



Word-related risk factors for incidence of neck pain in a large working population

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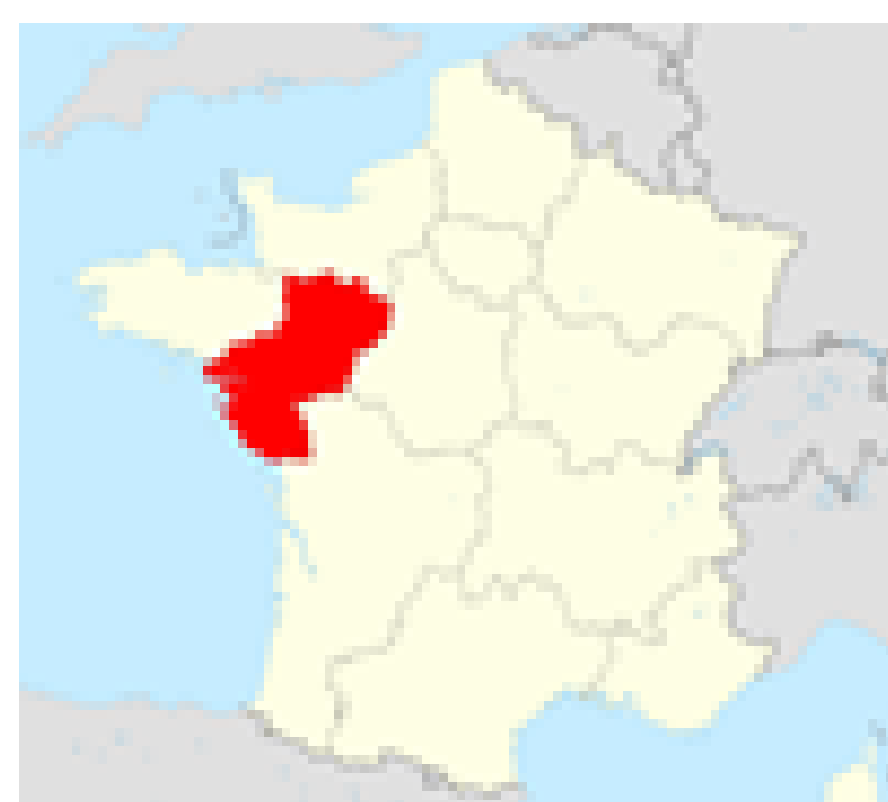
Aim

Non-specific neck pain (NP) is a prevalent issue in occupational health and all its work-related determinants are not already known. NP is assumed to be multifactorial (biomechanical, psychosocial or individual). According to the literature, prolonged static work posture, high quantitative job demands, poor social support and high repetitiveness are the most frequent work-related risk factors associated with NP. Studies concerning individual characteristics are scarce.

Using the data of epidemiological surveillance, the aim of this study was to evaluate the incidence of NP and to identify its work-related factors.

Methods

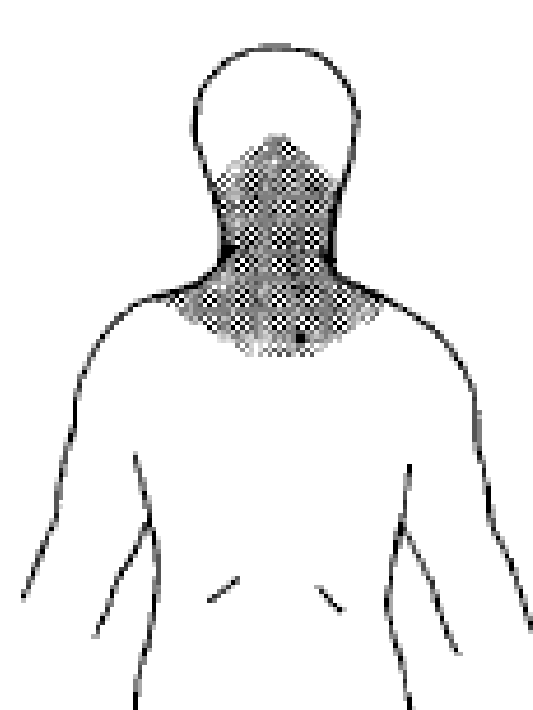
This longitudinal study implemented by the French Public Health Agency was conducted in the Loire Valley region of West-Central France. The economic structure of the region (5% of the French working population) is diversified and similar to that of most French regions.



2002 **Baseline:** 3,710 workers randomly selected by their occupational physician from workers undergoing a mandatory regularly-scheduled health examination
→ self-administered questionnaire: assessment of musculoskeletal symptoms and **individual and work-related risk factors** (biomechanical, psychosocial and organizational)

2007 **Follow-up:** 2,332 workers (included in 2002-2005)
→ self-administered questionnaire: assessment of **musculoskeletal symptoms** and individual and work-related risk factors

The questionnaires included the presence of non-specific NP for at least 8 days during the preceding 12 months using the « **Nordic-style** » questionnaire. A mannequin was used to denote the cervical region.



