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Assessment of lumbar pain in community health agents from the north of Minas Gerais State, Brazil

Avaliação da dor lombar em agentes comunitários de saúde do norte de Minas Gerais, Brasil

Abstract

Objective: To evaluate low back pain in community health agents (CHA) and its associated factors. **Methods**: Cross-sectional study with a sample of 675 CHA. The presence of low back pain was assessed using the Japanese Orthopaedic Association Back Pain Evaluation (JOABPEQ) instrument, with a maximum score of 100, where higher scores indicate less low back pain. Data collection took place between August and October 2018 at the Regional Reference Center for Occupational Health (Cerest) in Montes Claros, Minas Gerais, Brazil. The data analysis consisted of describing the frequency (absolute and relative) and calculating the mean and standard deviation of the numerical variables. **Results**: A total of 675 CHA participated in the study, 565 (83.7%) of whom were female. Scores indicating worse health conditions related to low back pain were found among females [53.98 vs. 66.40 (males)], participants over 40 years old [52.63 vs. 62.52 (≤ 30 years)], married individuals [54.02 vs. 58.88 (single)], those working multiple jobs [50.55 vs. 56.56 (single job)], individuals with permanent employment contracts [46.69 vs. 59.24 (other contracts)], those with more than five years of experience in healthcare [49.06 vs. 62.80 (less than one year)], and those with over five years as CHA [48.42 vs. 64.25 (less than one year)]. **Conclusion**: It was found that CHA with longer tenure in the role and in the healthcare field had scores indicating a negative impact of low back pain, highlighting the risk factors associated with the profession.

Keywords: Community Health Agents; Occupational Health; Low Back Pain; Occupational Hazards.

Resumo

Objetivo: Avaliar a ocorrência da dor lombar em agentes comunitários de saúde (ACS). **Métodos**: Estudo transversal, com dados coletados por meio de entrevistas com ACS, no Centro de Referência Regional em Saúde do Trabalhador (Cerest), Montes Claros, Minas Gerais, Brasil. Escores de dor lombar foram aferidos por meio do emprego do instrumento de avaliação *Japanese Orthopaedic Association Back Pain Evaluation* (JOABPEQ), com escore máximo de 100 e pontuações mais altas indicando menos dor lombar. A coleta de dados foi realizada entre agosto e outubro de 2018. A análise dos dados consistiu na descrição da frequência (absoluta e relativa) e no cálculo da média e desvio-padrão das variáveis numéricas. **Resultados**: Participaram do estudo 675 ACS, 565 (83,7%) participantes do sexo feminino. Foram encontrados escores que indicam piores condições de saúde em relação à dor lombar no sexo feminino [53,98 x 66,40 (masculino)], em participantes com mais de 40 anos de idade [52,63 x 62,52 (≤ 30 anos)], casados [54,02 x 58,88 (solteiros)], que trabalham em mais de um emprego [50,55 x 56,56 (emprego único)], que possuem vínculo de trabalho efetivo [46,69 x 59,24 (outros vínculos)], com mais de cinco anos de trabalho na área da saúde [49,06 x 62,80 (menos de um ano)] e como ACS [48,42 x 64,25 (menos de um ano)]. **Conclusão**: Constatou-se que os ACS com maior tempo de atuação na função e na área da saúde apresentaram escores que indicam um impacto negativo da dor lombar, evidenciando os fatores de risco associados à profissão.

Palavras-chave: Agentes Comunitários de Saúde; Saúde do Trabalhador; Dor Lombar; Riscos Ocupacionais.

Introduction

According to the Ministry of Health, in implementing primary care in Brazil, the community health agent (CHA) plays a role of integration between the basic health unit and the community[1]. Due to the growing expansion of the Family Health Strategy (FHS), CHAs are the bridge between the community and the services in terms of approaching the disease, recognizing and identifying problems, making referrals, and monitoring all activities related to promoting health in that community[1].

In their day-to-day work, CHAs are exposed to contaminants, the risk of accidents, a fast pace of work, and long periods of exposure to the sun. In addition, they have to travel on foot, often to places that are difficult to access, carrying bags or backpacks with the necessary materials. These physical demands can be associated with complaints of low back pain. A previous study identified a prevalence of low back pain among CHAs of 65.9% in the 12 months prior to the interview[2]. These results are in line with the literature[3-5]. Among the factors that have a negative impact on the quality of life of CHAs, the authors cite a lack of support and planning, an accumulation of duties and too much involvement with patients' problems[6].

