Joint Bone Spine 78 (2011) 80–84

Available online at ScienceDirect www.sciencedirect.com

Elsevier Masson France EM|consulte www.em-consulte.com

Original article

Fibromyalgia syndrome: Prevalence, pharmacological and non-pharmacological interventions in outpatient health care. An analysis of statutory health insurance data

Kristin Sauer*, Claudia Kemper, Gerd Glaeske

Health Policy and Outcomes Research, Division Health Economics, Centre for Social Policy Research, University of Bremen, Außer der Schleifmühle 35-37, 28203 Bremen, Germany

ARTICLE INFO

Article history:
Accepted 7 May 2010
Available online 31 July 2010

Keywords:
Fybromyalgia
Chronic widespread pain
Health insurance data
Health service research
Epidemiology

ABSTRACT

Objective: Fibromyalgia syndrome (FMS) is a chronic pain condition impacting on quality of life, causing physical and psychological impairment resulting in limited participation in professional and social life. The objective of this study was to assess the prevalence, recommended pharmacological and non-pharmacological interventions of FMS, patients' characteristics and to compare findings to current research.

Methods: About 1,6 Mio patients of a German statutory health insurance company (GEK) in 2007 were analyzed for: (a) the prevalence of FMS (ICD-10: M79.7); (b) and comorbid depression (ICD- 10: F32/33); (c) the recommended pharmacological and non-pharmacological intervention rates; (d) and characteristics of patients associated with being prescribed recommended interventions.

Results: The (a) standardized prevalence of FMS in 2007 was 0.05% in men and 0.4% in women. (b) 51.9% of the patients with prevalent FMS had a comorbid depression in 2007 (88.2% female). (c) 66% of FMS patients received the recommended pharmacological treatment, 59% physical therapy, 6.1% cognitive-behavioural therapy and 3.4% a combination of these (multi-component therapy, MCT). (d) One year increase in age was associated with a 3% decrease in the predicted odds of receiving MCT (95%, CI 0.95–0.99).

Conclusion: The current data indicate an FMS-prevalence that differs from epidemiological surveys and screenings, probably due to methodological differences. Especially females with comorbid depression are affected. The likelihood of receiving MCT is not associated with gender, but with younger age. Yet, the findings seem to indicate insufficient and inadequate treatment, but FMS warrants more research.

1. Introduction

Fibromyalgia syndrome (FMS) is a chronic muscular-skeletal disorder resulting in chronic widespread pain. It is frequently accompanied by psychosomatic conditions such as chronic fatigue, depression, anxiety, sleep disorder, headache or irritable bowel syndrome. While the etiology of FMS remains unclear, the discussion about a classification of this syndrome without a causing factor is in progress [1–2]. The prevalence of FMS varies between 0.66 and 10.5%, with most studies showing a prevalence of about 2%. Those studies show a higher prevalence in women (3.4%) and middle-aged (5%) [3–4].

The long-term course of disease is characterized by severe impairment [5]. Chronic pain is likely to impact on quality of life [6–8]. FMS causes physical and psychological impairment resulting in limited participation in professional and social life [7,9]. FMS patients score similar or significantly lower in physical and mental health status scores (SF-36), which corresponds to less function, compared to patients with rheumatoid arthritis, osteoarthritis, osteoporosis and others [10]. In addition, FMS is associated with a substantially increased risk of medically certified absence due to sickness [11]. Medical utilization is comparable to diabetes mellitus or chronic back pain [12]. From the economic point of view, direct costs are comparable to rheumatoid arthritis and chronic back pain [12–13]. The indirect costs such as disability claims and imputed absenteeism that result from impairment and comorbidity increase the burden of disease considerably [14]. Chronic pain patients often receive expensive clinical diagnostics [15]. However, the costs that arise from investigating the diagnosis of FMS have rarely been evaluated.

Current research shows multidisciplinary pharmacological and non-pharmacological interventions (multi-component therapy [MCT]) such as antidepressants, exercise and cognitive-behavioural therapy as being effective in reducing FMS and related symptoms [16–18]. Physical activity and exercise can improve life quality in FMS patients, increase physical capacity and reduce FMS and related symptoms [17,19–20]. Besides, physical activity appears to increase self-efficacy and self-management [21]. Current studies do

* Corresponding author. Tel.: +49 (0) 421/27749921; fax: +49 (0) 421/27749928.
E-mail address: ksauer@zes.uni-bremen.de (K. Sauer).

1297-319X/$ – see front matter © 2010 Société française de rhumatologie. Published by Elsevier Masson SAS. All rights reserved.
doi:10.1016/j.jbspin.2010.05.003

not support the use of passive physical therapies such as massage therapy or manual lymphatic drainage on FMS-symptoms [5]. To cope with the chronic pain condition, cognitive-behavioural therapy is indicated in order to enable activities of daily living and participation in professional and social life [22].

Despite the impact of FMS on the individual and society, epidemiological data show a wide range of prevalence with the most of 2% and the current health care situation of FMS patients is largely unknown [23].

