

Prevalence of chronic pain and associated factors in a small town in southern Brazil

Prevalência de dor crônica e fatores associados em uma pequena cidade do sul do Brasil

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ABSTRACT

BACKGROUND AND OBJECTIVES: Chronic pain represents a relevant public health problem due to its high global prevalence, high costs of medical care, complexity of the treatment and loss of productive capacity. In Brazil, there are few population-based studies regarding chronic pain and associated factors, thus, the aim of this study was to evaluate the prevalence and factors associated with chronic pain among residents of urban and rural regions of the city of Irani-SC.

METHODS: Cross-sectional population study, with random sampling, stratified by sex and age, in which 409 residents participated. Data was collected by individual interview, sociodemographic and clinical questionnaires, and application of a lifestyle profile instrument.

RESULTS: The prevalence of chronic pain was 56% of the population. The most frequent associated factors were: female sex, being married, living in urban area, older age, more years of work, a higher number of children, fewer vacation periods in the last year, low schooling, higher body mass index, low coffee consumption and a higher number of comorbidities when compared to the group without chronic pain ($p < 0.05$). There was no significant difference between groups regarding lifestyle.

CONCLUSION: Prevalence of chronic pain was high when compared to that found by other studies. Chronic pain was more prevalent in women, married, white, and urban residents. Possible predictors of this condition were age, years of work, number of children, vacation days in the last 12 months, number of cups of coffee consumed per day, body mass index and number of comorbidities.

Keywords: Chronic pain, Lifestyle, Risk factors.

RESUMO

JUSTIFICATIVA E OBJETIVOS: A dor crônica representa relevante problema de saúde pública pela alta prevalência, custo de cuidados médicos, complexidade de tratamento e perda da capacidade produtiva. No Brasil, há poucos estudos populacionais sobre dor crônica e fatores associados, assim, o objetivo deste estudo foi avaliar a prevalência e fatores associados à dor crônica entre os residentes das regiões urbana e rural da cidade de Irani-SC.

MÉTODOS: Estudo transversal populacional, com amostragem aleatória, estratificada por sexo e idade, do qual participaram 409 pessoas. Os dados foram coletados por entrevista individual, questionários sociodemográfico e clínico e aplicação de instrumento de perfil de estilo de vida.

RESULTADOS: A prevalência de dor crônica foi de 56%. Os fatores associados mais frequentes foram: sexo feminino, ser casado, morar em área urbana, idade mais avançada, mais anos trabalhados, maior número de filhos, menos períodos de férias no último ano, baixa escolaridade, consumo de menos xícaras de café por dia, maior índice de massa corporal e maior número de comorbidades quando comparados ao grupo sem dor crônica ($p < 0,05$). Não houve diferença significativa entre os grupos em relação ao estilo de vida.

CONCLUSÃO: A prevalência de dor crônica foi alta quando comparada à encontrada por estudos correlatos. Foi mais prevalente em mulheres, indivíduos casados, brancos e residentes em área urbana. Possíveis preditores desta condição foram idade, anos trabalhados, número de filhos, dias de férias no último ano, número de xícaras de café consumidos por dia, índice de massa corporal e número de comorbidades.

Descritores: Dor crônica, Estilo de vida, Fatores de risco.

INTRODUCTION

The International Association for the Study of Pain (IASP) classifies pain as acute or chronic¹. Chronic pain (CP) is not always associated with organic injury, it can be continuous or recurrent when lasting more than six months and can be considered a disease and not a symptom². As for its prevalence, a study³ estimates that it varies between 10.1 and 55.2% among the world population.

In Brazil, the prevalence of CP is estimated to be around 40% in the adult and elderly population, with predominance among females and differences among regions⁴. A recent study conducted over the internet with more than 20.000 Brazilians has identified that two-thirds of the respondents lived with CP⁵. However, most existing studies are restricted to some Brazilian capitals or metropolitan regions⁶⁻¹⁰.

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Every year, one in ten adults is diagnosed with CP¹¹ and due to its magnitude, complexity and high socioeconomic impact, it is considered by many authors to be a major public health problem^{2,6,12-14}. CP is responsible for the main causes of absenteeism, sick leave, early retirement, labor indemnities and low productivity¹⁵.

