Original Article

Related factors to osteoarthritis in a group of informal workers in Medellín downtown, Colombia

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Abstract

Introduction: A correlation is made regarding osteoarthritis and working conditions and lifestyles of informal workers in Medellín downtown.

Objective: To identify the prevalence of chronic and degenerative diseases, and the relationship of osteoarthritis with sociodemographic and work conditions, habits and lifestyles, in a group of informal workers from Medellín, Colombia.

Materials and methods: Cross-sectional study, with a primary source of information, with 686 workers. An assisted survey was applied, after obtaining consent. 289 workers with a diagnosis of chronic or degenerative disease, ≥18 years old, with ≥5 years in their profession were included. Exploratory and association analysis with Chi2 test, and calculation of PR with 95% CI.

Results: 79.9% of them suffered from a chronic disease. 3.46% had a diagnosis of osteoarthritis, being significantly higher ($p < 0.05$) in those who had spent between 21 and 30 years performing their profession (PR=5,62. CI:1,20;26,34). The prevalence of osteoarthritis was also higher in; >45 years (PR=2.26), women (PR=4,44), sedentary workers (PR=1,71), obese (PR=3,40), as well as those who had been brick-layers (PR=1,30), in those who had semi-stationary sales positions (PR=2,21), they sold harvest and perishable products (PR=1,78), in those who worked> 8 hours a day (PR:2,77), ≤ 5 days a week (PR=3,10), they did not have enough space to move (PR = 2.08), and in those who had forced postures or movements (PR=2,72).

Conclusion: sociodemographic and work factors, habits and modifiable lifestyles are related to a higher prevalence of osteoarthritis in this working population.

Key Words*:* Informal work, vulnerability, work-related diseases, arthrosis, chronic diseases, degenerative diseases

Factores relacionados con osteoartritis en trabajadores informales del centro de Medellín, Colombia

Resumen

Introducción: Se hace una correlación entre la osteoatrosis y las condiciones laborales, hábitos y estilos de vida de los trabajadores informales del centro de Medellín, Colombia.

Objetivo: Identificar la relación de la osteoartrosis y la prevalencia de enfermedades crónicas y degenerativas con las condiciones sociodemográficas, laborales, hábitos y estilos de vida en un grupo de trabajadores informales de Medellín, Colombia.

Materiales y métodos: Estudio transversal, con fuente primaria de información de 686 trabajadores informales. Se realizó una encuesta asistida, previa toma de consentimiento. Se seleccionaron 289 trabajadores con diagnóstico de enfermedad crónica o degenerativa, ≥18 años, con ≥5 años en su oficio. Se realizaron análisis exploratorios y de asociación con prueba Chi2, y cálculo de RP con IC del 95%.

Resultados: el 79,9% de la población padecía alguna enfermedad crónica. El 3,46% presentaba diagnóstico de osteoartrosis, siendo significativamente mayor ($p<0,05$) en quienes tenían entre 21 y 30 años en su oficio (RP=5,62. IC:1,20;26,34). También fue mayor la prevalencia de osteoartrosis en; >45 años (RP=2,26), mujeres (RP:4,44), trabajadores sedentarios (RP=1,71), obesos (RP=3,40), así como en quienes habían sido obreros (RP=1,30), en

aquellos que tenían puestos de venta semiestacionaria (RP=2,21), vendían productos de cosecha y perecederos (RP=1,78), en quienes trabajaban >8 horas diarias (RP:2,77), ≤5días a la semana (RP=3,10), no tenían espacio suficiente para moverse (RP=2,08), y en quienes tenían posturas o movimientos forzados (RP=2,72).

Conclusión: En la población de vendedores informales del centro de Medellín, los factores sociodemográficos, laborales, hábitos y estilos de vida modificables se relacionan con una mayor prevalencia de osteoartrosis.

Palabras clave: Trabajo informal, vulnerabilidad, enfermedad laboral, artrosis, enfermedades crónicas, enfermedades degenerativas.