Analyses were performed for the sample of active workers free from NP at baseline (n=1,510).

Associations between NP at follow-up and work related risk factors at baseline were studied in men and women separately by a binary **logistic regression modeling**, which followed a three-level process:

1. Univariate models
2. Group multivariate models (individual, biomechanical, psychosocial and organizational)
3. Final multivariate model

Results

The study population comprised the **1,510 workers** still active at follow-up and free of NP at baseline (**914 men and 596 women**, mean age = 42.6 ± 9.3 years). They worked mainly in the services industry (59.0%) and manufacturing industry (33.0%) sectors, and more rarely in the construction (6.0%) and agriculture (2.1%) sectors.

More women than men declared NP at follow-up : 14.6% [11.8-17.4] compared to 10.4% [8.4-12.4], $p=0,014$.

Figure I: Multivariate logistic models for incident NP in men (n=883).

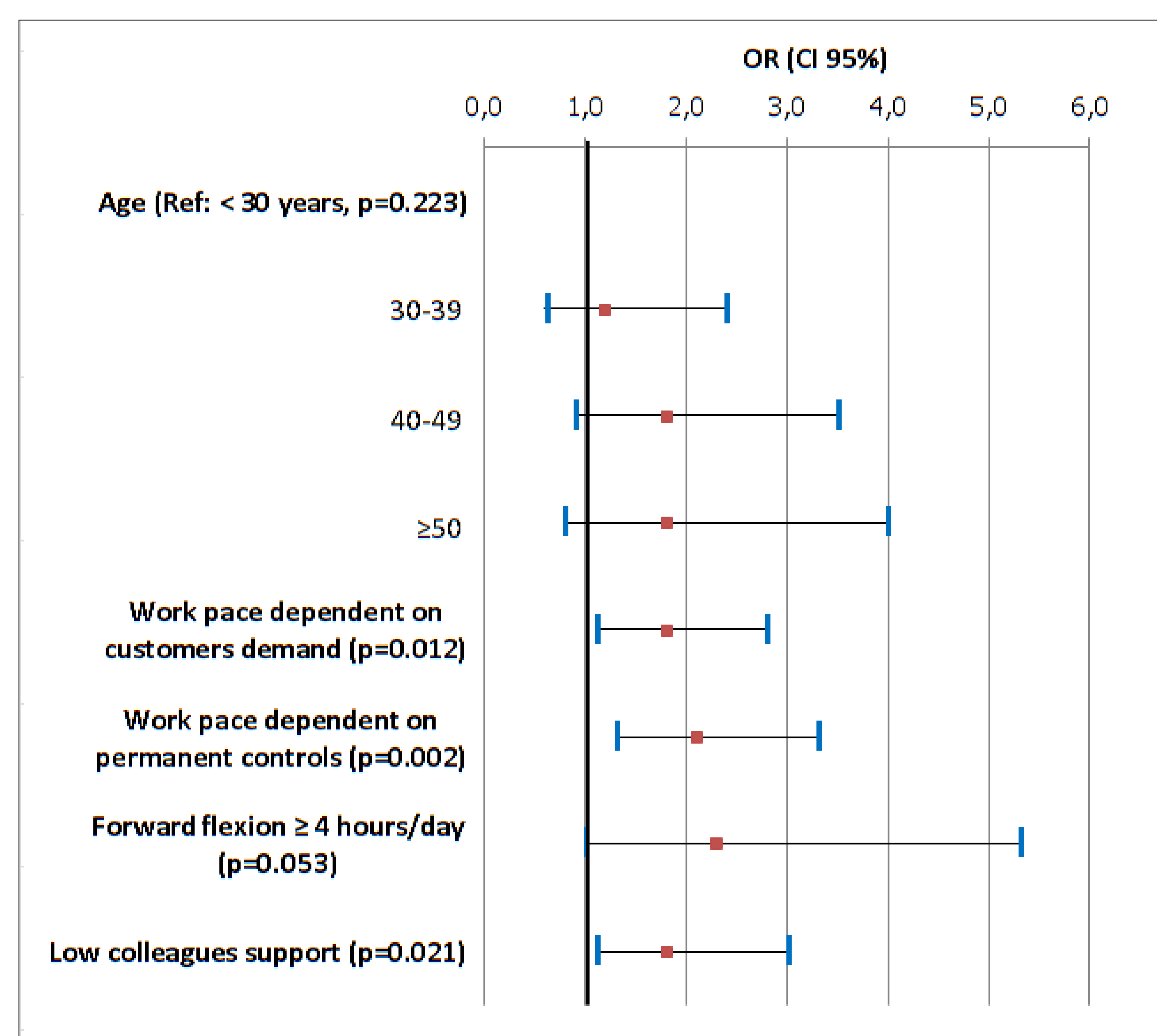
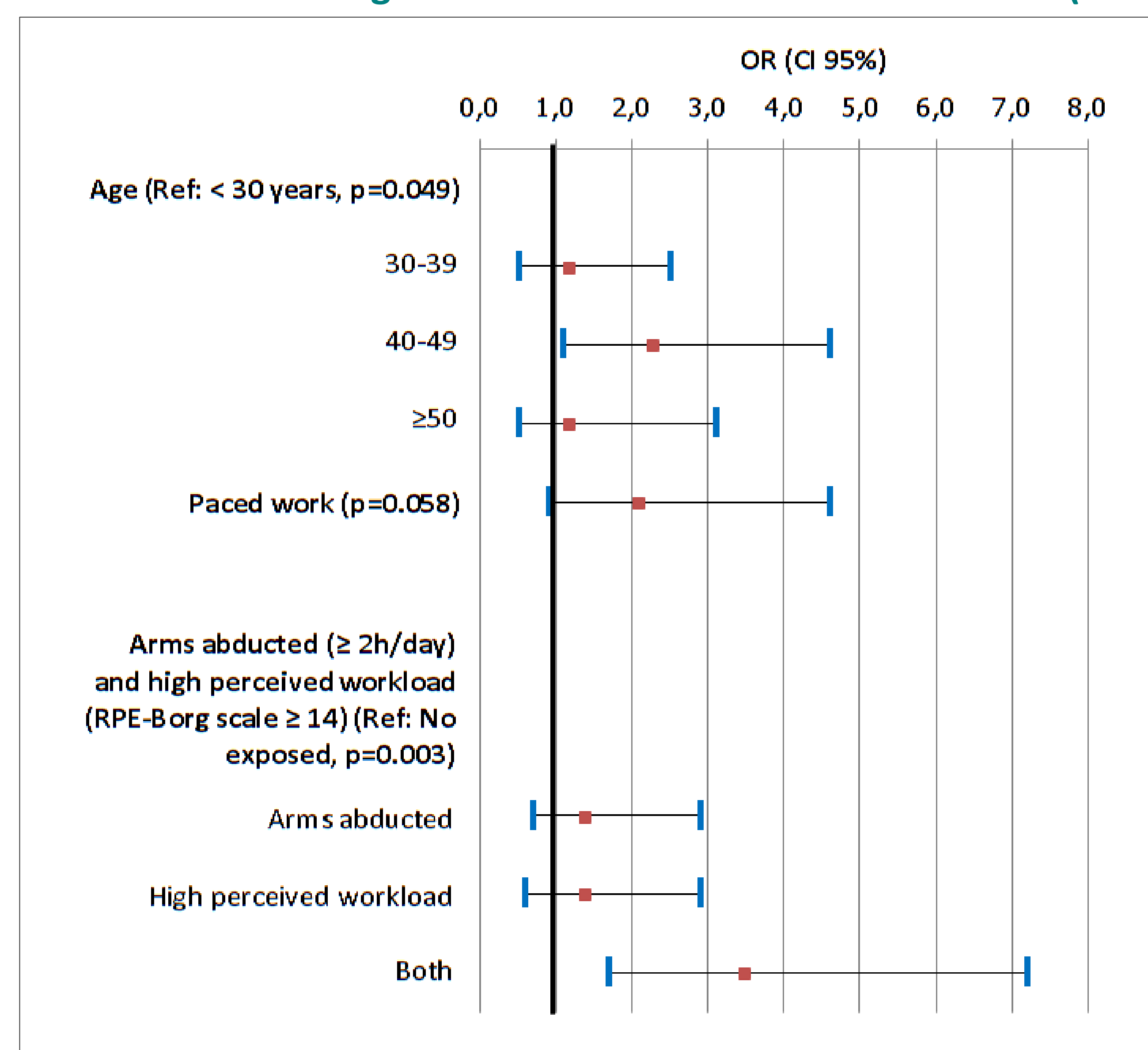


Figure II: Multivariate logistic models for incident NP in women (n=569).



Discussion

In the literature, there is few data on the incidence of NP in populations of workers exposed to different levels of constraints.

This study carried out in a large sample confirms the high incidence of NP in workers and its multifactorial nature and emphasizes the differential impact of risk factors by gender. Organizational and psychosocial factors in both genders, and age and biomechanical charge of the shoulder girdle in women influence incidence of NP.