

# Comorbid subjective health complaints in patients with sciatica: A prospective study including comparison with the general population

Lars Grøvle<sup>a,\*</sup>, Anne J. Haugen<sup>a</sup>, Camilla M. Ihlebaek<sup>b,c</sup>, Anne Keller<sup>d</sup>, Bård Natvig<sup>e,f</sup>,  
Jens I. Brox<sup>g</sup>, Margreth Grotle<sup>e,h</sup>

<sup>a</sup>Department of Rheumatology, Østfold Hospital Trust, Fredrikstad, Norway

<sup>b</sup>Research group of nature, health and quality of life, IHA, Norwegian University of Life sciences, Aas, Norway

<sup>c</sup>Research group of stress, health and rehabilitation, Uni health, Uni Research, Bergen, Norway

<sup>d</sup>Department of Physical Medicine and Rehabilitation, Oslo University Hospital, Ullevaal, Norway

<sup>e</sup>National Resource Centre for Rehabilitation in Rheumatology, Diakonhjemmet Hospital, Oslo, Norway

<sup>f</sup>Department of General Practice and Community Medicine, ASAM, University of Oslo, Oslo, Norway

<sup>g</sup>Section for Back Surgery and Physical Medicine and Rehabilitation, Orthopaedic Department, Oslo University Hospital, Rikshospitalet, Norway

<sup>h</sup>FORMI (Communication Unit for Musculoskeletal Disorders), Oslo University Hospital, Ullevaal, Norway

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## Abstract

**Objective:** Chronic nonspecific low back pain is accompanied by high rates of comorbid mental and physical conditions. The aims of this study were to investigate if patients with specific back pain, that is, sciatica caused by lumbar herniation, report higher rates of subjective health complaints (SHCs) than the general population and if there is an association between change in sciatica symptoms and change in SHCs over a 12-month period. **Methods:** A multicenter cohort study of 466 sciatica patients was conducted with follow-up at 3 months and 1 year. Comorbid SHCs were measured by 27 items of the SHC inventory. Odds ratios (ORs) for each SHC were calculated with comparison to a general population sample ( $n=928$ ) by logistic regression. The SHC number was calculated by summing all complaints present.

**Keywords:** Sciatica; Pain; Psychological stress

**Results:** At baseline, the ORs for reporting SHCs for the sciatica patients were significantly elevated in 15 of the 27 items with a mean (S.D.) SHC number of 7.5 (4.4), compared to 5.2 (4.4) in the general population ( $P<.01$ ). Among those who during the 1-year follow-up period fully recovered from their sciatica, the SHC number was reduced to normal levels. Among those with persisting or worsening sciatica, the number increased to a level almost double that of the general population. **Conclusion:** Compared to the general population, the prevalence of subjective health complaints in sciatica is increased. During follow-up, the number of health complaints increased in patients with persisting or worsening sciatica.

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## Introduction

There is a large body of evidence showing chronic low back pain (CLBP) to be comorbid with other mental and physical conditions [1–5]. It is not known whether the increased comorbidity is a cause, an effect, or just a

concomitant of CLBP. In this study, the term *comorbidity* is defined as coexisting ailments to an index disease [6]. Many of the coexisting conditions seen in CLBP represent subjective health complaints (SHCs) such as headaches, muscular pain, dyspnea, gastrointestinal discomfort, anxiety, and sadness [5,7], and several are referred to as unexplained, functional, or somatization symptoms [8–10]. Most research has focused either on patients with nonspecific CLBP or has not distinguished between patients with specific and nonspecific back pain. This distinction may be important because the mechanisms underlying comorbidity might

\* Corresponding author. Department of Rheumatology, Sykehuset Østfold, 1603 Fredrikstad, Norway. Tel.: + 47 91814029.

E-mail address: lars.grovle@so-hf.no (L. Grøvle).

differ. Sciatica caused by lumbar disc herniation represents the most common cause of specific low back pain. In addition to pain in the lower back, it is characterized by radicular leg pain and varying degrees of weakness and sensory disturbances. The condition can vary from short-lasting, single episodes to a remitting or permanent course over months or years. To our knowledge, the only study to report comorbidity in sciatica is a Finnish population study showing a weak association with cardiovascular, respiratory and mental diseases, and some musculoskeletal conditions [11].