Introduction

Informal work is the predominant economic model in Latin America and the Caribbean (1). According to the International Labor Organization (ILO) (2), these kinds of jobs are not covered by work legislation, social security legislation, disease license nor paid vacations, etc.

In Colombia, in 2019, a study was carried out in Colombia by the National Administrative Department of Statistics (DANE), where it was shown that informal work reached a proportion of 46.9% at the national level and in the city of Medellín a proportion of 42 , 9% in the period from March to May of that year (3).

In the case of Medellín, informal workers work really hard to get some money to sustain themselves and maybe their families; they are exposed to adverse environmental conditions, such as high noise levels, air pollution and other types of occupational hazards, including ergonomic ones, which involve repetitive movements , forced postures and moving heavy objects. These situations affect both physical and mental health and can trigger psychosocial stress.

At the social security level, informal workers have insecure jobs, long working hours and little income, which creates difficulties in accessing the pension system and, therefore, forces them to work until advanced ages.

The above circumstances facilitate the emergence of occupational diseases and worsen pre-existing health conditions; however, the detailed characterization of the prevalence of this type of disease is still scarce, and even less documented when it comes to identifying the factors associated with a specific type of chronic and degenerative disease, as it occurs with the prevalence of osteoarthritis in this working population: a condition that can limit their physical capacity; and therefore, their workforce. In the case of the informal worker population in the center of Medellín, suffering from osteoarthritis represents an inability to work.

Osteoarthritis or arthrosis, is a chronic and degenerative disease and is the most common form of arthritis that affects millions of people around the world, becoming the most common cause of arthritis in the world (9,10). It occurs when the protective cartilage wears out over time, preventing adequate damping of the ends of the bones. This disease is most commonly seen in the joints of the hands, knees, hips, and spine. In the general population, it is recorded that up to 9.6% of men and 18.0% of women over 60 years of age can suffer from osteoarthritis (11).

The present study establishes the prevalence of chronic and degenerative diseases, particularly osteoarthritis in informal workers or "venteros" (as they are known in the Medellin jargon) from the center of Medellín, and its relationship with sociodemographic, work, habits and lifestyle factors. All of this, in order to provide evidence that allows progress in the identification of their occupational vulnerability characteristics and to facilitate the design of activities and actions that can improve their living and working conditions.

Materials and methods:

Design: This is a project derived from the PhD thesis "Environmental, working, sociodemographic, economic and health perception conditions that set the working vulnerability condition in a group of informal workers in Medellin 2015-2019" from the CES University, Medellin. Cross sectional, analytic study, constructed based on primary information sources.

Population: 686 informal workers or "venteros" (as they are known in the Medellin jargon) from the center of the city of Medellín were identified, of which 289 participants were selected. For the study, workers of legal age with more than 5 years working as peddlers and with a diagnosis of a chronic or degenerative disease were selected. The participants signed the consent to carry out the study, in addition, the approval of the study was requested by the representatives of the workers and workers themselves. A survey applied in an assisted manner in one of the trade union headquarters of the study population was used as an instrument. The data was taken by the main researcher with the help of a Public

Health professional after conducting a pilot test. Finally, an adequate control of selection and information biases was carried out both from the workers, the researchers and the instrument to guarantee the quality of the data.

Variables: Sociodemographic, economic, work conditions, habits and lifestyles were considered as independent variables. The prevalence of osteoarthritis among workers diagnosed with chronic and / or degenerative disease was considered as a dependent variable. Sociodemographic variables are: age, sex, education, marital status and health affiliation were included. Working variables are: type and type of sale, hours of work per day, days of work per week, seniority in the trade, seniority in the sector, previous trade and type of furnishing of the job. Occupational risk factors are: space enough to move, have to evacuate in an emergency, feel exaggerated heat or cold, have forced postures or movements, move or lift heavy objects, as they feel with the work they do. Some habits and lifestyles were also included, such as sports or recreational activity, alcohol consumption and smoking. Finally, the condition of overweight and obesity was considered as comorbidity.