CP originates in multiple modifiable and non-modifiable factors and associations that promote its development and persistence¹⁶. Modifiable factors include pain, mental health, smoking, alcoholism, obesity, physical activity practice, sleep, work status and occupational factors. Age, sex, history of trauma, interpersonal violence and heredity are non-modifiable risk factors.

Environmental, physical, mechanical, thermal, or chemical stimuli trigger action potentials at nerve endings that pass through the spinal cord and thalamus until they reach the cerebral cortex, where the painful sensation is perceived and registered^{17,18}.

Thus, CP is characterized by a dysfunction of the somatosensory system over time, either by the presence of neuronal changes in afferent pathways, in the ascendancy to the cerebral cortex and/or in the modulation mechanisms of nociceptive stimuli and in the descending pathways of the central nervous system¹⁷⁻¹⁹.

Central hypersensitization is a process responsible for the abnormal response to nociceptive stimuli and non-painful stimuli, causing an amplification of pain in places that do not generate pain²⁰⁻²². This process may result in changes in pain threshold²⁰⁻²².

Treatment of CP is a challenge in medical practice, since it has multifactorial and complex origin, and therefore requires a comprehensive approach, not only focused in the biological axis, but including physical, psychological and social aspects of pain^{2,14,23}.

Population-based epidemiological studies on factors associated with CP are still scarce in Brazil^{6,8}. Even fewer studies are available covering urban and rural areas. The studies^{24,25}, in Sweden and United States, respectively, both carried out exclusively with the rural population, and the study²⁶, in Canada, observed a higher prevalence of CP among females, single individuals, people with low income, low health status and among residents of rural areas.

The city of Irani has a population of 9,948 inhabitants and is in the west of the state of Santa Catarina, in southern Brazil²⁷. The municipality stands out economically for family farming, pigs, cattle and poultry livestock, furniture industry, timber, commerce and tourism²⁸. The city has 31.6% of residents in the rural area²⁹.

Regarding public health, primary health care in Irani-SC is provided to users of the *Sistema Único de Saúde* (SUS - national public health system) by four *Unidades Básicas de Saúde* (UBS - primary health care units), which work with the *Estratégia Saúde da Família* (ESF - family health strategy), as recommended by the national Ministry of Health³⁰. The population has full coverage of ESF, which maintain periodic home visits by the *Agentes Comunitários de Saúde* (ACS), professionals responsible for the dialogue between public authorities and the community. Thus, all residents are registered in the database of the Municipal Health Secretariat as well as in the one of the Ministry of Health³¹.

Current data show that CP may be more prevalent than systemic arterial hypertension, which affects about 30% of the Brazilian population³². It may be more prevalent than diabetes mellitus, which affects 13 to 15% of Brazilians³³, and more prevalent than

asthma, which affects 10% of Brazilian citizens³⁴. CP may contribute to a low quality of life³⁵, restrict performance of activities of daily living⁹, impair social and family life³⁶, and may generate physical, functional, and mental disabilities²³. Thus, the aim of this study was to assess the prevalence and factors related to CP among residents of urban and rural areas of the city of Irani-SC.

METHODS

Cross-sectional study, conducted with a representative sample of the population of the city of Irani. Sample size was calculated using equation applied to social sciences³⁷. Considering a population where individuals older than 20 years of age add up to 6,334 inhabitants²⁹ and a sampling error of 5%, 376 individuals would be necessary to compose a representative sample.

Thus, a slightly higher number of individuals (n=409) was selected, randomized among the records of the Health Department of the city.

Sample selection was carried out at random, stratified by gender and age, proportional to the data from the last census²⁹. The invitation to participate in the research was made by an ACS or by telephone, asking the citizen to attend the UBS between November 2017 and August 2018.

Individuals who met the following criteria participated in the survey: over 20 years old, full capacity for verbal communication and understanding, living in the city of Irani-SC, registered in one of the UBS of the city. The exclusion criteria were participants who had suffered recent trauma or surgery less than six months before, pregnant women and those who voluntarily expressed the desire not to participate in the study.

Each participant answered an individual interview, conducted by a physician about inclusion and exclusion criteria, demographic and anthropometric data, Lifestyle questionnaire (LS) and visual analogue scale (VAS).