A prospective large population study is recommended to evaluate whether persons with much comorbidity have an increased risk of developing sciatica. On the other hand, if the prevalence of other health complaints in a well-defined disorder such as sciatica is higher than in the general population, it might suggest these symptoms are secondary to sciatic pain and disability. Demonstration of a temporal relationship between the sciatic symptoms and the comorbid symptoms would strengthen this assumption. The majority of research on comorbidity in CLBP has been cross-sectional; few prospective studies exist [3].

The primary aim of this study was to test the hypothesis that the occurrence of SHCs among patients with sciatica is higher than in the normal population. A secondary aim was to test the hypothesis that change in the severity of sciatica is associated with a corresponding change in the number of subjective health complaints.

## Methods

### Setting

This study was part of an observational longitudinal study of patients with sciatica and disc herniation referred to back clinics at four hospitals in South-Eastern Norway. Patients were invited to participate by the clinic staff. Study participation did not involve any specific type of intervention; patients received the usual treatment at each center. Generally, patients were advised to stay active and use pain medication if necessary. In cases of severe symptoms, surgery was performed at the discretion of each center. The protocol was approved by the Regional Committee for Medical Research Ethics and The Ombudsman for Privacy in Research at the Norwegian Social Science Data Services.

### Patients

Patients included in the study were 18 years or older, had radiating pain or paresis below the knee, and had a lumbar disc herniation verified by a magnetic resonance imaging or computed tomographic scan of the corresponding level and side. Exclusion criteria were pregnancy, spinal fracture, tumor, infection, previous surgery in the affected disc, and inability to communicate in written Norwegian. During 2005

and 2006, a total of 466 patients, with a mean age of 43.6 (range 18.0–78.3) years, were enrolled in the study.

### Reference population

The reference population was a historical sample of 1014 persons telephone-interviewed by the opinion poll firm Norwegian Gallup in 2003 [12]. A standard procedure of computer-assisted telephone interviewing was followed. A sample was drawn randomly, using telephone numbers in proportion to the population in each municipality, to ensure a representative sample of the adult population. The respondent in each household was selected by interviewing the one who had the most recent birthday, with five recalls if not reached. To be comparable to the age span of the sciatica cohort, informants aged <18 years and  $\geq 79$  years were excluded, rendering a sample of 928 persons.

### Patient assessment

On the day of inclusion, the administration of the baseline questionnaires was conducted at the clinic and a clinical examination was conducted by a physician or physiotherapist. The clinical examination included: straight leg raising (deemed abnormal if  $<60^\circ$ ), sensibility (abnormal if reduced light touch), reflexes (abnormal if depressed patellar or achilles), and muscular strength (abnormal if reduced single limb stance, tiptoe or heel walking, supine knee or ankle flexion/extension or big toe extension).

Follow-up assessments were conducted at 3 months and at 1 year by mailed questionnaires, which were completed at home and returned in prepaid envelopes. Patients who had not responded 2 weeks after the scheduled date were contacted by telephone or text message. A reminder letter was sent to nonresponders if no reply was obtained after 3 weeks.

### Outcome

SHCs were measured at baseline and each follow-up by the Subjective Health Complaints inventory [13], a list of 29 items of common somatic and psychological complaints. The responders were asked to grade the intensity of each complaint experienced in the last month on a four-point scale: *not at all* (0), *a little* (1), *some* (2), and *severe* (3). Responses to each complaint were categorized into *absent* (0) or *present* (1, 2, or 3). Previous clinical samples that have been compared with the general population [7,14] have shown strong associations between odds ratios (ORs) for *any complaints* (score  $>1$ ) and *substantial complaints* (score  $>2$ ). The SHC number was calculated by summing all complaints present. Two of the items, *low back pain* and *leg pain during exercise*, are closely related to sciatica and were excluded, reducing the maximum obtainable SHC number from 29 to 27. The SHC inventory has been used in various populations and settings [15–19].

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