Analysis: Univariate analysis were carried out with descriptive statistics (measures of central tendency, position and dispersion) for the quantitative variables, verifying the assumption of normal distribution with the Kolmogorov - Smirnov test, as well as distributions of frequencies and percentages for the variables. qualitative. A bivariate analysis was performed in which epidemiological measures were calculated using prevalence ratios (PR) with their respective 95% confidence intervals (CI), to establish the strength of association between the prevalence of osteoarthritis and the other characteristics or variables in study, and as a statistical measure the Chi2 test of association with statistical confidence of 95% and significance of 5%. The analyzes were carried out in the Excel and Epidat 3.1 programs. The project from which this product is derived was approved by the Institutional Ethics Committee of the CES University, through act No. 84.

Results

1. Distribution of frequencies and percentages of the sociodemographic, work, habits and lifestyle characteristics of workers with a diagnosis of chronic and degenerative disease

Of the total of 289 (42.0%) workers who were diagnosed with a chronic and degenerative disease, 52.6% were men, with a higher prevalence of these diseases in those who were 45 years of age or older. Among these diseases, 3.46% (10) of the workers had a diagnosis of osteoarthritis, this being the event of interest for the present study.

On the other hand, some risk factors that could favor the presence of these chronic diseases were identified, such as alcohol consumption for 16.3% (47), and smoking for 17.0% (49) of the informal workers. It is also evidenced that, of the total number of workers with chronic diseases, 72.6% were overweight or obese, 76.5% work more than 8 hours a day, and around 97.0% work 6 or 7 days a week (96.5 %). It is important to note that, of the total of these workers, 74.4% belonged to the subsidized health regime (Table 1).

Table 1. Frequency and percentages distribution of sociodemographic, work, habits and lifestyle characteristics of workers with diagnosed chronic and degenerative disease. N=289

Sociodemographic conditions	n	%	Working conditions	n	%
Sex			**Previous profession**		
Female	137	47,4	Only salesman	71	24,6
Male	152	52,6	Farmer, worker, others	218	75,4
Age			**Enough space for moving**		
45 years old or older	231	79,9	No	31	10,7
18 – 44 years old	58	20,1	Yes	258	89,3
Schooling			**Possibility of emergency evacuation**		
Cero to five years	207	71,6	No	24	8,3
More than five years	82	28,4	Yes	265	91,7
Marital status			**Extreme heat or cold in workplace**		
No partner	124	42,9	Yes	243	84,1
With partner	165	57,1	No	46	15,9
Type of health care plan			**Forced postures and movements**		
Subsidized	215	74,4	Yes	172	59,5
Contributive, others	74	25,6	No	117	40,5
BMI (n=288)			**Lifting and moving heavy objects**		
Overweight, obese	209	72,6	Yes	121	41,9
Under weight, healthy weight	79	27,4	No	168	58,1
Working hours each day			**Feels good about his/her job**		
>8 hours a day	221	76,5	No	27	9,3
≤8 hours a day	68	23,5	Yes	262	90,7
Working days, a week			**Physical activity**		
6 and 7 days a week	279	96,5	Sedentary	107	37,0
≤5 days a week	10	3,5	Slight activity	72	24,9
Years in the profession			Active	68	23,5
>20 years	167	57,8	Very active	42	14,5
≤20 years	122	42,2	**Alcohol consumption**		
Years in the sector			Yes	47	16,3
>5 years	256	88,6	No	242	83,7
≤5 years	33	11,4	**Smoking habit**		
Furnishing of workstation			Yes	49	17,0
Trolley, car, suitcase	219	75,8	No	240	83,0
Stand or booth	70	24,2	**Chronic and/or degenerative diseases diagnosed**		
Type of sale			Yes	289	42,2
Semi-stationary - mobile	224	77,5	No	396	57,8
Stationary	65	22,5	**Arthrosis**		
Sale typology			Yes	10	3,46
Merchandise and jalopy	157	54,3	No	279	96,54
Other products	132	45,7			

A higher prevalence of chronic and degenerative diseases was recorded in those workers who had been in the sector for more than 5 years (88.6%), whose sales typology was semi-stationary or itinerant (77.5%), and who had a job made up of a peddler's cart, car or suitcase (75.8%).

