

Prevalence of musculoskeletal disorders in an area covered by a Health Center

Prevalência de sintomas de doenças musculoesqueléticas na área de abrangência de uma Unidade Básica de Saúde

Prevalencia de síntomas de enfermedades musculoesqueléticas en el área de cobertura de una unidad básica de salud

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Abstract

Introduction: Musculoskeletal disorders are important causes of physical disability that result in reduced quality of life and increased health costs. **Objective:** To describe the prevalence of symptoms of musculoskeletal disorders and the physical disability associated with these symptoms in an area covered by a Health Center in a peri-urban area. In addition, we analyzed the association of the presence of these symptoms with demographic characteristics and the most frequent chronic diseases. **Methods:** This is a cross-sectional study carried out in the area covered by a peri-urban Health Center between August 2018 and February 2019 in which people over 15 years of age, randomly selected, were interviewed using the questionnaire from the first phase of the Community Oriented Program for Control of Rheumatic Diseases (COPOCORD), translated and validated into Brazilian Portuguese. They were also asked about the presence of other chronic diseases and medications in use. In addition, each participant's weight, height, and waist circumference were measured. The first two were used to calculate the body mass index. **Results:** A total of 372 people were interviewed with a mean age of 46.5 (± 18.3) years, 212 (57%) of whom were women. The prevalence of individuals who presented symptoms of musculoskeletal disorders in the last seven days was 66.4% (95%CI: 61.6–71.2). About half (48.6%) and almost a quarter (24.2%) interviewees reported symptoms of moderate and severe intensity, respectively. The most affected sites were the back (50.27%), the neck (34.9%), and the knees (30.64%). The vast majority, 209/247 (84.6%), reported pain in more than one site and 129/247 (52.2%) reported physical impairments in activities of daily living. Of the 247 individuals, 102 (41.3%) sought medical assistance, the majority, 70/102 (68.6%), at the Health Center. Individuals with symptoms of musculoskeletal disorders had a significantly higher mean age and body mass index than individuals without these symptoms. They also had a higher frequency of diabetes and anxiety and/or depression. However, in multivariate analysis, no variable was an independent predictor of symptoms of musculoskeletal disorders. **Conclusions:** Symptoms of musculoskeletal disorders are prevalent in this community and primary health care must be prepared for the management and rehabilitation of people with these disorders.

Keywords: Musculoskeletal diseases; Primary Health Care; Epidemiology.

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Resumo

Introdução: As doenças musculoesqueléticas (DMSQ) são causas importantes de incapacidade física que tem como consequências a redução da qualidade de vida e o aumento dos custos em saúde. **Objetivo:** Este estudo teve o objetivo de descrever a prevalência de sintomas de DMSQ e da incapacidade física associada a esses sintomas em uma área de abrangência de uma Unidade Básica de Saúde (UBS) da família em área periurbana, além de analisar a associação da presença desses sintomas com características demográficas e doenças crônicas mais frequentes. **Métodos:** Estudo transversal realizado na área de cobertura de uma UBS periurbana entre agosto de 2018 e fevereiro de 2019 na qual pessoas com mais de 15 anos, selecionadas ao acaso, foram entrevistadas com o questionário da primeira fase do *Community Oriented Program for Control of Rheumatic Diseases* (COPOCORD), traduzido e validado para a língua portuguesa. Essas pessoas também foram questionadas quanto à presença de outras doenças diagnosticadas e a medicações em uso. Além disso, foram realizadas medidas de peso, altura e circunferência da cintura de cada participante — os dois primeiros foram utilizados para cálculo do índice de massa corporal (IMC). **Resultados:** Neste estudo foram entrevistadas 372 pessoas com média de idade de 46,5 ($\pm 18,3$) anos, sendo 212 (57%) do sexo feminino. A prevalência de indivíduos que apresentaram sintomas de DMSQ nos últimos sete dias foi de 66,4% (IC95% 61,6–71,2). Cerca da metade (48,6%) e quase um quarto (24,2%) dos participantes relataram sintomas de intensidade moderada e severa, respectivamente. Os locais mais afetados foram as costas (50,27%), o pescoço (34,9%) e os joelhos (30,64%). A maioria, 209/247 (84,6%), relatou dor em mais de um local e 129/247 (52,2%) relataram limitação física para atividades da vida diária. Das 247 pessoas, 102 (41,3%) procuraram assistência médica, a maioria, 70 (68,6%), na UBS. Indivíduos com sintomas de DMSQ tinham média de idade e de IMC significativamente mais elevada que indivíduos sem esses sintomas, além de apresentarem maior frequência de diabetes e ansiedade e/ou depressão. No entanto, em análise multivariada, nenhuma variável foi preditora independente de sintomas de DMSQ. **Conclusões:** Sintomas de DMSQ são prevalentes nessa comunidade e a atenção básica deve estar preparada para manejo e reabilitação das pessoas com essas doenças.

