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Original Article

Prevalence of chronic head, neck and low back pain and associated factors in women residing in the Autonomous Region of Madrid (Spain)

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ABSTRACT

Objective: To compare the prevalence of chronic headache (CH), chronic neck pain (CNP) and chronic low back pain (CLBP) in the autonomous region of Madrid by analyzing gender differences and to determine the factors associated with each pain location in women in 2007.
Methods: We analyzed data obtained from adults aged 16 years or older (n = 12,190) who participated in the 2007 Madrid Regional Health Survey. This survey includes data from personal interviews conducted in a representative population residing in family dwellings in Madrid. The presence CH, CNP, and CLBP was analyzed. Sociodemographic features, self-perceived health status, lifestyle habits, psychological distress, drug consumption, use of healthcare services, the search for alternative solutions, and comorbid diseases were analyzed by using logistic regression models.
Results: The prevalence of CH, CNP and CLBP was significantly higher (P<0.001) in women (7.3%, 8.4%, 14.1%, respectively) than in men (2.2%, 3.2%, 7.8%, respectively). In women, CH, CNP and CBLP were significantly associated with having ≥3 chronic diseases (OR 7.1, 8.5, 5.8, respectively), and with the use of analgesics and drugs for inflammation (OR: 3.5, 1.95, 2.5, respectively). In the bivariate analysis, the factors associated with pain in distinct body locations differed between men and women.
Conclusions: This study found that CH, CNP and CLBP are a major public health problem in women in central Spain. Women have a higher overall prevalence of chronic pain than men. Chronic pain was associated with a higher use of analgesics and healthcare services.

Prevalencia de dolor crónico de cabeza, cervical y lumbar, y factores asociados, en mujeres residentes en la Comunidad de Madrid (España)

Palabras clave:
Encuesta de salud
Mujeres
Cefalea
Dolor cervical
Dolor lumbar

RESUMEN

Objetivo: Comparar la prevalencia de dolor crónico de cabeza, cervical y lumbar en la Comunidad de Madrid analizando diferencias de sexo, y estudiar factores asociados con la presencia de cada uno de estos dolores en las mujeres.
Métodos: Se analizaron los datos de los sujetos de 16 años o más de edad (n = 12,190) que participaron en la Encuesta Regional de Salud de Madrid en el año 2007. La encuesta incluye los datos recogidos de una población representativa de la región de Madrid que vive en su domicilio. Se analizó la presencia de dolor crónico de cabeza (DC), cervical (DCv) y lumbar (DL). Se investigaron características sociodemográficas, percepción de salud, hábitos de vida, estrés psicológico, consumo de fármacos, uso de servicios sanitarios, uso de terapias alternativas y patologías crónicas asociadas mediante análisis multivariado.
Resultados: La prevalencia de DC, DCv y DL fue significativamente mayor (p <0,001) en las mujeres (7,3%, 8,4%, 14,1%, respectivamente) que en los hombres (2,2%, 3,2%, 7,8%, respectivamente). En las mujeres, el dolor en todas las regiones estuvo asociado con padecer al menos tres afecciones (*odds ratio* [OR]: 7,1, 8,5, 5,8, respectivamente) y con el uso de analgésicos y antiinflamatorios (OR: 3,5, 1,95, 2,5, respectivamente). El dolor en cada una de las regiones mostró diferentes factores asociados en hombres y en mujeres en el análisis bivariado.
Conclusiones: Este estudio encontró que el dolor crónico de cabeza, cervical y lumbar es un problema de salud en las mujeres, ya que presentan mayor prevalencia de dolor que los hombres. El dolor se asocia a un mayor consumo de fármacos y de recursos sanitarios.

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Introduction

Chronic pain (consistent pain for more than 3 months) has a direct impact on quality of life, days off work, and healthcare costs.[1] In the United Kingdom, back pain accounted for £1,632 million in direct expenditure and £10,668 million in indirect costs.[2] Furthermore, the total cost estimated for the 22 million patients with migraine in the US was 14.4 billion US dollars[3] and 27 billion euros for the 41 million patients in Europe.[4] Although the most frequent localization is in the low back,[5] neck and shoulder pain are also common forms of chronic pain.[1,6]

A common finding of these studies was that the prevalence of pain was higher in women than in men.[6–15] Bingefors and Isacson reported a prevalence of back pain of 24.3% in women and 20.9% in men, and a prevalence of headache of 17.6% in women and 6.7% in men.[9]In Spain, only a few studies have investigated the prevalence of pain in adults.[7,10–15] Indeed, only two studies have analyzed the prevalence of chronic pain.[12,15] The first reported a prevalence of back pain (including the neck and low back) of 21.5%.[12] The second studied chronic pain in the upper back and neck and found a prevalence of 14.7%.[15] Again, the Spanish studies found a higher prevalence of pain in women.[7,10–15]

The objectives of this study were *1)* to estimate and compare the prevalence of chronic headache (CH), chronic neck pain (CNP) and chronic low back pain (CLBP) by sociodemographic variables in women and men living in the autonomous region of Madrid, and *2)* to compare differences between women with and without chronic head, neck or low back pain according to self-perceived health status, lifestyle habits, and use of health services or alternative medicine, and to identify which factors are associated with each of the pain locations in women.