Taking into account the working conditions of these workers with chronic and degenerative diseases, those whose previous occupation was a mason or a farmer, represent a higher proportion compared to those who had only been informal urban workers, being 75.4% and 24.6% respectively. In addition, a higher percentage of workers with chronic and degenerative diseases were identified who considered they had enough space to move (89.3%), such as leaving and evacuating in an emergency (91.7%), however, they also considered that they were exposed to exaggerated heat or cold at their job (84.1%), and who had a sedentary lifestyle (37%).

Despite the fact that chronic and degenerative diseases are normally associated with high consumption of alcohol and cigarettes, in these workers, more than 80% of those who received this diagnosis, did not consume liquor or cigarette.

2.Prevalence of chronic and degenerative diseases, particularly osteoarthritis, by sex.

42.2% of the workers reported having a diagnosis of at least one chronic and / or degenerative disease. A higher prevalence of self-reported chronic or degenerative diseases was observed in women (47.1%). Among those with osteoarthritis, 80.0% of the diagnoses were in women. Regarding the treatment received for their illnesses, more than 80.0% of the workers reported that they received it, and this percentage was very similar for men and women (Table 2).

Table 2. Proportional distribution of workers according to sex, for the auto report of chronic or degenerative disease and the prevalence of arthrosis. Medellín, 2016. N = 289

Disease		**Sex**				**Total**	
	Male		**Female**				
	n	%	n	%	N	%	
Chronic and/or degenerative disease reported							
	Yes	152	38,6	137	47,1	289	42,2
	No	242	61,4	154	52,9	396	57,8
Arthrosis							
	Yes	2	20,0	8	80,0	10	3,5
	No	150	56,8	129	43,2	279	96,5
Has received treatment for the disease							
	Yes	133	87,5	115	86,5	248	86,1
	No	19	12,5	21	13,5	40	13,9

3.Sociodemographic conditions, body mass index, habits and lifestyles associated with the presence of osteoarthritis in workers.

Regarding sociodemographic conditions, BMI and habits and lifestyles, a statistically significant association (<0.05) was identified in which it is evidenced that for each man diagnosed with this disease there were approximately 4.5 women with the same diagnosis. On the other hand, although they were not statistically significant associations, higher prevalence of osteoarthritis were observed in workers who considered that their homes were in fair and poor condition (PR = 1.41), in those who presented a condition of overweight and obesity, where For every worker who did not have this condition and had osteoarthritis, there were 3.4 workers with overweight / obesity and this same diagnosis. The prevalence of osteoarthritis was also higher in workers who were 45 years of age or older (PR = 2.25), and in those who reported being sedentary (PR = 1.71), as shown in Table 3.

It is noteworthy that cigarette smoking was associated with a lower prevalence of osteoarthritis, this prevalence being less than 46.0% with respect to those workers who did not (PR = 0.54). (Table 3).

Table 3. Sociodemographic conditions, body mass index, habits and lifestyle associated with the presence of arthrosis of informal workers in Medellin´s downtown. N=289

Variable	Arthrosis				Total N (%)	Chi² (Valor p)*	RP (IC=95%)	
	Si - n (%)		No – n (%)					
Sex								
Female	8	5,8	129	94,2	137 (47,4)	3,16 (0,051)	**4,44** (0,96;20,54)	
Male	2	1,3	150	98,7	152 (52,6)		1,0	
Schooling in years								
Cero to fives	7	3,4	200	96,6	207 (71,6)	0,05 (0,809)	0,92 (0,24;3,48)	
More than five	3	3,7	79	96,3	82 (28,4)		1,0	
Housing state								
Regular-bad	6	4,0	143	96,0	149 (51,5)	0,049 (0,750)	**1,41** (0,41;4,89)	
Good	4	2,9	136	97,1	140 (48,5)		1,0	
Age in years								
45 and more	9	3,9	222	96,1	231 (79,9)	0,16 (0,692)	**2,26** (0,29;17,48)	
18 to 44	1	1,7	57	98,3	58 (20,1)		1,0	
Smoking habit								
Yes	1	2	48	98	240 (83)	0,028 (1,000)	0,54 (0,07;4,19)	
No	9	3,8	231	96,3	49 (17)		1,0	
Physical activity								
Sedentary	5	4,7	102	95,3	107 (37)	0,74 (0,688)	**1,71** (0,42;7,00)	
Slightly active	2	2,8	70	97,2	72 (24,9)		1,01 (0,17;5,94)	
Active/Very active	3	4,4	107	95,6	110 (23,5)		1,0	
Body mass index – IMC (n=288)								
Overweight/Obese.	9	4,3	200	95,7	209 (72,6)	0,80 (0,294)	**3,40** (0,44;26,42)	
Underweight-normal	1	1,3	78	98,7	79 (27,4)		1,0	

