DOI: 10.1590/1809-2950/19011628012021

ORIGINAL RESEARCH

Chronic low back pain in a population of women in Southern Brazil: prevalence and associated factors

Dor lombar crônica em uma população de mulheres do Sul do Brasil: prevalência e fatores associados

Lumbalgia crónica en mujeres de la región Sur de Brasil: prevalencia y factores asociados

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ABSTRACT | This study sought to identify the prevalence of chronic low back pain and its associated factors in a population of women. A cross-sectional population-based study was conducted with 1,128 women aged 20 to 69 and living in the urban area of São Leopoldo, Rio Grande do Sul (Brazil). Chronic low back pain was assessed by the presence of prevailing pain lasting for at least three months, and the investigated factors consisted of sociodemographic, behavioral and anthropometric aspects. The prevalence of chronic low back pain was 46.5% (95%CI: 43.6-49.4). After the adjustment, factors associated with the presence of chronic low back pain were: age, physical activity and nutritional status. We observed an association with a positive linear trend between age and low back pain. Furthermore, physically inactive and obese women presented, respectively, a 31% (PR=1.31; 95%CI: 1.05-1.64; p=0.02) and 25% (PR=1.25; 95%CI: 1.09-1.42; p<0.001) higher probability of presenting low back pain than those with normal body weight. In conclusion, we identified a high prevalence of chronic low back pain in women, and the main associated factors included: advanced age, physical inactivity and obesity.

Keywords | Low Back Pain; Women; Cross-Sectional Studies; Epidemiology.

RESUMO | O objetivo deste estudo foi identificar a prevalência de dor lombar crônica e seus fatores associados em uma população de mulheres. Para isso, realizou-se um estudo transversal, de base populacional, com 1.128 mulheres com idade entre 20 e 69 anos e residentes na zona urbana de São Leopoldo, Rio Grande do Sul. A dor lombar crônica foi avaliada a partir da presença de dor com duração mínima de três meses, e os fatores investigados incluíram aspectos sociodemográficos, comportamentais e antropométricos. Os resultados indicaram uma prevalência de dor lombar crônica de 46,5% (IC95%: 43,6-49,4). Após ajuste, os fatores associados à dor lombar crônica foram: idade, atividade física e estado nutricional. Observou-se uma associação com tendência linear positiva entre idade e dor lombar, assim como uma probabilidade 31% (RP=1,31; IC95%: 1,05-1,64; p=0,02) e 25% (RP=1,25; IC95%: 1,09-1,42; p<0,001) maior de mulheres fisicamente inativas e obesas terem dor lombar, quando comparadas às mulheres fisicamente ativas e com peso corporal normal, respectivamente. Assim, este estudo evidenciou uma elevada prevalência de dor lombar crônica em mulheres, identificando como principais fatores associados a sua ocorrência a idade avançada, a inatividade física e a obesidade.

This study was conducted at Universidade Vale do Rio dos Sinos (Unisinos).
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Descritores | Dor Lombar; Mulheres; Estudo Transversal; Epidemiologia.

RESUMEN | El objetivo de este estudio fue identificar la prevalencia de lumbalgia crónica y sus factores asociados en mujeres. Se realizó un estudio transversal, poblacional, con 1.128 mujeres de entre 20 y 69 años de edad, residentes en la zona urbana de São Leopoldo, en el estado de Rio Grande do Sul (Brasil). Para caracterizar lumbalgia crónica se evaluó la presencia de dolor durante al menos tres meses, y los factores investigados incluyeron aspectos sociodemográficos, conductuales y antropométricos. Los resultados apuntan una prevalencia de lumbalgia crónica del 46,5% (IC95%: 43,6-49,4). Tras el ajuste, los factores asociados a la lumbalgia crónica fueron: edad, actividad física y estado nutricional. Hubo una asociación de tendencia lineal positiva entre la edad y la lumbalgia, así como una probabilidad del 31% (RP=1,31; IC95%: 1,05-1,64; p=0,02) y del 25% (RP= 1,25; IC95%: 1,09-1,42; p<0,001) mayor de dolor lumbar en mujeres físicamente inactivas y obesas en comparación con mujeres físicamente activas y con peso corporal normal. Este estudio evidenció una alta prevalencia de lumbalgia crónica en mujeres y los principales factores asociados fueron la edad avanzada, la inactividad física y la obesidad.