Demographic data such as ethnicity, age, gender, education, marital status, profession, smoking and drinking, time of residence in rural/urban areas, number of children, hours of daily work, vacation days in the last year and consumption of bitter mate were part of the interview.

Body mass index (BMI) was calculated from the measures of weight and height, according to the following formula: BMI=weight (kg)/height² (m). Cut-off points were BMI<18.5 - low weight, BMI 18.5-24.99 - normal weight, BMI 25-29.99 - overweight and BMI≥30 - obesity³⁸.

As a criterion for CP, the presence of this symptom was considered for a period over than six months, on a continuous or recurrent basis^{1,6,8}, and the following question was asked: "Did you experience persistent or recurrent pain during the last 6 months"? Participants were asked to mark their perception of pain on a VAS, which consisted of a 10cm line where zero indicates no pain and 10 stands for unbearable pain³⁹.

To assess LS, the questionnaire of Individual Lifestyle Profile (ILP) was applied⁴⁰, covering five aspects of LS: nutrition, stress control, social relationships, preventive behavior and physical activity. Each of these aspects is related to three questions, in a total of 15 items, with scores from zero (unfavorable LS) to

3 (favorable to maintaining health and well-being). The cut-off point used by the authors⁴¹ was a score ≤ 30 , which was considered as inadequate LS, and values >30 were interpreted as a recommended LS. This instrument has been previously validated in Portuguese and its internal consistency assessed by Cronbach's alpha, which was 0.78⁴⁰.

Participants' electronic medical records were consulted for comorbidities in case he or she did not remember these data. Access was granted by the Municipal Health Department of Irani with authorization from the participant in the Free and Informed Consent Term (FICT).

The research was authorized by the Municipal Health Department of Irani and approved by the Research Ethics Committee of the proposing institution (protocol number 2.381.671).

Statistical analysis

Data were analyzed using SPSS software version 20 for Windows. Normality of data was tested by the Kolmogorov-Smirnov and Shapiro Wilk tests. Qualitative variables were organized in contingency tables with presentation of relative frequency (%) for both groups ("chronic pain presence"

and "chronic pain absence"). Quantitative variables were presented as means \pm standard deviations. Student's *t*-test was employed to compare means of both groups, with two-tailed distribution and 95% confidence. Mann-Whitney U test was used to analyze the ILP data.

The association between pain perception (VAS) and other variables was assessed by Pearson's linear correlation coefficient, classified as follows: 0.0 to 0.19 - very weak correlation; 0.2 to 0.39 - weak correlation; 0.4 to 0.69 - moderate correlation; 0.7 to 0.89 - strong correlation; 0.9 to 1.0 - extraordinarily strong correlation. In all cases, descriptive level α was set at 5%.

RESULTS

The sample of this study consisted of 409 participants, 52.6% of whom were women, predominantly white, married, residing in urban areas, and employed (Table 1). The presence of CP was observed in 56% of the sample.

Patients with CP had an average pain presence of 102 ± 110 months (95% CI 87.75; 116.54), with an average frequency of 4.4 pain episodes per week (± 2.6) (95% CI 4.1; 4.7) and du-

Table 1. Demographic data (n=409)