Palavras-chave: Doenças musculoesqueléticas; Atenção Primária à Saúde; Epidemiologia.

Resumen

Introducción: Las enfermedades musculoesqueléticas son causas importantes de discapacidad física que resultan en una reducción de la calidad de vida y un aumento de los costos de salud. **Objetivo:** Este estudio tuvo como objetivo describir la prevalencia de síntomas de enfermedades musculoesqueléticas (EME) y la discapacidad física asociada a estos síntomas en un área cubierta por una unidad básica de salud de la familia (UBS) en un área periurbana. También analizamos la asociación de la presencia de estos síntomas con características demográficas y enfermedades crónicas más frecuentes. **Métodos:** Estudio transversal realizado en el área de cobertura de una UBS periurbana entre agosto de 2018 y febrero de 2019 en el que se entrevistó a personas mayores de 15 años, seleccionadas al azar, mediante la primera fase del cuestionario *Community Oriented Program for Control Of Rheumatic Diseases* (COPOCORD) traducido y validado al portugués. También se les preguntó sobre la presencia de otras enfermedades diagnosticadas y medicamentos en uso. Además, se tomaron medidas del peso, la altura y la circunferencia de la cintura de cada participante. Los dos primeros se utilizaron para calcular el índice de masa corporal (IMC). **Resultados:** Fueron entrevistadas 372 personas con una edad media de 46,5 ($\pm 18,3$) años, de las cuales 212 (57%) eran mujeres. La prevalencia de individuos que presentaron síntomas de enfermedades musculoesqueléticas en los últimos siete días fue del 66,4% (IC 95%: 61,6-71,2). Aproximadamente la mitad (48,6%) y casi una cuarta parte (24,2%) informaron síntomas de intensidad moderada y grave, respectivamente. Las zonas más afectadas fueron la espalda (50,27%), el cuello (34,9%) y las rodillas (30,64%). La gran mayoría, 209/247 (84,6%) refirieron dolor en más de una localización y 129/247 (52,2%) refirieron limitaciones físicas en las actividades de la vida diaria. 102 de los 247 (41,3%) buscaron asistencia médica, la mayoría, 70/102 (68,6%), en la UBS. Las personas con síntomas de DMSQ tenían una edad media y un IMC significativamente más altos que las personas sin estos síntomas. También tenían una mayor frecuencia de diabetes y ansiedad y/o depresión. Sin embargo, en el análisis multivariado, ninguna variable fue un predictor independiente de los síntomas del EMS. **Conclusiones:** Los síntomas de las enfermedades musculoesqueléticas son prevalentes en esta comunidad y la atención primaria debe estar preparada para el manejo y rehabilitación de las personas con estas enfermedades.

Palabras clave: Enfermedades musculoesqueléticas; Atención Primaria de Salud; Epidemiología.

INTRODUCTION

Musculoskeletal disorders (MSD) include a wide range of heterogeneous degenerative, inflammatory, or fragility diseases that affect muscles, bones, joints, tendons, and ligaments.¹ Overall, MSD are the second leading cause of years lived with disability worldwide, only behind mental disorders and substance abuse.²

According to the Global Burden of Disease Study (GBD),¹ the main MSD are rheumatoid arthritis, osteoarthritis, low back pain, neck pain, and gout — currently, low back pain is the main cause of years lived with disability in the world.^{3,4}

MSD are highly prevalent and most become more common with advanced age, especially low back pain and osteoarthritis. However, these diseases can also affect children, adolescents, young adults, and middle-aged people in their productive years of life.⁵ Therefore, they are causes of lost work days, early retirement, reduced productivity, and the need for health care, resulting in economic loss for individuals and the society.²