Palabras clave | Dolor Lumbar; Mujeres; Estudio Transversal; Epidemiología.

INTRODUCTION

Given that about 12% of the people who suffer from low back pain report physical limitation lasting for more than one day[1], this disorder is acknowledged as one of the major global health problems. Its consequences may affect one's work, social life and leisure, as well as generate direct costs for the individual and the State[2]. In addition, low back pain figures as one of the most recurring health complications which drive people to medical appointments, being classified as an important cause of functional impairment[3]. Nevertheless, this disorder is often perceived as a trivial health issue when compared to other high mortality disorders[4].

Low back pain is characterized as chronic when it persists for three months or longer[5]. In the United States, the expenses provoked by chronic low back pain have been increasing. Evidence suggests that this stems from the possible raise in chronicity level of this disorder[6]. Additionally, data point towards a raise in chronic low back pain occurrence, which surged from 3.9% to 10.2% within 14 years[7]. In Brazil, studies imply that chronic spine disorders are relevant causes of morbidity among both older and younger adults[8,9]. In this sense, data from the 2013 National Health Survey (Pesquisa Nacional de Saúde) revealed that spine disorders, among other chronic disorders, ranked second in terms of prevalence, affecting roughly 18.5% of the adult population[9]. Similarly, an assessment conducted in southern Brazil depicted an increment in chronic low back pain prevalence, which swelled from 4.2% to 9.6% over a period of eight years[10].

Despite being a physical manifestation of a disorder, low back pain is not only linked to physiological facets. According to some studies, its occurrence is associated with other determinants, including demographic aspects[11-14], socioeconomic aspects[14,15], behavior[13,16] and anthropometrics[12,15,17]. Hence, several population-based investigations attested that chronic low back pain is significantly higher among women than among men[7,12-14,18]. Ergo, the main goal of this study was to identify the prevalence of chronic low back pain and the factors associated with it in a population of women from southern Brazil. Population-based studies on the prevalence of chronic low back pain and its associated factors are crucial because they quantify the magnitude of this disorder. Consequently, these assessments might assist in guiding preventive programs and measures against low back pain occurrence, especially in vulnerable population groups.

METHODOLOGY

A population-based cross-sectional epidemiological study was conducted, comprising a representative sample of women aged between 20 and 69 and living in the urban area of São Leopoldo, Rio Grande do Sul (Brazil). This study was part of a larger research project, meant to assess the living and health conditions of women in a municipality located in the region of Vale do Rio dos Sinos, Rio Grande do Sul (Brazil).

The sample size was calculated based on several health outcomes, choosing the one that required the largest sampling size (i.e., cytopathological examination).

The calculation assumptions were: relative risk of 2.0, confidence level of 95%, statistical power of 80% and a 1:2 ratio of not exposed-exposed for the variable of schooling levels. A rate of 10% was added for possible losses/refusals and 15% for confounding factors control, resulting in 1,281 women. In 2010, the population in São Leopoldo was of 217,189 people, of whom 111,435 were women (51.3%). Of those, 72,775 were aged between 20 and 69, corresponding to 65.3% of the female population.

Based on the average number of people per household (2.99), the proportion of women in the target age group (32.1%), according to the 2010 demographic Census of the Brazilian Institute of Geography and Statistics (Instituto Brasileiro de Geografia e Estatística – IBGE)[19], and the required sample size (1,281), a total of 1,335 households were estimated to be visited. The cluster sampling took place in two stages. Census sectors were chosen in the first stage, whereas the households were selected in the second stage. To ensure broader representativeness, 45 of the 371 existing sectors in São Leopoldo were systematically chosen and, in each sector, 36 households were elected. The inclusion criteria were: being aged 20 to 69 and residing in the elected household. In turn, the exclusion criteria were: being pregnant or bearing physical and/or mental limitations that could impede data acquisition.