The reality of CHA work can still trigger feelings of dissatisfaction with their work. They often report little recognition for their work. Lack of basic materials to carry out their duties, exposure to risks that interfere with their health, excessive demands linked to the various daily tasks can cause both physical and mental strain[7].

The lumbar region extends from the 12th rib to the iliac crest[8]. In general, pain in this region is a frequent condition in orthopedic care. It is estimated that approximately 80% of the world's population will experience at least one episode of low back pain in their lifetime[9]. Associated factors include: sedentary lifestyle, obesity, genetic factors, female gender, smoking, traumatic injuries, occupational risks, anxiety, and depression[8].

The prevalence of spinal problems has increased in recent decades, causing incapacity for work, loss of quality of life, decreased performance of activities of daily living, and absenteeism. In this scenario, the costs of caring for people with the problem are high. Furthermore, because of disability, there are consequences for productivity in the occupational environment[10,11].

Among CHAs, it is accepted that this condition compromises the quality of the services provided to the community[11]. Despite the growing literature on the subject, there are few results on samples of CHAs. The aim of this study was therefore to assess the presence of low back pain among CHAs working in Montes Claros, Minas Gerais.

Methods

Study design and context

This is a cross-sectional study, whose participants were CHAs working in the FHS in the municipality of Montes Claros, Minas Gerais, Brazil, carried out in 2018. The study was prepared according to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist.

Participants

At the time of the study, there were 135 FHS teams in the municipality with 797 CHAs[12]. A census approach was chosen, in which all CHAs were invited to take part in the study. Data was collected through face-to-face interviews conducted by health professionals and undergraduate students at the Regional Reference Center for Occupational Health (Cerest) in Montes Claros, between August and October 2018.

The inclusion criteria were that they had been working in the FHS for at least six months, and the exclusion criteria were that they were on leave, on detour, or on sick leave.

Variables

The outcome variable was the low back pain score, measured using the Japanese Orthopaedic Association Back Pain Evaluation Questionnaire (JOABPEQ)[13].

The variables of interest were:

1. sociodemographic and educational aspects: gender (male, female), age (in years, categorized as "less than 30 years old", from "31 to 40 years old", and "41 years old or more"), education ("elementary/middle school"; "incomplete higher education"; and "complete higher education"), income ("less than 2 minimum wages"; "from 2 to 3 minimum wages"; and "3 minimum wages or more"), number of people in the family ("less than or equal to 3"; and "greater than or equal to 4"), marital status ("single/divorced"; "married/stable union"), skin color ("white"; "black"; "brown"; "indigenous/yellow"), training in the health area ("no"; "yes").

2. occupational characteristics (length of time working in the health area and as a CHA ("less than 1 year"; "1 to 5 years"; and "more than 5 years"), workload ("24 hours"; and "40 hours"), number of families monitored ("up to 120 families"; and "more than 120 families"), type of employment relationship ("permanent/permanent"; and "contracted/lecturer/service provider"), other employment relationships ("no"; "yes"); weekly physical activity time (the criterion followed the World Health Organization (WHO) recommendation of at least 150 minutes of moderate physical activity per week[14], categorized as "less than 150 minutes" and "150 minutes or more"); and weekly sitting time ("less than or equal to 500 minutes"; and "more than 500 minutes").

Measurement

The low back pain score was obtained by applying the JOABPEQ, an instrument validated in Brazil with appropriate psychometric measures, construct validity[15], and structural validity (items and domains)[16]. The instrument consists of 25 items organized into five subscales: low back pain, low back function, ambulation, function in social life, and mental health. Each subscale should be evaluated independently, with a range of scores from 0 to 100, with higher scores representing better conditions for the patient. The questionnaire also has three scales for assessing the degree of back pain, pain in the buttocks or legs, and numbness in the buttocks or legs. The scores on the scales range from 0 to 10 points, and the higher the score, the greater the intensity of the pain[13,15,16]. The study participants were assessed using the complete instrument (25 items and the three pain rating scales).