Pain, stiffness, and joint or bone marrow edema are characteristic signs and symptoms of MSD, which result in progressive reduction of physical function, impairment of mental health, and increased risk of developing other chronic diseases with common risk factors such as obesity and sedentary lifestyle.⁵ In addition, impaired mobility predisposes to sarcopenia, which is associated with increased risk of falls, fractures, and consequent worsening of musculoskeletal impairment.⁶

Therefore, MSD are common components in people with multimorbidity,⁷ contributing to an unfavorable evolution of chronic diseases such as cardiovascular diseases, diabetes, and obesity.⁸

Thus, the tendency for the prevalence of people living with noncommunicable diseases, such as MSD, to increase with the aging of the population, means that there is a need to plan health policies that aim to improve the quality of life of these people.⁴

Identifying community needs should be based on disease epidemiology and is the first step toward planning and establishing appropriate health services for the population at the primary health care level. In Brazil, there are still few studies whose authors evaluated these diseases in peri-urban and rural regions of small cities of the country. Therefore, in this study we aimed to describe the prevalence of MSD symptoms and the physical disability associated with them in the coverage area of a peri-urban Health Center (*Unidade Básica de Saúde – UBS*) in a small city of the country, far from specialized health services.

METHODS

This was a cross-sectional study in which the questionnaire from the first phase of the Community Oriented Program for the Control of Rheumatic Diseases (COPCORD), translated and validated for the Brazilian population,⁹ was applied to participants by researchers after prior training.

The project for this research was approved by the Ethics Committee of Research involving human beings at the Universidade Federal da Grande Dourados (Ethical Approval Opinion 2287.185) and by municipal authorities. All participants were informed about the risks, benefits, and form of participation in the study and expressed their consent by signing the Informed Consent Form. Participants under 18 years of age signed an Assent Form and their parents signed the Informed Consent Form. The study was carried out from September 2018 to February 2019 in a coverage area of a rural UBS, but which serves the population in a peri-urban region, that is, with mixed rural and urban characteristics.

Randomly selected residents from the UBS coverage area who met the following criteria were interviewed: being over 15 years of age; having lived in the location for at least six months; and not having a cognitive impairment. A total of 379 individuals were invited to participate. Seven (1.84%), three women and four men, were not interviewed: three refused to participate; one who, due to a neurological disease, had cognitive impairment; and three were not at home on three visits, on different days and times. In the end, 372 people were interviewed out of a total of 3,095¹⁰ local residents. Sampling was calculated using the Sampsiz online calculator for prevalence study based on the local population and approximate prevalence of 50% of MSD symptoms from a Brazilian study,¹¹ with 5% precision and 95% confidence interval (95%CI).

Demographics, such as age, sex, self-reported skin color, marital status, family income in minimum wages (MW), and current occupation, were evaluated. Those who answered “yes” to the question “Have you had pain, swelling, or stiffness in your bones, joints, or muscles in the past seven days?” constituted the group with MSD symptoms. All indicated the site of these symptoms in a schematic drawing specific to the questionnaire and evaluated their intensity in each site on a visual analogue scale from 0 (no symptoms) to 10 (unbearable symptoms). Those who answered “yes” to the question “Do you have physical impairments?” were invited to answer the Health Assessment Questionnaire – Disability Index (HAQ-DI), translated and validated for the Brazilian population,¹² and a score was calculated from 0 (no physical dysfunction) to 3 (very severe physical dysfunction).¹³ They also listed other diagnosed diseases and treatments they were undergoing. The height of barefoot individuals was measured in meters (m) and their weight was measured in kilograms (kg). Abdominal circumference was measured in centimeters (cm) at the midpoint between the last rib and the iliac crest. Body mass index (BMI) was calculated as the ratio between weight and height squared. BMI < 18.5 kg/m² was considered underweight; ≥ 25 < 30 kg/m², overweight; and > 30 kg/m², obesity.¹⁴ Central obesity was defined by abdominal circumference ≥ 94 cm for men and ≥ 80 cm for women.¹⁵