*Chi² test with Yates correction and Fisher's exact test; Statistically significant association if p <0.05

4.Work conditions and factors associated with the prevalence of osteoarthritis in workers.

Regarding work conditions and factors, a statistically significant association (<0.05) was identified between seniority in the trade and having a higher prevalence of osteoarthritis, this was the case for each worker who had between 5 and 20 years in the trade and had osteoarthritis, there were 5.62 workers who were between 21 and 30 years in their trade with this same diagnosis.

Although they were not statistically significant associations, there were higher prevalence of osteoarthritis in workers who had been masons or farmers before becoming peddlers (PR = 1.30), in those whose type of sale was semi-stationary or itinerant (RP = 2.21), in workers who sold harvest products, perishable goods, fast foods or snacks and sweet drinks (RP = 1.78), in those who had as a type of furnishing of their workplace, the cart or suitcase (RP = 2.88) (Table 4).

Table 4. Risk factors and conditions associated with the presence of arthrosis in informal workers of Medellin´s downtown area. N=289

Characteristics	Arthrosis				Total	Chi²	RP (IC=95%)
	Si –n (%)		No- n (%)		N (%)	(Valor p)*	
Previous profession							
Farmer, worker, other	8	3,7	210	96,3	218 (75,4)	0,001 (0,974)	**1,30** (0,28;6,00)
Only salesman	2	2,8	69	97,2	71 (24,6)		1,0
Type of sale							
Semi-stationary - mobile	9	4	215	96	224 (77,5)	0,145 (0,692)	**2,21** (0,29;17,08)
Stationary	1	1,5	64	98,5	65 (22,5)		1,0
Sale typology							
Harvest/perishable, food	6	4,5	126	95,5	132 (45,7)	0,363 (0,546)	**1,78** (0,51;6,19)
Merchandise and jalopy	4	2,5	153	97,5	157 (54,3)		1,0
Furnishing of workstation							
Trolley, car, suitcase, other	9	4,1	210	95,9	219 (75,8)	0,479 (0,460)	**2,88** (0,37;22,31)
Stand or booth	1	1,4	69	98,6	70 (24,2)		1,0
Working hours each day							
>8 hours a day	9	4,1	212	95,9	221 (76,5)	0,418 (0,461)	**2,77** (0,36;21,47)
≤8 hours a day	1	1,5	67	98,5	68 (23,5)		1,0
Working days each week							
≤5 days a week	1	10	9	90	10 (3,5)	0,073 (0,300)	**3,10** (0,43;22,17)
6 and 7 days a week	9	3,2	270	96,8	279 (96,5)		1,0
Years in the profession							
More than 30 years	1	1,1	90	98,9	91 (31,5)	**10,22 (0,006)**	0,67 (0,06;7,28)
21 to 30 years	7	9,2	69	90,8	76 (26,3)		**5,62 (1,20;26,34)**
5 to 20 years	2	2,1	120	97,9	122 (42,2)		1,0
Years in the sector							
>5 years	7	2,7	249	97,3	256 (88,6)	1,88 **(0,093)**	**0,30** (0,08;1,10)
≤ 5 years	3	9,1	30	90,9	33 (11,4)		1,0
Enough space for moving							
No	2	6,5	29	93,5	31 (10,7)	0,197 (0,291)	**2,08** (0,46;9,36)
Yes	8	3,1	250	96,9	258 (89,3)		1,0
Possibility of emergency evacuation							
No	1	4,2	23	95,8	24 (8,3)	0,148 (0,585)	**1,23** (0,16;9,28)
Yes	9	3,4	256	96,6	265 (91,7)		1,0
Extreme heat or cold							
Yes	9	3,7	234	96,3	243 (84)	0,00 (1,000)	**1,70** (0,22;13,12)
No	1	2,2	45	97,8	46 (16)		1,0
Requires forced postures and movements							
Yes	8	4,7	164	95,3	172 (59,5)	1,03 (0,210)	**2,72** (0,59;12,58)
No	2	1,7	115	98,3	117 (40,5)		1,0
Requires lifting and moving heavy objects							
Yes	4	3,3	117	96,7	121 (41,9)	0,041 (1,000)	0,92 (0,27;3,21)
No	6	3,6	162	96,4	168 (58,1)		1,0