	Presence of chronic pain		Absence of chronic pain		All		p-value
		95% CI		95% CI		95% CI	
Gender							
Female	33.8	(29.2; 38.6)	18.8	(15.1; 23)	52.6	(47.6; 57.4)	<0.001
Male	22.3	(18.3; 26.6)	25.2	(21; 29.6)	47.4	(42.5; 52.3)	
Ethnicity							
White	41.8	(36.8; 46.6)	31.3	(26.8; 36.1)	73.1	(68.5; 77.3)	0.46
Black	1.2	(0.39; 2.8)	2.2	(1; 4.1)	3.4	(1.8; 5.6)	
Brown	12.7	(9.4; 16.1)	10.3	(7.5; 13.6)	23	(18.9; 27.3)	
Indigenous	0.2	(0.00; 1.3)	0.2	(0.00; 1.3)	0.4	(0.0; 1.7)	
Marital Status							
Single	10.2	(7.5; 13.6)	11.5	(8.5; 14.9)	21.8	(17.6; 25.8)	0.05
Married	34	(29.4; 38.8)	1.4	(0.5; 3.1)	54.8	(49.8; 59.6)	
Stable union	6.4	(4.1; 9.1)	7.6	(5.2; 10.5)	13.9	(10.7; 17.6)	
Separated	1	(0.0; 2.4)	1	(0.0; 2.4)	2	(0.00; 3.8)	
Divorced	1	(0.0; 2.4)	1.5	(0.5; 3.1)	2.4	(1.1; 4.4)	
Widower	3.4	(1.8; 5.6)	1.7	(0.0; 3.4)	5.1	(3.2; 7.7)	
Residence							
Urban	38.1	(33.4; 43)	34.5	(29.8; 39.3)	72.6	(68; 76.8)	0.02
Rural	17.8	(14.2; 21.9)	9.5	(6.8; 12.8)	27.4	(23.1; 31.9)	
Labor status							
Employed	19.1	(15.3; 23.2)	2.2	(1; 4)	41.1	(36.2; 46)	0.06
Unemployed	2.7	(1.3; 4.7)	1.2	(0.0; 2.8)	3.9	(2.2; 6.2)	
Self-employed	18.6	(14.9; 22.6)	12.2	(9.2; 15.7)	30.8	(26.3; 35.5)	
Retired	6.1	(3.9; 8.8)	3.2	(1.7; 5.3)	9.3	(6.6; 12.5)	
Retired at work	7.3	(5; 10.3)	4.1	(2.4; 6.5)	11.5	(8.6; 14.9)	
Sickness benefit	1	(0.0; 2.4)	0.2	(0.0; 1.3)	1.2	(0.4; 2.8)	
Does not apply	1.2	(0.3; 2.8)	0.9	(0.0; 2.4)	2.2	(0.1; 4.1)	

Continue...

Table 1. Demographic data (n=409) – continuation

	Presence of chronic pain		Absence of chronic pain		All		p-value
		95% CI		95% CI		95% CI	
Bitter mate consumption							
Yes	45	(40; 49.9)	32.2	(27.7; 37)	77.2	(72.8; 81.2)	0.09
No	11	(8.1; 14.4)	11.7	(8.7; 15.2)	22.7	(0.18; 27.1)	
Coffee consumption							
Yes	41.3	(36.5; 46.2)	35.9	(31.2; 40.8)	77.2	(72.8; 81.2)	0.06
No	14.6	(11.3; 18.4)	8	(5.6; 11.1)	22.7	(18.7; 27.1)	
Cigarette smoking							
Yes	7.5	(5.2; 10.5)	4.1	(2.4; 6.5)	11.7	(8.7; 15.2)	0.20
No	48.4	(43.3; 53.3)	39.8	(35; 44.7)	88.2	(84.7; 91.2)	
Alcoholic beverages consumption							
Yes	8	(5.6; 11.1)	8.5	(6; 11.7)	16.6	(13.1; 20.5)	0.20
No	47.9	(42.9; 52.8)	35.2	(30.5; 40)	83.1	(79.1; 86.6)	
Does not apply	0.2	(0.0; 1.3)	0	0	0.2	(0.0; 1.3)	

CI = confidence interval; Data are expressed as percent values (%).

ration of crises of 8.2 ± 7.02 hours (95% CI 7.3; 9.1). All these data were statistically significant ($p < 0.005$).

Regarding possible predictors of CP, those evaluated with this condition had the following profile: older age (average 45.7 years), worked longer (average 31.3 years), had more children (average 2.3), fewer vacation periods in the last year (about 8.05 days), lower education (8.17 years), consumed fewer cups of coffee per day (1.5 cups), higher BMI and higher number of comorbidities when compared to group without CP (Table 2).

There was no statistically significant difference regarding the predominance of adequate or inadequate LS between groups (Table 3).

Perception of the average pain intensity in the last 12 months of the 229 respondents with CP was 4.95 ± 2.3 (95% CI 4.65;

5.25, $p = 0.009$) and there was no difference between the residents' means from urban and rural areas ($p = 0.13$), however, pain intensity (VAS) was associated with years of work in a very weak and inverse way among respondents with CP ($r = -0.12$, $p = 0.05$), especially among residents of the urban area ($r = -0.12$, $p = 0.06$ urban area vs. $r = -0.05$, $p = 0.71$ rural area).