Statistical analysis was performed using the SPSS statistical package version 22.0 (IBM, New York, USA). Continuous variables were reported as mean (\pm standard deviation) or median (interquartile range), and categorical variables as absolute numbers (percentages). The comparison between continuous variables was analyzed using Student’s t-test and Mann-Whitney test. For categorical variables, the χ^2 or Fisher’s exact test were used. Prevalence ratios were calculated to compare the prevalence of demographics and comorbidities between people with and without MSD symptoms. The joint model was created to explain the presence of MSD using Poisson multiple regression, inserting into the model the characteristics whose descriptive level in the bivariate analyses was less than 0.10 ($p < 0.10$) and with sufficient samples in the categories to be part of the model, maintaining all the variables inserted in the final model.

RESULTS

The age of the 372 participants ranged from 16 to 89 years, with an average of 46.5 (± 18.3); 212 (57%) were women, 173 (46.5%) reported to be brown, 249 (66.9%) were married or lived with a partner, and 191 (51.3%) had a family income between two and five MW. Regarding current employment, 73 (19.6%) were employees of private sector companies (meatpacking plants, supermarkets, pharmacies, diners, private schools); 76 (20.4%), self-employed (bricklayers, truck drivers, cleaners, artisans, hairdressers and manicurists, businesspeople); 46 (12.4%), housewives; 41 (11.0%), civil servants (teachers, nurses, nursing assistants, health agents, dentists, secretaries); 14 (3.8%), farmers; ten (2.7%), domestic workers; and 26 (7%), students. A total of 55 (14.8%) individuals were retired; 17 (4.6%) were unemployed; and 14 (3.8%) were absent from work due to illness.

MSD symptoms associated or not with trauma in the last seven days were reported by 247 (66.4%, 95%CI 61.6–71.2) participants. The prevalence of MSD symptoms not associated with trauma was 236 of 372 people (63.44%, 95%CI 58.43–68.17).

Of the 247 participants who reported MSD symptoms, 37 (15.2%) classified their symptoms as mild; 120 (48.6%), as moderate; 57 (23.1%), as intense; and 33 (13.4%), as severe. In all evaluated sites, the average intensity of symptoms on the visual analogue scale was > 6, with the most intense symptoms

being in the feet and back (Table 1). About half of those who reported these symptoms, 129/247 (52.2%), reported that they were physically impaired. The mean HAQ score was 0.95 (± 0.75), median=0.75 (0–3), and 39/120 (32.5%) scored HAQ>1.

Table 1. Frequency of symptoms of musculoskeletal disorders and pain intensity according to site.

Symptoms' site	n=372* n (%)**	Symptom's intensity# Mean (standard deviation)
Neck	131 (34.9)	6.94 (2.14)
Shoulders	93 (25)	7.00 (2.33)
Back	187 (50.27)	7.35 (2.26)
Elbows	75 (20.2)	6.63 (2.28)
Wrist	73 (19.6)	6.72 (6.24)
Hands	71 (19.1)	6.75 (2.16)
Hip and thighs	108 (29.32)	7.03 (2.40)
Knees	114 (30.64)	7.08 (2.17)
Ankles	80 (2.50)	7.00 (2.30)
Feet	37 (9.95)	7.13 (1.93)

*total number of participants; **number of participants with symptoms of musculoskeletal disorders in each site; #evaluated by the visual analog scale.

Source: Prepared by the authors.

The back, neck, and knees were the most commonly affected sites in order of frequency (Table 1). Symptoms associated with MSD were reported in more than one site by 209/247 (84.6%) people; 157 (63.6%) reported symptoms in three or more sites; and 95 (38.5%), in six or more sites.

Of the 247 participants with MSD symptoms, 102 (41.29%) sought medical assistance, of which 70 (68.6%) were seen by the UBS and 32 (31.4%) were seen by an orthopedist, as they had health insurance plan. Of the former, ten (14.28%) were referred to an orthopedist and another five (7.14%) to a rheumatologist. Of the 102 (70.6%) who sought medical care, 72 were given a specific diagnosis — 13 had more than one diagnosis.

In Table 2 we show that participants who reported MSD symptoms had a significantly higher mean age than those without symptoms. The prevalence of MSD symptoms in the 249 participants aged between 20 and 59 years was 65.86%, and in the group composed of 27 individuals aged between 16 and 19 years, 48.15%. The prevalence of these symptoms was 72.92% in the 97 people aged >59 years.

