problem because the reported point prevalence ranges from 2 to 53% and the 12-month prevalence ranges from 2 to 41% depending on the setting, definition, and classification used (Huisstede et al., 2006). The reported 12-month prevalence in various working populations ranges from 22 to 40% (van Tulder et al., 2007). In a study on the prevalence of arm, neck and shoulder complaints in the general population, the 12-month prevalence was 37%, the point prevalence was 26%, and 19% of the patients reported chronic complaints (Huisstede et al., 2008). Of those with chronic complaints who sought medical care in the past 12 months, 81% visited their general practitioner (GP) and more than half contacted a medical specialist (59%) or physiotherapist (54%) (Huisstede et al., 2008). Among patients with chronic complaints of the arm, neck and/or shoulder, healthcare users reported more sickness absence due to arm, neck and

shoulder complaints (37%) than non-healthcare users (9%) (Huisstede et al., 2008).

Neck- and upper-extremity complaints are an important reason for sickness absence. The annual prevalence of sickness absence due to work-related upper-extremity complaints is reported to be 2–4% of the general workforce (Blatter et al., 2005). Among personnel of the laundry works and dry cleaning establishments, a total of 216 workers reported upper-extremity complaints and 54 workers with these complaints had related sickness absence, which implies that 25% reported sick at least once for these complaints (Ijzelenberg et al., 2004). Among self-employed Dutch farmers, of all claims for sick leave up to 1 year, neck/upper extremity disorders accounted for 8% of the total number of claims; in the group of claims lasting more than 1 year, these latter diagnoses accounted for almost 9% of the total number of claims (Hartman et al., 2006).

In a study among industrial workers from 9 companies in the Netherlands, 22% of those with neck/upper extremity symptoms took sick leave; in that study, sick leave for neck/upper extremity symptoms was significantly associated with being female, living alone, and high job strain (Ijzelenberg and Burdorf, 2005). Similar findings for job strain were reported in a prospective cohort study among a working population in various industrial/service branches

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throughout the Netherlands, where work-related neck flexion and neck rotation, low decision authority and medium skill discretion were prospectively related to an increased risk of sickness absence due to neck pain (Ariëns et al., 2002). However, in the study among personnel of the laundry works and dry cleaning establishments, high levels of physical and psychosocial workload were associated with musculoskeletal complaints but did not seem to influence sickness absence due to these complaints (Ijzelenberg et al., 2004). Also, inconsistent findings were reported with regard to the influence of concurrent low-back pain on sickness absence in people with arm, neck and/or shoulder complaints (Ijzelenberg et al., 2004; Numan et al., 2007). Sickness absence was also examined in a large observational study among patients who consulted their GP with a new complaint or new episode of a complaint at the neck or upper extremity; this latter study showed that heavy physical work increased the risk of sick leave in patients who worry a lot (Bot et al., 2007).

It appears that most studies on sickness absence for arm, neck and/or shoulder complaints are performed in a specific work setting. Moreover, the studies assess only a limited number of risk factors for sickness absence. Most importantly, because only a few studies used a prospective design, the evidence for causal relationships is scarce. There we used a prospective design to answer our research question:

What is the influence of psychological factors, social factors, work-related factors, complaint-specific factors, and demographic factors on the occurrence of sickness absence among people who consult in physical therapy practice for arm, neck and/or shoulder complaints?

As an important aim in physical therapy is to enable patients to perform their daily activities (including work), more knowledge on risk factors associated with the occurrence of sickness absence might contribute to dedicated interventions aimed at avoiding or preventing sick leave in these patients.

## 2. Method

### 2.1. Design and setting

This study is part of a large prospective cohort study on arm, neck and/or shoulder complaints in physical therapy practice. Details on the study design have been published earlier (Karels et al., 2007). Physical therapy practices active in primary care or occupational healthcare (from four provinces in the western part of the Netherlands) participated in this study and recruited consecutive patients.

