

A population-based study on chronic pain and the use of opioids in Portugal



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ABSTRACT

Although increasing doubts exist regarding the long-term effectiveness and safety of opioids in patients with chronic pain (CP), most guidelines still recognize opioids as an option in effective management of CP. We aimed to describe the prevalence and factors associated with opioid use in subjects with CP in Portugal and to evaluate satisfaction and self-assessed treatment effectiveness. A nationwide study was conducted in a representative sample of the adult Portuguese population. The 5094 participants were selected using random digit dialing and estimates were adequately weighted for the population. The prevalence of opioid use by subjects with CP was 4.37% (95% confidence interval [CI] 3.4–5.5); and in subjects experiencing CP with and without cancer, it was 10.13% and 4.24%, respectively. Use of strong opioids was reported by only 0.17% of CP subjects. Sex, pain severity and symptoms of depression and anxiety were significantly associated with opioid use; however, in multivariate modeling, only pain-related disability remained significant. No significant differences among users and nonusers of opioids were observed regarding treatment satisfaction and self-assessed effectiveness. Although extremely high rates of use of opioids exist in a few countries, it should not be seen as a ubiquitous problem. Indeed, we showed that in Portugal, as in many other regions in the world, opioids are used much less frequently than in those few countries. Moreover, we did not find significant differences among users and nonusers of opioids regarding satisfaction and self-assessed effectiveness, eventually showing the results to be in line with reports that show doubt about opioids' effectiveness. Further research and particular attention to and continuous monitoring of the trends of use and abuse of opioids worldwide are recommended.

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1. Introduction

Chronic pain (CP) is recognized as a major public health issue with important physical, psychological and familial consequences [2,22,27,28,62,64,79] and with high social and economic burdens [23,28,31,32,38,47,72,74,77,78]. The focus in most guidelines concerning the treatment and management of patients with CP go beyond pain relief to include goals regarding improvement in physical and social functioning and minimization of disability. The adequate treatment of chronic pain is seen as an important individual and societal problem, and those guidelines are evidence

of the effort that has been made to respond adequately to this important issue [9,11,52].

Opioid analgesics have been used for centuries to treat moderate to severe pain; they are accepted and important therapeutic options for those experiencing acute pain and chronic cancer pain [46,48,67,81], and they are still recommended by several chronic noncancer pain (CNCN) treatment guidelines [12,13,15,17,35,42,65,71]. However, increasing reports are shedding doubts on the long-term effectiveness and safety of opioid use in patient with CNCN [4,6,75]. Currently, the available evidence is still insufficient and weak regarding the long-term benefits of opioids for pain relief and even weaker for improvements in physical and social functioning [36,44,50]. Thus, the long-term effectiveness of opioids in patients with CNCN remains an unanswered question. Moreover, there is accumulating evidence of problems of opioid abuse and misuse in some contexts [45,46].

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Although much has been written about the use, abuse and misuse of opioids in some countries with high frequencies of opioid use [5,9,45,52,56–58,67,76], it is important to emphasize that in most countries in the world opioids are used infrequently in general, particularly in patients with CNCP [1,9,56,58,67,80]. This infrequent use of opioids in many contexts seems to be explained primarily by (1) unscientific beliefs, misconceptions and fears; and (2) scarcity of and difficulties and inequalities in access to health care [1,9,26,46,58,67,80].

Only few population-based studies have described in detail the patterns and factors associated with the use of opioids [21,25,51,73], and none have been done in countries where there is infrequent use of opioids. Thus, in the context of a population-based nationwide epidemiological study focused on chronic pain epidemiology and health services utilization [2], the aims of this study were to describe the prevalence, patterns and factors associated with the use of opioids by subjects with CP in the general Portuguese population and to assess the satisfaction and self-assessed effectiveness of treatment by opioid users.

2. Methods

A cross-sectional nationwide epidemiological study was conducted in a representative sample of the Portuguese population, using random digit dialing (RDD) and computer-assisted telephone interviews. Details regarding the study design, measures and methods used in this project have been described elsewhere [2]. The study was approved by an institutional review board and all subjects gave their informed consent for participation.

2.1. Survey sampling methods

A 3-stage stratified sampling design was used, including 2 steps. First, the Mitofsky-Waksberg 2-stage RDD sampling method [30,40] was used to select a random sample of households with landline telephones. Second, within each selected household, 1 resident was randomly selected.