We found no statistical difference between the groups in relation to family income ($p=0.94$) and occupation ($p=0.43$) — data not shown in Table 2 — and sex, although more patients with MSD symptoms were women (Table 2).

There was a significant difference between the groups with and without MSD symptoms regarding marital status and self-reported skin color. The former had a significantly increased prevalence of type 2 diabetes, anxiety, and/or depression as well as a significantly higher mean BMI than people who did not report these symptoms (Table 2).

Nevertheless, in a Poisson multiple regression model, we identified no independent predictor of MSD symptoms (Table 3).

Table 2. Demographic characteristics and presence of chronic diseases of the groups with and without symptoms of musculoskeletal disorders.

	With MSD symptoms (n=247)	Without MSD symptoms (n=125)	p-value	Prevalence ratio
Mean age (standard deviation)	48.49 (18.06)	42.71 (18.24)	0.004	1.39
Women n (%)	148 (59.92)	64 (43.2)	0.135	
Skin color				
Brown n (%)	115 (46.6)	58 (46.4)	0.005*	1.00
White n (%)	114 (46.2)	54 (43.2)		1.10
Black n (%)	17 (6.9)	5 (4)		1.72
Asian n (%)	1 (0.4)	8 (6.4)		0.06
Marital status				
Single n (%)	43 (17.4)	40 (32)	0.007*	0.54
Married or in a common-law marriage n (%)	172 (69.63)	77 (61.6)		1.14
Widowed n (%)	21 (8.5)	6 (4.8)		1.77
Divorced/separated n (%)	11 (4.4)	2 (1.6)		1.77
Hypertension n (%)	81 (32.79)	30 (24)	0.10	1.10
Diabetes n (%)	36 (14.54)	8 (6.4)	0.033	2.27
Dyslipidemia n (%)	40 (16.19)	16 (12.8)	0.48	1.26
Smoking habit n (%)	24 (9.72)	6 (4.8)	0.15	1.62
Anxiety and depression n (%)	52 (21.05)	15 (12)	0.045	1.75
Central obesity n (%)	170 (68.8)	76 (60.8)	0.15	1.13
Mean BMI (standard deviation)	28.07 (5.85)	26.52 (5.3)	0.013	

MSD: musculoskeletal disorders; n: number; BMI: body mass index; *likelihood ratio.

Source: Prepared by the authors.

Table 3. Poisson regression of variables that were significant or tended toward significance.

Variable	PR	95%CI		p-value
		Lower	Higher	
Mean	1.00	1.00	1.01	0.30
Sex (women)	1.09	0.83	1.42	0.59
Marital status (have a partner)	1.12	0.85	1.48	0.43
Hypertension	0.93	0.66	1.31	0.67
Diabetes	1.17	0.77	1.76	0.46
Anxiety and/or depression	1.12	0.81	1.54	0.49
BMI (kg/m ²)	1.01	0.99	1.04	0.325

PR: prevalence ratio; CI: confidence interval; BMI: body mass index.

Source: Prepared by the authors.

DISCUSSION

In this study, we observed a prevalence of 66.4% of MSD symptoms with and without trauma and 63.4% not associated with trauma in a sample of the population from the coverage area of a peri-urban UBS. Only 15.2% of people reporting MSD symptoms rated the symptoms as mild, and the mean HAQ-DI was 0.95 (± 0.75). These symptoms were most often located in the back, neck, and knees. The majority (84.6%) reported symptoms in more than one site. Almost half (41.91%) of people with these symptoms sought medical assistance, the majority at the UBS — a third of these were given a diagnosis. Participants with these symptoms had higher mean age and BMI as well as a significantly higher frequency of type 2 diabetes, anxiety and/or depression. But in the Poisson multiple regression model, no variable remained significant.