The characteristics of the sample were obtained in home visits, conducted by trained interviewers. They took place between February and October 2015, through the application of standardized, pre-coded and pre-tested questionnaires. A pilot study was carried out in a census sector of the urban area of São Leopoldo, which was not included among those chosen for the effective study. The main goal here was to train the interviewers, run a final test of the instruments and improve the coding processes, data entry and initial analysis. The study relied on field supervisors, who arranged weekly meetings with the interviewers in order to deliver the questionnaires and check the progress of the field work. In case any of the elected households refused to participate, two more attempts were made on different days and times. If the refusal persisted, one last attempt was made by one of the supervisors. In addition, a quality control was conducted in 10% of the target sample. For this, a questionnaire with 10 questions of the original instrument was applied, including variables that did not fluctuate in a short time span.

Chronic low back pain occurrence was evaluated based on the presence of pain or discomfort in the region between the last rib and the end of the gluteus[20], with a minimum span of three months[17]. For the sake of a proper identification of the lumbar region, a response card containing an adapted body illustration with emphasis on this region[21] was used. The investigated and explored independent variables which are related to the occurrence of chronic low back pain included sociodemographic, behavioral and nutritional characteristics (anthropometric measure). Additionally, a possible presence of discomfort or limitation when performing daily activities due to low back pain was explored. Questions about the difficulty in performing those basic tasks (such as getting dressed or walking long distances) were used, taking the previous two weeks into consideration.

Sociodemographic variables in this study were: age group (20-29, 30-39, 40-49, 50-59, and 60-69 years), skin color (white and non-white), marital status (single, married, divorced, and widowed), schooling level (≥15, 11-14, 8-10, 5-7, and ≤4 years of study), family income *per capita* expressed in a number of minimum wages (>3 times the minimum wage, from 1 to 3 minimum wages, and <1 minimum wage), and economic classes (A-E) according to the 2011 Criteria of Economic Classification (CCEB) of the Brazilian Association of Research Companies (Abep). The behavior variables were: physical activity outside of work measured by a shortened and adapted version of the International Physical Activity Questionnaire (Ipaq) (physically active – at least 75 minutes a week of intense activity, or 150 minutes a week of mild to moderate activities – and physically inactive), sedentary behavior expressed in a number of hours in a sitting position during the day (<4 hours, from 4 to <6 hours, from 6 to 8 hours and >8 hours), and smoking (non-smoker, quit smoking more than 10 years ago, quit smoking within the past 10 years or less, and smoker). Nutritional status was evaluated by body mass index (BMI), obtained using the formula: weight/height^2, and classified as normal (<25kg/m^2), overweight (BMI ≥25 and <30kg/m^2) and obesity (≥30kg/m^2). Portable scales and set anthropometers were used to measure and calculate body weight and height. Concerning the confirmation of the measurements, the interviewees were asked to remain barefoot and with as little clothing as possible.

The data were fed in EpiData (version 3.1) with double typing in order to correct any errors. Afterwards,

statistical analysis was carried out in SPSS (version 22) and Stata (version 12) so that the investigated characteristics were described by means of absolute and relative frequencies. The association between the outcome and the explored independent variables used chi-square and linear trend tests for categorical and ordinal variables, respectively. The crude and adjusted prevalence ratios (PR) for the associations, with 95% confidence intervals (95% CI), were obtained by Poisson regression with robust variance, contemplating an adjusted and hierarchical regression model in three levels[22]. The first and more distal level included demographic and socioeconomic variables, which could determine the behavioral variables of the second level. The nutritional status variable was included in the third level. Only those variables that obtained a p-value of less than or equal to 10% ($p \leq 0.10$) in the crude analysis were selected and included in the adjusted analysis. This way, only the variables with a statistical significance of less than 5% ($p < 0.05$) remained in the final model. Due to the fact that this was a cluster sampling study, the "svy" command on Stata was used, considering a design effect of 1.08.