Table 3. Individual Lifestyle Profile (ILP) (n=409)

	Presence of chronic pain		Absence of chronic pain		p-value
	%	95% CI	%	95% CI	
Adequate	38.42	(32; 45)	39.44	(32; 46)	0.83
Inadequate	61.57	(54; 67)	60.55	(53; 67)	

CI = confidence interval; Data are expressed as percent values (%).

Table 2. Possible predictors of chronic pain (n=409)

	Presence of chronic pain		Absence of chronic pain		p-value
	Mean \pm SD	95% CI	Mean \pm SD	95% CI	
Age (years)	45.75 \pm 16.34	(43.6; 47.8)	39.59 \pm 16.16	(37.2; 41.9)	<0.001
Hours of work per day	6.81 \pm 3.92	(6.2; 8.3)	7.36 \pm 3.84	(6.78; 7.9)	0.37
Years of work	31.31 \pm 17.19	(28.9; 33.6)	23.44 \pm 16.10	(21; 25.8)	<0.001
Number of children	2.36 \pm 2.19	(2; 2.6)	1.6 \pm 1.58	(1.3; 1.8)	<0.001
Vacation days in the last 12 months	8.05 \pm 14.72	(6.1; 10.9)	13.02 \pm 17.45	(10.4; 15.5)	<0.001
Years of schooling	8.17 \pm 5.18	(7.5; 8.8)	10.01 \pm 4.89	(9.2; 10.7)	<0.001
Bitter mate doses per day	8.74 \pm 10.78	(7.3; 10.1)	6.59 \pm 7.189	(5.5; 7.6;)	1.00
Cups of coffee per day	1.5 \pm 2.14	(1.2; 1.7)	1.6 \pm 1.62	(1.3; 1.8)	0.04
Hours of leisure per week	9.81 \pm 7.76	(8.8; 10.8)	11.23 \pm 9.49	(9.8; 12.6)	0.14
BMI	28.46 \pm 5.77	(27.7; 29.2)	27.30 \pm 5.14	(26.5; 28)	0.05
Weight (kg)	76.9 \pm 17.3	(74.6; 79.1)	76.1 \pm 15.7	(73.7; 78)	0.62
Height (m)	1.64 \pm 10cm	(1.6; 1.65)	1.66 \pm 9	(1.65; 1.68)	0.99
Number of comorbidities	1.79 \pm 1.6	(1.58; 2)	0.52 \pm 0.86	(0.39; 0.64)	<0.001

SD = standard deviation; CI = confidence interval; BMI = body mass index (kg/m^2). Data are expressed as means \pm standard deviations.

DISCUSSION

The prevalence of CP observed in this study was 56%, higher than that found by most previous Brazilian and foreign studies. Study⁶ found a prevalence of CP of 41.4% and other study observed 37.8% of CP patients among users of a UBS¹⁵.

Prevalence closer to that found in the present study concerns international studies: 49% in a rural population in Sweden²⁴, 51.3% in the United Kingdom in a systematic review study⁴², 58% in urban and rural North Dakota (USA)⁴³, and 60% in southeastern Ontario (Canada)²⁶.

Only one Brazilian study found a higher prevalence of CP than that found in the present study. Authors⁷ found CP prevalence of 61.4% among employees of a university in the state of Paraná.

Despite the alarming numbers, a study on prevalence of CP conducted in fifteen primary health care centers located in Asia, Africa, Europe, and the Americas identified that 22% of the research participants had this diagnose⁹. The worldwide prevalence of this condition varies between 10 and 50% according to a systematic review study³. However, the authors of another more recent systematic review, which included 86 studies on the topic, estimated that the prevalence of CP varies from 8.7 to 64.4% worldwide⁴⁴.

Prevalence of CP was higher in females. Corroborating this finding, study⁶ found a prevalence of 55.4% in women, other study¹⁵, in turn, observed a predominance of 87% of CP among 45 women from a UBS.

Study³, comparing 13 studies in different countries, also confirms the higher prevalence of CP among women. In the same way, study⁴⁵ observed a prevalence 2 to 6 times higher in women than in men. These latter authors speculate that this predominance may be due to hormonal variations and genetics and psychological factors that tend to generate a lower threshold and less tolerance for pain in women. Study⁴⁶ add the greater ability of women to discriminate pain.