The reported prevalence of 66.4% of MSD symptoms with and without trauma is among the highest described in the literature, similar to 66.6 and 62.1% reported in studies conducted in rural areas in Iran¹⁶ and in urban areas in Suriname,¹⁷ respectively. However, the prevalence observed in this study was higher than that described in other Brazilian studies carried out in urban populations. Dos Reis-Neto et al.¹⁸ described a total prevalence of MSD symptoms with and without trauma of 49.9% among 5,000 participants in 16 capitals of five Brazilian regions. Senna et al.¹⁹ reported a prevalence of 30.9% among 3,038 individuals from the city of Montes Claros, state of Minas Gerais, and Pereira et al.²⁰ observed a prevalence of 30.4% among 512 adult participants in Vitória, state of Espírito Santo, of MSD symptoms not associated with trauma. The higher prevalence in the present study could be explained by the higher mean age of the participants, 46.5 (± 18.3), compared to those of Senna et al.,¹⁹ Pereira et al.,²⁰ and dos Reis-Neto et al.,¹⁸ which were 36 (± 16), 36.19 (± 13.24), and 38.5 (± 16.9) years of age, respectively. In addition to the fact that this study was carried out in a peri-urban region of a small city of Brazil, unlike others that were carried out in urban regions.

Some researchers showed that the prevalence of MSD is lower in urban populations than in rural ones.^{16,21} Conversely, authors of a study conducted in Ecuador showed a significantly higher prevalence of musculoskeletal pain in urban populations than in rural populations, 48.9 and 28%, respectively ($p=0.01$).²² In semi- and peri-urban regions in Africa, a prevalence of 33%²³ of MSD symptoms and 58%²⁴ of musculoskeletal pain were reported in populations younger than the present study's population age — medians of 33 (24–26) and 39 (29–52), respectively.

Furthermore, regional variations were demonstrated among five regions of Mexico, where the prevalence of musculoskeletal pain ranged from 7.1 to 43.7%,²⁵ and among 14 European countries, where the prevalence of chronic musculoskeletal pain ranged from 18.6% in Switzerland to 45.6%,²⁶ suggesting the influence of geographic factors on the prevalence of musculoskeletal pain.

Regarding pain intensity, our results reinforce the results of Olufemi et al.,²⁴ according to which only 16% of patients with musculoskeletal pain reported a mild pain. In the present study, the average intensity of symptoms was greater than six in all evaluated regions, similar to that described by dos Reis-Neto et al.,¹⁸ but lower than that observed in the study by Guevara-Pacheco et al.,²² whose averages were 5.6 (± 2.2) in urban areas and 5.1 (± 2.2) in rural areas.

The frequency of physical impairment reported in this study was higher than that described by other Brazilian studies in urban populations, between 7.9¹¹ and 23.2%,²⁰ but it was lower than that of a study conducted in a semi-urban population in Pakistan, in which 2/3 of the people with musculoskeletal pain reported some impairment for activities of daily living, although it was considered mild by 82.9%.²⁷ In this sense, the mean HAQ-DI score of those who reported MSD symptoms in the present study, 0.95 (± 0.75), was lower than that reported in capitals of different regions of Brazil, which was 1.09 (± 0.71).¹¹ Conversely, in Suriname, the mean HAQ-DI score was 0.23 in people with MSD symptoms, with the authors considering that the presence of musculoskeletal symptoms was not incapacitating for activities of daily living.¹⁷ These differences could be partially explained by differences in cultural understanding and interpretation of the HAQ questions²⁴ as well as by differences in the daily routines of the studied populations.¹¹

In our research, we corroborate the various studies whose authors have shown that the back is the most commonly affected site, although they show the knees as the second most frequent site^{17,18,28} and not the neck, as in this study and in that of Saeed et al.²⁹ In contrast, in the study by Courage et al.,²³ the neck was the least affected site, although the lumbar spine was the most affected site, followed by the knees. Other researchers showed the knees to be the most frequently affected site.^{16,22,24,30} Authors of a study conducted in India showed that the knees were the most frequent site of pain in urban areas, and in rural areas it was the spine.³¹ Thus, these differences could be explained by differences in the daily activities and work routines of the different surveyed regions.

Our results corroborate studies whose authors reported that localized pain in one site of the body is relatively rare.³² Researchers of a study conducted in Suriname showed that 75.7% reported pain in multiple sites, in a population with a mean age of 41.34 (18.1) years.¹⁷ A lower prevalence was observed by Olufemi et al.,²⁴ of 60.2%, and by Courage et al.,²³ of 52.7%, in younger populations, with a median age of 38 (24–46) and 33 (24–46) years, respectively.