A comprehensive set of measures was implemented so as to prevent nonresponse. Additionally, to correct for sample imbalances and partially adjust for nonresponse and noncoverage bias, a set of weighting procedures was implemented [29,30,40]. The 2 types of weights used were: (1) weights adapted to the sampling design; and (2) poststratification weights that took into account the geographical region and sex and age distributions of the population [34].

Sample size was determined on the assumption of a CP prevalence of 20%, a CI level of 95%, a margin of error of 2%, and a response rate of 50%. Based on these assumptions, we needed a sample of at least 5000 effective interviews.

2.2. Instruments and methods of data collection

Data collection was carried out between January 2007 and March 2008. A structured questionnaire containing 6 sections was used: (1) introductory section presenting study aims and motivation; (2) CP screening questions; (3) assessment of additional pain characteristics; (4) assessment of health services utilization, management and treatment strategies, self-reported effectiveness of interventions, and patients' satisfaction; (5) assessment of pain-related disability and impact on emotional status; and (6) sociodemographic data. Prior to data collection, a pilot study was performed to test the study questionnaire and evaluate its psychometric characteristics.

The standard criteria of the International Association for the Study of Pain (IASP) were used for CP screening [33]. There were 2 screening questions: whether the respondents experienced pain

and how long the pain lasted. Subjects were defined as having CP if they answered positively to the first question, and the pain's duration was ≥ 3 months.

Pain severity was assessed using the Brief Pain Inventory [3,18,19,37,70] and categorized using Serlin et al. classification [39,60]. The persistence pattern of pain was classified as continuous (every day or always) or noncontinuous (less often than every day or always). Open questions about pain location and self-reported pain causes were asked and were coded in predefined lists [54,59]. Pain-related disability was assessed using the Pain Disability Index [3,14,53,68,69]. To assess the impact of pain on mood and emotional status, a 5-item questionnaire using a 5-point frequency numerical rating scale (NRS) was used. An additional question was asked regarding the existence of a prior or current medical diagnosis of depression, depressive disorder or both.

A set of questions assessed use of health services, including pain management and treatment. Respondents were also asked about their satisfaction with pain management and treatment using a 5-point satisfaction NRS. Additionally, if subjects reported not being treated for their pain, they were asked to explain why, and answers were coded using a predefined set of options based on the literature and the pilot study. Respondents were asked if they were using any pain medicine and, if the answer was yes, they were asked what drugs they were using and how frequently. Finally, subjects were asked about the self-assessed effectiveness of pain medicines, using a 5-point effectiveness NRS and about frequency of pain while taking their pain medicines, using a 5-point frequency NRS.

2.3. Statistical analysis

Statistical analysis was performed using the Statistical Package for the Social Sciences v 18.0 (SPSS, Cary, North Carolina, USA). Parameter estimates and CIs were calculated taking into account the sampling design and the appropriate weights previously described.

Descriptive statistics are presented as frequencies and percentages for categorical variables and as mean and standard deviation (SD) for continuous variables or as median and interquartile ranges, as appropriate. When testing the hypothesis, parametric and non-parametric tests were used as appropriate, taking into account type of variables, normality assumptions and number of groups.

To have a more thorough understanding of the factors associated with the use of opioids, univariate and multivariate logistic regression models were used. In the multivariate regression models, goodness-of-fit was assessed by the Hosmer-Lemeshow statistic and test. The discriminative and predictive powers of the model were evaluated by receiver operating characteristic (ROC) curve analysis. The influence of outlier data values on model fit was estimated using leverage statistics, and collinearity was assessed by evaluation of the coefficients correlation matrix. Logistic regression models were also used to estimate the effects of opioid utilization on treatment dissatisfaction and treatment ineffectiveness and to adjust for relevant confounders. Whenever statistical hypothesis testing was used, tests were 2-sided, and a significance level of $\alpha = 5\%$ was considered. Further details regarding methods, measures and analysis performed may be found elsewhere [2].

3. Results

A total of 25,679 telephone numbers were randomly generated using the Mitofsky-Waksberg RDD sampling method. Of them, 10,005 were residential numbers, and there were 6690 household responses. Of those responding, 5094 randomly selected residents agreed to participate. Thus, the response rate was 76% among responding households and 51% among all identified households.

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