In the present study, an association was found between age and CP, where the presence of this type of pain was found more frequently in older individuals. Factors that may contribute to the higher prevalence of CP in adults may be related to labor activity, and in the elderly, this would be justified by the aging process, which increases the risk of chronic degenerative diseases^{6,8,16}. This fact is exemplified in study⁴⁷, which reports that about 80% of the elderly Brazilian population has at least one chronic non-communicable disease. It's also possible to speculate those socioeconomic aspects such as education, working conditions and access to health in a poorly developed country like Brazil may impact quality of life and, consequently, the presence of CP in adults and elderly individuals.

Being married was associated with the presence of CP, as previously demonstrated by study⁶ (OR=1.26, $p < 0.001$). This is an apparently contradictory fact, since in the study²⁶ "being married" was a protective factor to CP. Study⁸ did not find association between marital status and the presence of CP in a research with 1.705 elderly people¹⁰, where married individuals had OR=1, separated/divorced OR=1.1 and those who never

married had OR=0.9 to develop CP, of a sample of 2,650 individuals with CP from 39 municipalities in the metropolitan region of São Paulo.

Regarding participants living in urban areas, the prevalence of CP was 38%, higher than that observed among the ones from rural areas. Study²⁶ observed that most of the population lived in rural areas and presented a positive association for the most intense degrees of pain. Authors⁴, also analyzing exclusively the rural population, found a prevalence of CP of 55%, however, in that study the criterion established to assess CP was considered to be pain for more than 3 months, and in the present study the criterion was at least 6 months.

Still regarding rural areas and research on CP, study⁴³ point out to a significant difference of more pain among rural residents in the north of North Dakota, USA. The fact that rural participants apparently are familiar with pain, and believe it's part of their daily lives, associated with the difficulty of expressing their complaints may have influenced the higher prevalence of pain found in relation to the urban area in the present study. Irani-SC, in turn, presented as a major form of economic activity jobs in the cellulose industry, furniture and pork slaughterhouses. This characteristic may have contributed to the higher prevalence of CP in the urban area, due to the occupational risks inherent to industrial activities.

Obesity was positively associated with CP in the present study. Similar data were observed⁴⁸. In a cross-sectional study of 3637 individuals in the United States, the authors demonstrated that obese individuals were more likely to experience pain. Authors⁴⁹ indicated a robust association between obesity and CP. Obesity was also an independent predictor of CP in the study⁶, where the authors evaluated this variable by the abdominal circumference of 968 individuals. The mechanisms for this association are multifactorial and may involve genetics, increased joint overload, physical inactivity, low physical conditioning, in addition to the association between obesity and factors associated with CP, such as depression and other comorbidities^{16,50}.

Coffee consumption was lower in the group with CP. At low dosages, the caffeine contained in analgesic formulations has an adjuvant effect, however it is unlikely that the amount of dietary caffeine alone is enough to cause analgesia⁵¹. On the other hand, dietary caffeine intake could negatively interfere with the effectiveness of caffeine analgesics in its formulation⁵¹. Study⁵² reinforces that caffeine can generate or inhibit headaches, being implicated in the generation of chronic daily headache and headache due to excessive use of analgesics, advising to limit dietary consumption. Thus, coffee consumption in patients with CP in the present study could negatively interfere with the effectiveness of analgesic medications.

Participants with CP had a higher number of comorbidities. Study⁵³ reported that in 26% of the 12.448 respondents from New Zealand two or more physical comorbidities were associated with CP. Other study⁵⁴, in turn, demonstrated that 30% of respondents had coronary disease, 28% diabetics, 31% chronic obstructive pulmonary disease and 29% of respondents with cancer had CP. Study¹⁶ support the results of the present study

and add that comorbidities may influence CP. A point to be discussed is that CP might also be related to the worsening of comorbidities, as well as being the origin of them. It's noteworthy that it's common for people who deal with pain for prolonged periods of time to chronify the painful process through central hypersensitization mechanisms^{20,24}.