Biases

To avoid possible bias in the study, the interviewers were trained and calibrated to collect data. After the database was entered, it was validated by two independent researchers (quality control and consistency check). All measures to minimize losses were taken: the CHAs were released from their work activities on the day of data collection, according to the schedule agreed between the team and the municipal administration. A second call was also made to CHAs who were unable to attend on the scheduled days.

Statistical analysis

Sociodemographic, occupational, physical activity, and sedentary lifestyle characteristics were described using absolute and relative frequency, or mean and standard deviation, when applicable. The items that make up the JOABPEQ, classified as numerical variables, were analyzed using mean and standard deviation. Due to census sampling, statistical inference tests were not applied. Data analysis was supported using IBM SPSS Statistics 24.

This study was carried out with the approval of the Research Ethics Committee of the State University of Montes Claros (#2.425.756/CAAE No. 80729817.0.00005146), on December 8, 2017. All participants agreed to the information in the Informed Consent Form and signed it.

Results

Of the total number of CHAs (n = 797) in the municipality of Montes Claros, 675 (87.2%) took part in the study and 122 (15.3%) did not meet the participation criteria. Of the participants, 565 (83.7%) were female, most (37%) were aged between 31 and 40 and the average age was 36.7 (sd = 9.85) years. The majority (56.7%) had primary or secondary schooling, and the average income was 2.42 (sd = 1.18) minimum wages in force in 2018. The majority lived with a partner (59.7%), were brown (70.7%) and had no training in the health area (64.3%). Regarding occupational characteristics, the majority had worked for more than five years as CHAs (43.4%), worked 40 hours a week (93.8%), were not permanent employees (74.1%), and did not work in another job (90.4%) and accompanied an average of 120.89 (sd = 41.94) families. The majority practiced 150 minutes or more of physical activity a week (67.7%) (**Table 1**).

Table 1 Characteristics of community health agents working in the Family Health Strategy in Montes Claros, Minas Gerais, Brazil, 2018 (n= 675)

Sociodemographic variable	n	%
Sex		
Male	110	16.3
Female	565	83.7
Age (in years)		
≤ 30	194	28.8
31 a 40	250	37.0
≥ 41	231	34.2
Mean (sd*)	36.70 (9.85)	-
Education		
Elementary/middle school	383	56.7
Incomplete higher education	126	18.7
Complete higher education	166	24.6
Family income (in minimum wages)**		
< 2	204	30.2
2 a 3	334	49.5
≥ 3	137	20.3
Mean (sd*)	2.42 (1.18)	-
Number of people in the family		
≤ 3	331	49.0
≥ 4	344	51.0
Mean (sd*)	3.55 (1.29)	-

Continue

Continuation

Marital status		
Single/divorced	272	40.3
Married/stable union	403	59.7
Skin color		
White	87	12.9
Black	97	14.4
Brown	477	70.7
Indigenous/Yellow	14	2.0
Health training		
No	434	64.3
Yes	241	35.7
Occupational characteristics	**n**	**%**
Length of time working in the health sector (in years)		
< 1	165	24.4
1 a 5	199	29.5
> 5	311	46.1
Mean (sd*)	6.62 (5.83)	-
Length of time working as a CHA (in years)		
< 1	178	26.4
1 a 5	204	30.2
> 5	293	43.4
Mean (sd*)	6.29 (5.67)	-
Weekly workload as a CHA		
24 h	42	6.2
40 h	633	93.8
Mean (sd*)	39.00 (3.86)	-
Number of families monitored		
Up to 120	354	52.4
More than 120	321	47.6
Mean (sd*)	120.89 (41.94)	-
Type of link		
Civil servant	175	25.9
Contractor/lecturer/service provider	500	74.1

Continue

Continuation

Works other jobs		
No	610	90.4
Yes	65	9.6
Physical activity	**n**	**%**
Physical activity time in a week (in minutes)		
< 150 (physically inactive)	218	32.3
≥ 150 (physically active)	457	67.7
Mean (sd*)	275.41 (219.79)	
Total sitting time in a week (in minutes)		
≤ 500	374	55.4
> 500	301	44.6
Mean (sd*)	533 (321.90)	

* Standard deviation; ** Minimum wage in 2018: R$ 954.00.
CHA: Community health agent.
Source: Own elaboration.