*Chi² test with Yates correction and Fisher's exact test; Statistically significant association if p <0.05

The prevalence of osteoarthritis were also higher according to the hours of work per day and the days of work per week, where for each worker who worked 8 hours or less a day and presented osteoarthritis, there were 2.77 workers who worked more than 8 hours daily and presented the same pathology (PR = 2.77). Similarly, the prevalence of osteoarthritis was higher in those who worked fewer days a week, thus this prevalence of osteoarthritis was 2.10 times higher in those workers who worked five days or less weekly (PR = 3.10). The prevalence of osteoarthritis were also higher in workers who did not have enough space to move (PR = 2.08), in those who reported having forced postures or movement (PR = 2.72), in those who considered that in their position They were exposed to exaggerated heat or cold (PR = 1.70), and they had no way to get out or evacuate in case of an emergency (PR = 1.23). Table 4. Finally, associations with a lower prevalence of the disease were also observed, where the prevalence of osteoarthritis was 70.0% lower for workers who had been in the sales sector for more than five years.

Discussion

Although there is scientific evidence on the sociodemographic and labor conditions of workers in the informal economy, the information that refers to the prevalence of chronic or degenerative diseases for informal workers with subsistence jobs is still limited, being even more limited for pathologies such as osteoarthritis, which is why it is difficult to compare the results of this study with working populations in the informal sector, with subsistence jobs, particularly for those who exercise their trade on the streets and sidewalks of Latin American cities and the Caribbean.

Of the 289 informal workers participating in the study who had a diagnosis of chronic disease, 10 (3.46%) suffer from osteoarthritis. Of these, 80.0% (8) correspond to women, also identifying a statistically significant association ($p < 0.05$) between the disease and the fact of being a woman, results consistent with the evidence that shows that gender Female is a risk factor for developing this condition, especially after the age of 50 (12,13).

According to the current literature, osteoarthritis is rare in individuals under 40 years of age and its incidence increases significantly after reaching 60 years of age. This is due in part to the fact that at an older age, there is a less effective response to stimuli that lead to chondrocyte synthesis (14). Regarding this variable in the study population, data were observed that are consistent with current evidence, where the prevalence of osteoarthritis was 1.26 times higher (PR = 2.26. CI: 0.29; 17) in who were 45 and over.

Another scientifically evidenced risk factor for the development of osteoarthritis is overweight or obesity due to the overload that this implies on the joints (15), a situation that was also evidenced for the study population, managing to identify a 2.4 times higher prevalence of the disease in workers who were overweight / obese (PR = 3.4. CI: 0.44; 26.42) with respect to those who had normal weight.

The Framingham study also described obesity as a risk factor, stating that for every 5 units that the body mass index increases, the relative risk of radiological osteoarthritis is 1 for men and 1.8 for women, in addition to this The study supports the theory that the risk of osteoarthritis decreases with weight loss, this being a pillar of treatment, which is relevant for the population included in the study where of the 289 informal workers from the center of Medellín with chronic and degenerative diseases , 209 were overweight or obese, and 231 were over 45 years of age, conditions that allow us to conclude that informal workers in the center of Medellín are a population at high risk for developing symptoms and radiological changes of osteoarthritis (19).