Yet, the attributable fractions for modifiable risk factors among the population were calculated (factors related to lifestyle habits, such as smoking, sedentarism and obesity). In other words, we estimated the proportion of chronic low back pain prevalence that could be reduced if exposure to these factors ceased. For this purpose, the Formula $P_e(PR-1)/1+P_e(PR-1)$ was used, where P_e is the proportion of exposure in the population and PR the prevalence ratio (prevalence of the disorder among the exposed/prevalence of the disease among the non-exposed).

RESULTS

We interviewed and included a total of 1,128 women in the final analysis of this study. Among the general characteristics of the sample, we observed a higher percentage of adult women aged between 40 and 49 (24.5%) and a lower percentage of elderly women aged 60 or older (14.5%). Most of the interviewees were white (74.5%), married/in a common-law marriage (63.8%) and with a schooling level of 11 to 14 years of study (32%). They had a family income of less than one minimum wage (60.8%), as well as belonged to the economic class C (53.1%). Conjointly, they were physically inactive (85.6%), remained sit for less than four hours a day (43.1%), did not smoke (59.3%) and were classified as overweight (66.1%) (Table 1).

Table 1. General characteristics of the sample and the prevalence distribution of chronic low back pain according to sociodemographic, behavioral and nutritional characteristics in women from southern Brazil (n=1128)

Characteristic	n (%)	Prevalence of low back pain (%)	p-value
Age (in years)			<0.001*
20-29	216 (19.1)	68 (31.5)	
30-39	244 (21.6)	103 (42.2)	
40-49	276 (24.5)	147 (53.3)	
50-59	228 (20.2)	122 (53.5)	
60-69	164 (14.5)	85 (51.8)	
Skin color			0.730**
White	840 (74.5)	388 (46.2)	
Non-white	288 (25.5)	137 (47.6)	
Marital status			
Single	227 (20.1)	83 (36.6)	0.001**
Married	720 (63.8)	347 (48.2)	
Divorced	110 (9.8)	65 (59.1)	
Widowed	71 (6.3)	30 (42.3)	
Schooling level (in years of study) (n=1126)			<0.001*
≥15	110 (9.8)	36 (32.7)	
11-14	360 (32.0)	148 (41.1)	
8-10	199 (17.7)	102 (51.3)	
5-7	253 (22.5)	129 (51.0)	
≤4	204 (18.1)	109 (53.4)	

(continues)

Table 1. Continuation

Characteristic	n (%)	Prevalence of low back pain (%)	p-value
Family income (in MW) (n=1091)			0.030*
>3	66 (6.0)	23 (34.8)	
1-3	362 (33.2)	163 (45.0)	
<1	663 (60.8)	324 (48.9)	
Economic classification (n=1122)			0.070*
A	44 (3.9)	14 (31.8)	
B	346 (30.8)	149 (43.1)	
C	596 (53.1)	300 (50.3)	
D/E	136 (12.2)	60 (44.1)	
Physical activity			0.010**
Physically active	162 (14.4)	59 (36.4)	
Physically inactive	966 (85.6)	466 (48.2)	
Sedentary behavior (in hours)			
<4	486 (43.1)	239 (49.2)	0.200*
4 to <6	196 (17.4)	100 (51.0)	
6-8	166 (14.7)	70 (42.2)	
>8	280 (24.8)	116 (41.4)	
Smoking (n=1115)			
Never smoked	661 (59.3)	293 (44.3)	0.150**
Former smoker (>10 years)	131 (11.7)	63 (48.1)	
Former smoker (≤10 years)	107 (9.6)	59 (55.1)	
Smoker	216 (19.4)	107 (49.5)	
Nutritional status (n=1122)			
Normal (BMI<25kg/m^2)	380 (33.9)	153 (40.3)	
Overweight (25≤BMI<30kg/m^2)	373 (33.2)	164 (44.0)	<0.001*
Obesity (BMI≥30kg/m^2)	369 (32.9)	206 (55.8)	

MW: Minimum Wages; BMI: Body Mass Index; *Pearson chi-square test for linear trend; **Pearson chi-square test for heterogeneity of proportions.