In accordance with current guidelines, in which it is recommended that nonspecific musculoskeletal pain be managed in primary health care,³³ in this study we showed that the majority of participants rely on the primary health care physician for treatment of these conditions. Similar to what was described in a study conducted in Mexico,³⁴ slightly less than half of people with MSD symptoms sought medical care. This prevalence is lower than that described in Europe, where more than 70% of people with musculoskeletal pain seek medical care.³⁵

The frequency of patients who had a specific diagnosis for their symptoms was 28.8%, higher than the 12.4% reported by Olufemi et al.²⁴ in Africa and the 18.8% observed in clinics located in areas with few health resources in Mexico.³⁴ However, it was lower than that observed in eight developed countries

in Europe, where 48 to 75% of people with musculoskeletal pain received some information about their disease or treatment.³⁵

This study is in line with observations that age is associated with the presence of MSD.^{17,18,24,27} Therefore, an increase in the number of people with these diseases is expected as the population ages.

In contrast to other studies whose authors have shown that women have more MSD than men,^{17,18,24,27} in the present research, the difference in gender distribution did not reach statistical significance. Although an increased prevalence of women has been demonstrated for many MSD, some, such as chronic low back pain, are more prevalent in men.³⁶ In this sense, no female predominance was observed in relation to knee and back pain in a study conducted in Qatar.³⁷

In contrast to the studies by Ho-A-Tham et al.¹⁷ and Courage et al.,²³ which showed no association between MSD symptoms and marital status, we verified that in the group with MSD symptoms there were fewer single people than in the group without symptoms, similar to what has been described in other studies.^{18,19}

Authors of a Brazilian study showed an association between lower income and people with musculoskeletal symptoms not associated with trauma, and also described an association between the presence of musculoskeletal pain and domestic and field work.¹⁸ We found no association with income or any of the participants' current occupations. Nonetheless, the wide variety of occupations and income categories of the people included in the study may have influenced this result.

In this study, in the group with symptoms, the number of people who reported to be brown, white, or black was greater than in the group without symptoms. Conversely, a smaller percentage of people with MSD symptoms reported to be Asian. A study carried out in Malaysia showed that Chinese men have a lower prevalence of musculoskeletal pain (9.9%) than Indian and Malaysian men, with the authors arguing that this result could be explained by genetic factors and the response to pain influenced by the culture of these Chinese men.³⁸ However, in Japan, the prevalence of chronic musculoskeletal pain is high, estimated at 45.2%.³⁹ Therefore, there is a need for studies with a larger number of people of Asian origin living in Brazil to confirm the results of this study.

Our study is somewhat similar to a study conducted in Nigeria,²⁴ in which bivariate analysis showed an association of musculoskeletal pain with women, family history of MSD, previous history of trauma, diabetes, hypertension, obesity, peptic ulcer, and asthma, and multivariate analysis failed to identify any independent predictor for the presence of MSD. Although it has been described that people with MSD may increase the risk of developing chronic diseases,⁸ the increased occurrence of two or more chronic diseases in an individual takes place mainly among diseases that increase in prevalence with age, without necessarily having an etiological association, especially if there are associated factors in common.⁴⁰

This study is limited by the small sample and the failure to carry out the other phases of COPCORD, due to scarce resources.

CONCLUSION

The prevalence of MSD symptoms in the area covered by the Family Health Strategy (*Estratégia Saúde da Família* – ESF) is high and the majority of symptomatic patients are seen on site. With the aging of the population, an increase in the prevalence of noncommunicable chronic diseases is expected, and, therefore, primary health care must be prepared for the management and rehabilitation of people with MSD.

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CONFLICT OF INTERESTS

Nothing to declare.

AUTHORS' CONTRIBUTIONS

MMS: Conceptualization, Data curation, Formal Analysis, Funding acquisition, Investigation, Methodology, Project administration, Supervision, Validation, Writing – original draft, Writing – review & editing. MHK: Conceptualization, Data curation, Formal Analysis, Funding acquisition, Investigation, Methodology, Project administration, Supervision, Validation, Writing – original draft, Writing – review & editing.

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