A finding that draws the attention of this study was the lower prevalence of osteoarthritis identified in workers with a smoking habit (PR = 0.54). However, when reviewing the current evidence, it is found that, counterintuitively, smoking is a moderately protective factor against some types of osteoarthritis (16), although this evidence has not been reported in the working population.

Comparing the data obtained in the present study with the international literature, it is observed that in informal workers from the center of Medellín, the risk factors associated with osteoarthritis have already been described in populations with this type of diagnosis in various studies such as those mentioned below.

A study carried out in Morocco in which 71 patients with osteoarthritis were evaluated recorded that their average age was 56.8 years, and of these 94.0% were women (17), this being a higher percentage than that obtained for the present study (80.0%). According to the study on the prevalence and risk factors of osteoarthritis (EPISER) in which the burden of musculoskeletal diseases in the population of Spain was analyzed, it was found

that women have a higher risk than men of presenting symptomatic hip osteoarthritis (RR = 2.1; 95% CI: 1.4, 3.4) (18).

For its part, the Framingham population study, in which the prevalence of radiological and symptomatic changes of knee osteoarthritis was examined, where a group of patients over 35 years old were included for evaluation, in which multiple factors were identified as a risk for the presentation of the disease, within them, the female sex and being> 50 years old, as characteristics directly related to the appearance of radiological symptoms and signs (19), a situation similar to that evidenced with the workers included in this study.

It has also been described that up to 50 years of age the prevalence in both sexes is the same, but after this age it increases significantly in women; and in this particular case, 8 out of 10 informal workers with osteoarthritis are women, and 9 out of 10 were over 45 years of age.

In Latin America, a study published in the Brazilian Journal of Physical Therapy, which explored the relationship between pain intensity and functional capacity in patients with knee osteoarthritis who presented obesity, in which 35 patients were included, 31 patients they were women, which represented 88.0% of the total (20), reaffirming the greater presence of the disease among women.

On the other hand, and in what has to do with working conditions, it has been shown that an established risk factor for osteoarthrosis is the work environment, in which repeated knee flexions must be done, according to the Framingham study (19), the hours of work, intensity and type of activity such as staying on the knees or lifting weights of 25 kg or more are related to a higher prevalence of the disease, a situation that was partially corroborated for the working population included in the present study, where The prevalence of osteoarthritis in those who considered that work required forced postures or movements was 1.72 times higher than in those who did not consider it this way (PR = 2.72), however, it is striking that in these workers the prevalence of the disease was lower for those who reported lifting and moving heavy objects. This lower prevalence was 8.0% (PR = 0.92).

The forced postures that these workers can adapt, accompanied by repetitive tasks, extensor forces and lifting or moving heavy loads, can generate or aggravate musculoskeletal disorders, when these types of movements exceed the response capacity of people, or the tissues have not reached sufficient nerve recovery, and musculoskeletal injuries occur (21,22).

Notwithstanding the foregoing, in this working population included in the present study, conditions and factors that have not been reported by other studies were also included, such as physical activity, the duration of the working day, the working days per day, the seniority in the current trade, the type and type of sale they had, the previous trade, the type of work furniture, among other aspects, which cannot be compared with other studies, however they may be characteristics that could be considered in studies involving the working population, particularly employed in the informal economy and carrying out subsistence tasks.

Synthetizing, 41.9% of the 289 workers with chronic and degenerative diseases lifted and moved heavy objects, 59.5% reported having forced postures and movements, 76.5% work more than 8 hours a day and 96.5% 6 and 7 days a week, the above being conditions or risk factors for developing this pathology, and making this population more prone to developing osteoarthritis.

Finally, if one takes into account that only 10 workers of the 289 with a diagnosis of chronic or degenerative disease had this diagnosis, it would be valuable to consider that with integrated actions on the part of the State and the participation of workers, actions could be taken that generate an early impact from the prevention of the disease and the promotion of health, guiding healthy life and work habits, preventing them from developing the disease and if they already have it, they can give adequate management to minimize the symptoms.

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