The prevalence of chronic low back pain among the investigated women was 46.5% (95% CI: 43.6-49.4) and 59% of these women with low back pain reported some degree of discomfort or limitation in daily activities within the last two weeks, such as avoiding walking long distances or having to get dressed slower than usual. In the crude analysis of the data, we observed an association between chronic low back pain and sociodemographic variables, such as age, marital status, education and economic class (Table 1). Regarding behavioral variables, we noticed a significant association between chronic low back pain and physical activity, although there were no significant differences in the relationship between chronic low back pain, sedentary behavior and smoking. On the other hand, nutritional status showed a significant association with the presence of chronic low back pain (Table 1).

After adjustment, the factors that remained statistically associated with the presence of chronic low back pain were: age, physical activity and nutritional status (Table 2). We witnessed an association with a positive linear trend between increasing age and the occurrence of low back pain. Besides, physically inactive women were 31% more likely to suffer from low back pain when compared to physically active women (PR=1.31; 95% CI: 1.05-1.64; p=0.02), as well as obese women were 25% more likely to develop the disorder (PR=1.25; 95% CI: 1.09-1.42; p<0.001) when compared to women with normal body weight (Table 2). Finally, the attributable fractions calculated for factors related to life habits were 22.5% for insufficient physical activity and 7.6% for obesity.

Table 2. Crude and adjusted prevalence ratios (PR) and their respective confidence intervals (95% CI) for the association between chronic low back pain according to nutritional status, sociodemographic and behavioral characteristics in women from southern Brazil (n=1128)

Characteristics	Crude analysis PR (CI 95%)	Adjusted analysis PR (CI 95%)	p-value
Age (in years)[a]			<0.001*
20-29	1.00 (reference)	1.00 (reference)	
30-39	1.34 (1.05-1.71)	1.37 (1.05-1.78)	
40-49	1.69 (1.35-2.12)	1.68 (1.30-2.17)	
50-59	1.70 (1.35-2.14)	1.69 (1.28-2.22)	
60-69	1.65 (1.29-2.11)	1.59 (1.19-2.13)	
Skin color[a]			
White	1.00 (reference)		
Non-white	1.03 (0.89-1.19)		
Marital status[a]			0.120**
Single	1.00 (reference)	1.00 (reference)	
Married	1.32 (1.09-1.59)	1.16 (0.95-1.43)	
Divorced	1.62 (1.28-2.04)	1.27 (0.98-1.64)	
Widowed	1.16 (0.84-1.59)	0.92 (0.63-1.33)	
Schooling level (in years of study)[a] (n=1126)			0.240*
≥15	1.00 (reference)	1.00 (reference)	
11-14	1.26 (0.94-1.69)	0.95 (0.79-1.14)	
8-10	1.57 (1.16-2.11)	1.05 (0.85-1.29)	
5-7	1.56 (1.16-2.09)	0.89 (0.71-1.12)	
≤4	1.63 (1.21-2.20)	0.73 (0.52-1.03)	
Family income (in MW)[a] (n=1091)			0.500*
>3	1.00 (reference)	1.00 (reference)	
1-3	1.29 (0.91-1.83)	1.14 (0.78-1.67)	
<1	1.40 (1.00-1.97)	1.20 (0.82-1.76)	
Economic classification[a] (n=1122)			0.420*
A	1.00 (reference)	1.00 (reference)	
B	1.35 (0.86-2.12)	1.22 (0.82-1.82)	
C	1.58 (1.02-2.46)	1.28 (0.84-1.95)	
D/E	1.39 (0.87-2.22)	1.12 (0.68-1.85)	
Physical Activity[b]			0.020**
Physically active	1.00 (reference)	1.00 (reference)	
Physically inactive	1.32 (1.07-1.64)	1.31 (1.05-1.64)	
Sedentary behavior (in hours)[b]			0.560*
<4	1.00 (reference)	1.00 (reference)	
4 to <6	1.04 (0.88-1.22)	1.06 (0.90-1.25)	
6-8	0.86 (0.70-1.05)	0.91 (0.73-1.13)	
>8	0.84 (0.71-0.99)	0.96 (0.80-1.15)	
Smoking (n=1115)			
Never smoked	1.00 (reference)		
Former smoker (>10 years)	1.09 (0.89-1.32)		
Former smoker (≤10 years)	1.24 (1.03-1.51)		
Smoker	1.12 (0.95-1.31)		
Nutritional status (n=1122)[c]			<0.001*
Normal (BMI<25kg/m^2)	1.00 (reference)	1.00 (reference)	
Overweight (25≤BMI<30kg/m^2)	1.09 (0.92-1.29)	1.00 (0.86-1.16)	
Obesity (BMI≥30kg/m^2)	1.39 (1.19-1.62)	1.25 (1.09-1.42)	

