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Original Reports

Chronic Pain Prevalence and Associated Factors in a Segment of the Population of São Paulo City

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Abstract: **A cross-sectional epidemiologic survey was performed to determine the prevalence of chronic pain (CP) and to identify associated factors in a random sample of persons 15 years or older from a segment of the population of São Paulo City, Brazil. A total of 1,108 eligible participants were randomly selected, and face-to-face interviews were performed with 826 individuals (74.5%) between December 2011 and February 2012. Chronic Pain Grade, Hospital Anxiety and Depression Scale, and EuroQol-5D were used to verify pain characteristics and the associated signs of psychological distress. A prevalence of 42% (95% confidence interval, 38.6–45.4) was observed for CP, and the participants with CP had an average pain intensity of 5.9 (standard deviation = 1.9) and a pain-related disability of 4.1 (standard deviation = 3.2) on a 0 to 10 scale. Persistent pain was present in 68.6% of those with CP, and 32.8% of the population sample had high-intensity or high-interference pain (Chronic Pain Grade II, III, and IV). Quality of life was significantly worse among the CP individuals. The following factors were independently associated with CP: female gender, age 30 years or older, ≤4 years of education, symptoms consistent with anxiety, and intense physical strain. Indicators of pain severity increased with pain grades.**

Perspective: ***CP is highly prevalent in the city of São Paulo and has a considerable impact on health-related quality of life. Demographic, socioeconomic, and psychological factors are independently associated with this condition.***

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Key words: *Chronic pain, prevalence, cross-sectional studies, disability, quality of life.*

Chronic pain (CP) is defined as pain that persists past the normal time of healing; for nonmalignant pain, 3 months has been suggested as the most convenient point of division between acute and chronic pain.[45] CP is commonly regarded as a multidimensional phenomenon that involves physical, psychological, and sociocultural aspects[3,11,29] and impacts the individual's health and well-being, health care services, and society as a whole.[64] Musculoskeletal disorders have recently been listed as the first cause of "years lived with disability" worldwide[49] and are one of the most common reasons for which people seek medical care.[12] Estimates of the prevalence of CP range from 10.1 to 55.2%, and a weighted mean prevalence of 30.3% has been suggested.[24,31] Cultural aspects and methodologic differences are commonly mentioned as explanations for the wide variation observed across studies.[31,33,67]

It has been suggested that CP should be considered a distinct diagnostic entity and that genetic, psychological, and social factors contribute to the perception and expression of the condition.[59,63] Health measurement instruments are an efficient tool for the standardized identification of attributes of pain, including intensity, disability, persistence, and associated behavioral factors.[29,62,69,70] Additionally, the use of previously validated scales may provide a common ground for comparison between studies.

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Several factors have been associated with CP. The condition is most commonly reported by females and older persons.[6,8,25,33,55,57,67,68] The associated social conditions include unemployment, a lower socioeconomic level, a lower educational level, and employment that requires high physical strain.[4,6,8,25,33] Depression and smoking are 2 psychosocial characteristics mentioned.[2,4,11,15,21,51,57] Other associated factors include obesity, marital status (divorced or separated), and poor self-rated health.[8,25]

The current epidemiologic survey on the prevalence of CP in the most populated city in Latin America may provide useful data for the development of effective health care policies in a region where few population-based studies on this subject have been published.[57,68] The discrimination of specific groups according to the severity of symptoms might aid in targeting interventions to persons at higher risk. The present study was conducted to estimate the prevalence of CP in a segment of the general population of the city of São Paulo and to identify sociodemographic, psychosocial, and occupational factors associated with CP.

Methods

Sampling and Procedures

A cross-sectional, population-based epidemiologic study was conducted in a central part of São Paulo City under the administration of the Brazilian Family Health Program. All of the families that resided in this area were registered at a specific Health Care Unit in the district of Barra Funda. The community comprised 8,052 individuals from 2,549 families. The households were divided into 17 microareas, each comprising a geographically delimited area with approximately 150 families. A community health agent was responsible for visiting the families from each microarea once per month. Population changes noted during those visits were used to update the records, thus providing a reasonably reliable registry. The current study was approved by the ethics and research committees of Faculdade de Medicina da Universidade de São Paulo, Faculdade de Medicina da Santa Casa de Misericórdia de São Paulo, and the São Paulo City Prefecture. Participants provided informed consent. Permission was also obtained for the use of the EuroQol-5D.

A CP prevalence of 25% was expected based on a recent study that was conducted in the city of São Paulo.[10] A sample size of 820 participants was estimated, considering a sampling error of 3% and a confidence interval of 95%.

The participants were selected via random probability sampling. The number of families selected from each microarea was determined in proportion to the relative size of the microarea. Then, the families, identified by numbers, were randomly selected (Excel Sample Test, 2010.11; Microsoft Inc, Redmond, WA). One individual from each family was chosen from a preordained table of family members listed according to age and gender in relation to the head of the household.[34] The inclusion criteria were persons of either gender aged 15 or older. Persons who were unable to participate in the interview for any reason and those who were considered to be dangerous to the interviewers were excluded. Each household was visited at least 4 times at different hours and on different days of the week in an attempt to maximize the chance of locating the person. If contact was not established by the fourth attempt, a new individual from a different family was selected using the same method.

Instruments and Data Collection

The data were collected through domiciliary interviews that were conducted by previously trained university students. A pilot study with 30 subjects was conducted at a university ambulatory clinic to train the interviewers and identify the subjects' perceived difficulties in response to the questionnaire. The interviews consisted of an initial questionnaire, followed by the application of 4 health measurement scales and 1 socioeconomic classification instrument. To gather reliable standardized information on factors associated with CP, validated instruments were used.

CP was measured using the Chronic Pain Grade (CPG), an 8-item questionnaire that evaluates the most bothersome pain in the preceding 3 months.[69] This instrument classifies CP into 4 hierarchical and mutually exclusive grades. The pain intensity is calculated as the average of 3 questions concerning the present, worst, and average pain, as measured on a 0 to 10 scale, ranging from "no pain" to "pain as bad as could be." "Disability days" refers to the number of days for which pain prevented usual activities. The pain-related disability is calculated as the average of 3 questions on pain interference with daily activities, social and family activities, and work, as measured on a 0 to 10 scale, ranging from "no interference" to "unable to carry on any activities." The pain grade is assigned to the following 4 hierarchical and mutually exclusive classes: I, low intensity; II, high intensity; III, moderately limiting; and IV, severely limiting. The psychometric properties of the CPG have been studied in different population settings,[9,23,69] and the CGP has been used in epidemiologic surveys,[23,41,54,74] clinical trials,[66] and studies on risk factors for chronic pain.[15,44]

Health measurement scales with variables that are known to be associated with CP were also included in the present study. All instruments were previously culturally adapted to Brazilian Portuguese, and validation studies were performed on the Brazilian population.

The Hospital Anxiety and Depression Scale (HADS) was developed to identify symptoms that are associated with anxiety and depression in nonpsychiatric individuals.[7,16,75] This scale is divided into anxiety and depression subscales, each consisting of 7 intermingled multiple-choice questions. Four alternatives, weighed 0 to 3, are provided for each question. A score above 8 is considered the optimal threshold for anxiety and depression, with a sensitivity and specificity of approximately .80 for both subscales. The HADS has been extensively used and is frequently applied in population studies. Furthermore, its psychometric properties have been studied in several populations.[7,54] In the current study, anxiety and depression were considered to be

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