Methods

The 2007 Madrid Regional Health Survey

We used secondary data provided by the Madrid Regional Health Survey 2007.[16] This survey included 12,190 adults (6,448 women, and 5,742 men) and was carried out among non-institutionalized adults (aged 16 years and over) living in the autonomous region of Madrid and was undertaken by the Health and Consumers' Department of this region. The population in this area was approximately 6 million in 2007.[17] The Madrid Regional Health Survey includes individuals residing in main family dwellings (households) selected by probabilistic multistage sampling of residents and registered people. Information was collected by home-based personal interviews between March 2007 and June 2007. The detailed methodologies are described elsewhere.[16]

The variables used for this study were created from answers to the questions included in the survey questionnaire. Individuals were classified as having CH, CNP or CLBP if they responded "yes" to the question "Have you suffered from head, neck or low back pain over the previous 12 months?". One question was used for each pain location. As these variables are related to self-reported data, we asked for medical confirmation of the symptoms, particularly headache.

We analyzed the following sociodemographic characteristics: sex, age, marital status, educational level, and place of birth (Spain/not Spain); self-perceived health; number of chronic diseases; lifestyle habits (smoking, alcohol consumption, and obesity); psychological distress; limitation in mobility; drug consumption, and use of healthcare services and the search for alternative solutions for pain as dependent variables.

Among sociodemographic characteristics, similar age categories to those in a previous study[7] were used (16-24 years; 25-44 years; 45-64 years; >65 years); marital status was defined as single, married/cohabiting, widowed, and divorced. Educational level was classified into no studies, primary, secondary and university studies.[16]

Self-perceived health was assessed with the question "What is your perception of your current health status?". Participants described their health status as excellent, good, fair, poor, or very poor. This variable was also dichotomized into two categories: good health (excellent/good) or bad health (fair/poor/very poor). In addition, individuals were asked about problems with mobility, for instance, at work or at home.

Among lifestyle habits, smoking differentiated between current smokers and non-smokers. Alcohol consumption was measured using the question "Have you frequently consumed alcoholic drinks in the last 12 months?". Body mass index (BMI) was calculated from self-reported body weight and height. Individuals with a BMI $\geq$30 were classified as obese.[18]

Self-reported chronic diseases diagnosed by a physician included high cholesterol, high blood pressure, diabetes, osteoarthritis, asthma, fibromyalgia, osteoporosis, chronic bronchitis, varicose veins, allergy, insomnia, menopausal symptoms, depression, thyroid disease, and anxiety. The number of chronic diseases was categorized into "no chronic diseases", "1 or 2", and "3 or more". Specific questions related to drug consumption, use of healthcare services and the search for alternative solutions for pain were also included as follows: "Have you consumed any specific medications in the last 2 weeks for pain management?" and "Have you receive any healthcare during the last 2 weeks?".

Finally, the 12-item General Health Questionnaire (GHQ-12) was used to measure psychological distress. The GHQ-12 consists of 12 items assessing the severity of a mental problem over the past few weeks. The response categories of the GHQ-12 scale were scored according to the method proposed by Goldberg and Williams.[19] Scores are obtained from the sum of responses to the 12 questions, with the first two response options scoring 0 and the last two scoring 1 (0-0-1-1). A cut-off of 3 points or higher indicates a risk of psychiatric distress according to the Spanish validation studies and the recommendations of the instrument's author.[19,20]

Statistical analysis

To analyze the data, we first estimated and compared the prevalence (in percentages with their 95%CI) by the sociodemographic variables of adults classified as having CH, CNP or CLBP according to sex. Secondly, we focused only on women and estimated and compared the prevalence (in percentages with their 95%CI) of the three pain locations according to the study variables. The bivariate association between the variables was assessed using the chi square test. Three multivariate logistic regression models were constructed to determine the variables independently associated with the pain location. We included statistically significant variables in the bivariate analysis, as well as those that were of interest from an epidemiological viewpoint. Variables were eliminated, one at each step, according to their significance in the model (Wald statistic) and considering the model's goodness of fit with regard to the previous step (likelihood ratio test). The effects of interaction among the variables included in the final model were also examined. The results of the logistic models were shown as adjusted odds ratios (OR) with 95%CI.

The analyses were performed using the "svy" (survey command) functions of the STATA program, which allowed us to incorporate the study design and weights in all the statistical calculations. Survey command includes sampling weights, cluster sampling, and stratification of the data to reduce the possibility of error in the analysis. Statistical significance was established at $p < 0.05$. As this analysis was conducted in a de-identified, public-use dataset, no