MW: Minimum Wages; BMI: Body Mass Index; *Wald test for linear trend; **Wald test for heterogeneity of proportions; [a]Variables adjusted to each other; [b]Adjusted for age, marital status, schooling level, family income and economic classification; [c]Adjusted for age, marital status, schooling level, family income, economic classification, physical activity and sedentary behavior.

DISCUSSION

We identified a high prevalence of chronic low back pain in a group of women from southern Brazil, ascertaining advanced age, physical inactivity and obesity as the main factors for this disorder. The prevalence of chronic low back pain in the investigated sample was of 46.5% (95% CI: 43.6-49.4). Similar results were obtained by a survey conducted in the same city, which found a prevalence of chronic low back pain of 49.3% (95% CI: 44.4-54.2)[13] within 775 women who had health insurance. On the other hand, studies have also verified lower prevalences of chronic low back pain among women, including studies conducted in Pelotas, Rio Grande do Sul (11.7%; 95% CI: 10.0-13.4)[18], in Salvador, Bahia (14.8%; 95% CI: 12.8-16.7)[23], and in Portugal (14.1%; 95% CI: 12.7-15.3)[12]. Although they are characterized as cross-sectional and population-based studies, the prevalence differences in comparison to this study can be explained by the discrepancy in questions used in the interviews and the inaccuracy in the participants recollection[13,24].

Among the results observed in this study, we found that the main factors associated with chronic low back pain amid women were old age, physical inactivity and obesity. In that sense, previous studies on the topic have shown similar significant associations connecting chronic low back pain with advancing age[12-14], physical inactivity[12,15,25] and obesity[12,14,15].

In regard to advancing age, chronic low back pain prevalence tends to increase linearly between the ages of 30 and 60[4,10]. This association has a biological plausibility since the human organism inevitably suffers a decline in its functions over the time, leading to several mechanical-degenerative changes in anatomical structures[16]. Not only that, but a review study on the topic also found a peak in low back pain prevalence at the age of 60, with a consequent decrease in this occurrence in individuals aged 60 or more[4]. According to the study, many factors could explain this decline. These include, for example, possible cognitive impairment, decreased pain perception or greater pain tolerance at this stage of life[4]. However, due to population aging, the number of individuals with low back pain tends to increase substantially in the coming decades[1].

Regarding physical activity, we noticed that physically inactive women presented a 31% higher probability of experiencing low back pain when compared to physically active women. In this sense, a Swedish study conducted with 5,798 individuals aged between 25 and 79 pointed towards the low level of exercise at leisure activities as one of the main factors associated with chronic low back pain[15]. A similar result was yielded by a survey held in Portugal with 10,661 adults. In this case, an inverse association between physical activity and chronic low back pain[12] was observed. Nonetheless, there are assessments in the literature which did not find a significant association between low back pain and physical activity[14,26]. There might be a possible U-shaped association between physical activity level and chronic low back pain[25]. Hence, there is an inconsistency in the association between physical activity and chronic low back pain in the scientific literature, as well as an absence of physiological explanation, possibly due to a reverse causality bias in this association or even limitations which are inherent to studies with cross-sectional design[26]. In this study, we evidenced that 85.6% of the investigated women were physically inactive, indicating a possible lack of public spaces in the city aiming at the practice of physical activity. Therefore, public health prevention programs and measures should consider these results and gender-related aspects of low back pain.