### 2.2. Participants

Included were patients with complaints of the arm, neck and/or shoulder consulting the participating physical therapists during a 12-month period (August 2001–July 2002). Exclusion criteria were consultation of the physical therapist in the previous 6 months for the same complaint, acute complaints caused by trauma, systemic disorders and/or generalized neurological syndromes, co-morbidity causing severe disability in daily activities, and inability to fill in Dutch questionnaires. Only patients who reported to have paid work were included in the present study.

### 2.3. Questionnaires

Data were collected by means of self-administrated questionnaires. Most of the possible prognostic factors were measured by means of validated questionnaires.

#### 2.3.1. Participant characteristics

Age, gender, educational level, body mass index (BMI, kg/m<sup>2</sup>), and sports participation.

#### 2.3.2. Complaint-specific characteristics

The duration of the complaints at baseline, co-morbidity (musculoskeletal or not), earlier musculoskeletal trauma of arm, neck or shoulder, and the prognosis as assessed by the physical therapist were measured.

Complaints were divided into specific and non-specific. Symptoms were defined as specific if the physical therapist had indicated one of the following diagnoses: rotator cuff syndrome; epicondylitis lateralis/medialis; cubital tunnel syndrome; radial tunnel syndrome; peritendonitis/tenosynovitis flexors or extensors; de Quervain's syndrome; carpal tunnel syndrome; Guyon's channel syndrome; Raynaud's phenomenon and peripheral neuropathy in combination with exposition to hand-arm vibration and osteoarthritis of elbow, wrist or hand (Sluiter et al., 2000). Shoulder capsulitis/frozen shoulder, local arthritis (no RA) and cervical hernia were also defined as specific. All other complaints were classified as non-specific, including the diagnosis radiating neck complaints (Sluiter et al., 2000). If more than one diagnosis was indicated the specific diagnosis was given priority for the classification.

In addition, the complaints were classified as local (the participant indicated only one location on a manikin) or not local (more than one location indicated), and as being work-related or not. Complaints were defined as work-related if the participant had a paid job and gave a positive answer to one of the following questions:

- A. Do the complaints return or worsen during activities at work?
- B. Have you adapted or diminished your activities at work?
- C. Do the complaints diminish after several days off (e.g. during the weekend or vacation)?

#### 2.3.3. Social and psychological factors

The Dutch version of the Tampa Scale of Kinesiophobia (TSK-DV) was used to measure pain-related fear of movement. The questionnaire has 17 items scored from 1 "strongly disagree" to 4 "strongly agree"; the total score ranges from 17 to 68, with a higher score indicating more kinesiophobia (Vlaeyen et al., 1995; Goubert et al., 2000).

Social support was measured with the Social Support Scale (SOS). This Dutch scale is based on the Social Support Questionnaire (SSQ). The scale has 12 items scored from 1 "no, not at all" to 5 "very clearly" and ranges from 12 to 60, with a higher score indicating more social support (Feij et al., 1992; Sarason et al., 1983).

To measure distress and somatization we used two scales of the Dutch Four-Dimensional Symptom Questionnaire (4DSQ). Both scales have 16 items scored from 0 "no" to 4 "very often/continuous" and after recoding 3 and 4 to 2 it ranges from 0 to 32. A higher score indicates more distress or somatisation (Terluin 1998).

Catastrophizing was measured with 6 items and based on the subscale catastrophizing from the Dutch version of the Coping Strategy Questionnaire (CSQ). The scores ranges from 0 to 60 and high scores indicate more catastrophizing (Rosenstiel and Keefe, 1983; Spinhoven et al., 1989, 1994).

All these questionnaires were analyzed in tertiles.

The social and psychological factors at work were measured with the Dutch translation of the core Job Content Questionnaire (JCQ). The following scales were used: quantitative job demands, skill discretion, decision authority, supervisor support, co-worker support, and job insecurity (Karasek et al., 1998). In the analysis, the scores of the JCQ scales (except job insecurity) were analyzed in

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