This explorative study aimed to investigate the epidemiology and rehabilitation of FMS in outpatient health care under the terms of the fact that diagnoses are not based on standardized instruments, but on a classification that is currently discussed and might not be entirely accepted [1–2]. Findings were compared to current publications.

2. Methods

2.1. Database

One million six hundred and forty-six thousand two hundred and eighty-four insured persons of a German statutory health insurance company (Gmünder ErsatzKasse [GEK]) were analyzed for the FMS related ICD-10 diagnosis "M79.7" in the year 2007.

2.2. Procedure

For this study, GEK-data were analyzed for:

- the prevalence of FMS (ICD-10 diagnosis M79.7);
- prevalence of comorbid depression (ICD-10 diagnosis F32/33);
- psychological intervention rates and prescription rates of pharmacological and physical therapy;
- characteristics of patients associated with being prescribed recommended interventions.

Thus, the group of prevalent FMS patients in 2007 was analyzed for receiving at least one prescription of the recommended pharmacological or non-pharmacological intervention (physical therapy or psychotherapy), as well as a combination of these interventions in the same year.

2.3. Prevalence

Prevalence was defined as occurring cases in the year 2007. These cases were selected from outpatient data that contain the diagnoses that were made in outpatient care. Patients were selected that were insured continuously in 2007 and diagnosed with ICD-10 "M79.7" at least once in the same year. Subsequently, the prevalence was directly standardized by using the age and sex distribution of the German population as of December 2007 [24].

2.4. Comorbidity

To estimate comorbid depression in 2007, ICD-10 codes for depressive episodes (F32) and for recurrent depressive episode (F33) were selected [25–26]. Thus, patients that were diagnosed with FMS in 2007 were analyzed for the additional diagnosis of depression.

Treatments: For the analysis of pharmacological interventions, all prescriptions were analyzed that were claimed for the prevalent group in 2007. These prescriptions were analyzed according to their pharmaceutical-group, the Anatomical-Therapeutic-Chemical (ATC) Classification System.

Physical therapy was evaluated for kinds of physical treatments that were prescribed (Table 1). In Germany, physical therapy is prescribed by a physician. The kinds of treatments are according to a national guideline on reimbursement by the statutory health insurance.

Table 1
Kinds of analyzed treatments according to physical therapy and psychotherapy.

Physical therapy	Psychotherapy
Therapeutic exercise	Psychodynamic therapy
Hypo- or hyperthermia	Psychoanalytic therapy
Massage therapy	Behavioural therapy
Manual therapy	Counselling
Manual lymphatic drainage	
Electrotherapy	
Traction therapy	
Spa therapy	

Applied psychotherapy was identified by the Uniform Value Scale that is used by German physicians (Einheitlicher Bewertungsmaßstab, EBM). For the treatment of depression, the treatments seen in Table 1 were selected [27].

2.5. Statistical analysis

Demographics were calculated by analyzing prevalence in patients for sex and age distribution and by standardizing prevalence in 2007 by sex and age. Treatment rates were calculated by analyzing the kinds of treatments FMS patients received at least once a year. Accordingly, sex and age distribution and comorbid depression was evaluated. Multivariate logistic regression analysis was applied to predict the probability of patients receiving a recommended treatment controlling for sex, age and comorbidity. Level of significance was defined at $P< 0.05$. Statistical analysis was performed by using SAS-software Version 9.2.

Regression analysis: The dependent variable was 'MCT' and distinguished between patients receiving MCT and patients that did not. MCT was defined as receiving the recommended pharmacological treatment and behavioural therapy and physical therapy. The predictor variables were sex, age and the comorbidity depression.

3. Results

3.1. Demographics

Prevalence of FMS: There were 2857 insured persons diagnosed with FMS in 2007. Two thousand eight hundred and fifty-seven were female (87%) and 442 were male patients (13%). Standardized prevalence was approx. 0.45% with 0.05% in men and 0.4% in women.

As seen in Fig. 1 (resp. Table 2), the proportion of female patients that are diagnosed with FMS is considerably higher than the male patients' proportion. Especially, the middle-aged groups show this

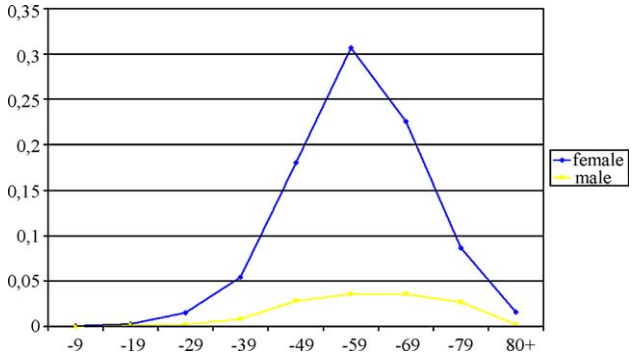

Fig. 1. Proportion of patients diagnosed with fibromyalgia syndrome (FMS) during one year, standardised by sex and age.