For its part, the nutritional status obtained through anthropometric indices can be used to predict potential health risks. Among the results of this study, we remarked that obese women presented a 25% higher probability of undergoing low back pain, when compared to women with normal nutritional status. Previous studies conducted in different populations also found a significant association between obesity and low back pain, showing that a higher BMI is an important factor associated with the higher low back pain occurrence[11,12,14,15,17]. In this direction, a study conducted with 3,182 adults from Pelotas identified a significant linear increase trend in the prevalence of chronic low back pain equivalent to an increase in BMI[14]. According to the authors, such an association can be attributed to a probable "extra load" that the musculoskeletal structure is forced to sustain, altering the biomechanical balance of the body[14]. Still, a possible increase in body fat content in the region of the paravertebral muscles can decrease vertebral mobility, changing the intervertebral disc nutrition and leading to a height reduction[12,17].

Within the strengths of this study, we highlight the analysis of a representative population-based sample, encompassing women aged 20 to 69 and residing in the urban area of São Leopoldo, Rio Grande do Sul State, given the fact that there were only a few population-based surveys in Brazil aiming at investigating the occurrence of low back pain and its association with risk factors in

women. For that matter, we explored the potential factors associated with the occurrence of chronic low back pain in a vulnerable population group. Consequently, we support the importance of conducting studies on this topic, specifically with women, since the scientific literature has been pointing towards a significantly higher prevalence of chronic low back pain in this population group[1,10-12,14,24]. This difference may result from the double workday (work/home) to which women may be subjected, or from differences in their anatomical body structure (bone density, muscle resistance and joint stability) compared to men[13,14,26]. Another positive aspect of this study that must be highlighted concerns the use of previously validated instruments to measure the occurrence of chronic low back pain outcome – that is, pain lasting for at least three months – and its association with various sociodemographic, behavioral and nutritional characteristics, through a multivariable analysis model. In addition to this, we used a response card with an illustration of the body region to adequately identify the lumbar region. This tool was widely used in previous studies on the occurrence of chronic low back pain[13,14,18,25].

On the other hand, some limitations concerning this study should be mentioned. For instance, the comparison with studies that used different instruments for the assessment of low back pain may be limited, since the chronic low back pain prevalence in the women investigated in this study was higher than in other population-based studies, even though the associated factors were similar. Besides, since this is a report of pain in the last three months, there might be errors by virtue of recollection inaccuracy and memory bias. It is also necessary to take into account a possible limitation in the comparison between studies that explored the association of physical activity and chronic low back pain. This is necessary because they are not standardized and they classify physical activity as a dichotomous issue or at different levels of intensity. Additionally, as this study has a cross-sectional design, it is not possible to establish a causal relationship between the explored factors and the outcome of chronic low back pain, since the associations may result from reverse causality bias. Nonetheless, the results of this research can support the formulation of new hypotheses to be tested by longitudinal studies. Finally, the intensity of low back pain was not evaluated, preventing the consideration of this aspect in the development of intervention and prevention proposals in the investigated population.

CONCLUSION

This study identified a high prevalence of chronic low back pain in women, stating advanced age, physical inactivity and obesity as the main factors associated with its occurrence. Considering that chronic low back pain can cause important limitations in daily activities, it is necessary to know the risk factors that are related to life habits in order to establish strategies and policies for Health Promotion and Prevention.

ACKNOWLEDGEMENTS

Maria Teresa Anselmo Olinto received a research productivity grant from CNPq/PQ (processes n. 307257/2013-4 and 307175/2017-0). Anderson Garcez received a junior postdoctoral fellowship from CNPq / PDJ (process n. 161302/2019-0).

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