Participants with CP had less schooling time than those without this condition. Socioeconomic status, usually determined by education, income, and occupation, is inversely associated with the prevalence of pain in the adult population⁵⁵. Authors²⁵ studied a rural population with CP in the state of Alabama (USA) and observed an average of 12.2 years of study among them. Possibly the presence of CP in people with low education is related to the fact that they have less access to public services, greater placement in manual services, less understanding of their social, health and education rights and are probably more likely to live and work at places with higher levels of violence. The latter is considered a predictor of CP¹⁶.

More working time was a factor in the CP patients of the present study. Authors⁵⁶ demonstrated a greater presence of pain in 123 women with more than dez years of work as CHA in the northeast region of Brazil compared to the group with less years of work. In turn, the study⁵⁷ argued that, in a sample of 3,979 office workers (who worked at least four hours a day), fewer years of work were associated with less pain in the lower limbs compared to individuals with more years of work.

Participants with CP in the present study had more children than those who did not present this condition. Study⁵⁸ found, in 186 residents of a nursing home, a significant association between the number of children and the presence of CP. The average number of children in the group without pain was significantly lower than that of patients with CP⁵⁸. Study⁵⁹ indicated an association between number of children and the presence of neck pain. Finally, a study with 1.118 individuals also associated the number of children with the presence of low back pain⁶⁰. Authors⁵⁹ suggest the hypothesis that children demand more from the human body, both mechanically and psychologically, however studies are still needed for a more consistent understanding of this association.

In the present study, having spent more time on vacation was more related to respondents without pain. There is a scarcity of studies involving the relationship between vacation days and the presence of CP, however, study⁶¹ found a lower intensity ratio of neck pain and low back pain during the vacation period of employees of a hospital in Saudi Arabia.

In the survey conducted in the present study, the frequency of weekly episodes of pain was 4.4 ± 2.6 times a week. Authors¹⁰, in a study with 5.037 respondents from 39 municipalities of the state of São Paulo, indicated that the average duration of pain was 16.1 days per month and other study⁶² pointed out the presence of pain crises 3 to 4 times a week in 37.3% of individuals. A study⁶³ evaluated the intensity of pain by VAS in 458 patients with generalized CP in Israel and observed an average of 7.6 ± 1.8 for pain intensity, contrasting with the present study (4.95 ± 2.3). In a Brazilian study where pain intensity was analyzed by VAS, authors⁶⁴ observed mean values of 6.5 ± 1.9 among

patients with fibromyalgia, 4.2 ± 2.3 in patients with rheumatoid arthritis and 4.3 ± 2.5 in those with osteoarthritis.

Studies relating VAS with generalized CP are still scarce, perhaps because VAS is a one-dimensional assessment of pain. Deeper assessments are necessary, observing the biopsychosocial aspects of CP, which can be reflected, but not discriminated, by this scale.

In the context of primary health care, patients with CP should be advised about family planning, LS changes that contribute to the maintenance of an adequate body weight, care in coffee consumption, and adequate vacation needs. As for social aspects, this study provides data to discuss with the individual with CP the negative aspects of living in urban areas, as well as the importance of continuity and complementarity of schooling.

This study has limitations. The cross-sectional design does not allow defining the causal link between the prevalence of CP and its determinants. The specific focus on the city of Irani-SC associated with the scarcity of data in the literature in several aspects of the research may limit the ability to generalize these findings to a broader context. The one-dimensional pain assessment performed here points to the need for studies with a broader assessment of this condition, considering its biopsychosocial aspects. Despite this, it's a population study on a theme still little explored by the scientific literature, which affects a significant portion of the population, generating important social, work and health consequences.

CONCLUSION

The prevalence of CP was 56% among residents of the city of Irani. This prevalence is high when compared to that found by related studies. CP was a more prevalent condition in women, married, white individuals and urban area residents. Possible predictors of CP were age, years of work, number of children, vacation days in the last year, cups of coffee consumed per day, BMI and number of comorbidities present.

This study stands out for its substantial presentation of the dimension of the painful phenomenon and the originality of its association with various determinants, demonstrating the need for strategies for the prevention and control of CP, in addition to provide data that identify, design and direct interventions relevant to individuals with CP, a very prevalent condition that has an important social, occupational and health impact on people and societies.

AUTHORS' CONTRIBUTIONS

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Data Collection, Writing - Preparation of the original

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Project Management, Methodology, Writing - Review and Editing

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Statistical Analysis, Data Collection, Writing - Review and Editing, Supervision

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