Lower scores, which indicate worse health conditions, were found among females, older participants, those who were married, those who worked more than once, those who had permanent employment, those who had worked longer in the health sector, and those who worked as CHAs. Participants who practiced more than 150 minutes of physical exercise per week had worse scores in the domains of low back pain, low back function, and function in social life. Concerning the total time spent sitting in a week, the difference between the means of those who spent up to 500 minutes and those who spent more than 500 minutes was small (**Table 2**).

Table 2 Japanese Orthopaedic Association Back Pain Evaluation Questionnaire (JOABPEQ) scores among community health agents working in the Family Health Strategy in Montes Claros, Minas Gerais, Brazil, 2018 (n = 675)

Sociodemographic variable	Low back pain		Low back function		Walking		Function in social life		Mental health	
	x̄*	sd**	x̄*	sd**	x̄*	sd**	x̄*	sd**	x̄*	sd**
Sex										
Male	66.40	27.91	87.50	21.20	92.86	14.74	84.91	16.77	68.99	17.05
Female	53.98	31.38	78.66	26.86	87.24	18.42	78.14	20.48	61.43	19.52
Age										
≤ 30	62.52	30.00	88.83	17.81	92.05	15.05	84.66	16.92	65.03	19.13
31 a 40	53.97	31.70	80.17	25.37	87.27	18.32	76.95	20.96	61.11	19.73
≥ 41	52.63	30.84	72.62	30.52	85.81	19.39	77.10	20.74	62.28	18.97

Continue

Continuation

Education										
Elementary/middle school	54.56	32.04	76.81	28.53	86.82	18.51	77.60	20.95	62.73	20.23
Incomplete higher education	56.92	30.50	84.66	22.57	90.87	17.27	81.98	18.43	62.94	17.17
Complete higher education	58.53	29.56	84.14	21.93	89.13	17.09	80.88	18.92	62.24	18.87
Family income (in minimum wages*)**										
< 2	55.17	29.65	79.64	25.91	88.04	17.99	79.48	19.82	63.37	20.45
2 a 3	56.11	32.13	79.75	27.07	87.97	17.99	79.27	19.96	62.22	19.42
≥ 3	56.83	31.15	81.51	24.68	88.74	18.12	78.73	20.85	62.60	17.45
Number of people in the family										
≤ 3	57.75	31.26	81.19	26.46	89.63	16.59	80.64	19.98	62.82	19.58
≥ 4	54.27	31.02	79.01	25.98	86.71	19.16	77.87	20.10	62.48	19.13
Marital status										
Single / divorced	58.88	29.08	85.33	21.29	89.35	17.67	81.79	18.65	63.73	20.40
Married/stable union	54.02	32.38	76.53	28.56	87.33	18.18	77.50	20.82	61.91	61.91
Skin color										
White	60.26	31.67	83.72	19.68	90.07	15.45	81.33	18.75	61.60	19.01
Black	57.00	31.71	77.84	28.05	84.83	20.93	76.87	22.88	63.11	21.95
Brown	55.04	30.95	80.12	26.69	88.62	17.57	79.41	19.73	62.75	19.03
Indigenous/yellow	54.08	32.27	71.43	31.47	83.16	22.69	76.25	19.08	62.41	12.91
Health training										
No	58.50	29.68	82.47	23.88	89.35	16.02	80.97	19.17	64.60	18.09
Yes	51.45	33.24	75.80	29.54	85.98	20.93	76.09	21.29	59.14	20.98
Occupational characteristics	**x̄***	**sd****	**x̄***	**sd****	**x̄***	**sd****	**x̄***	**sd****	**x̄***	**sd****
Length of time working in the health sector (in years)										
< 1	62.80	27.79	89.84	16.61	93.25	14.09	85.84	14.58	69.52	15.57
1 a 5	61.18	29.36	82.91	22.14	89.61	15.42	82.10	18.71	66.04	17.97
> 5	49.06	32.58	73.12	30.49	84.52	14.58	73.90	21.96	56.86	20.30
Length of time working as a CHA (in years)										
< 1	64.25	27.67	90.40	16.17	93.54	13.76	86.50	14.30	69.44	15.69
1 a 5	59.68	29.33	82.35	22.16	88.99	15.64	81.88	18.75	66.35	17.89
> 5	48.42	32.71	72.27	30.92	84.30	20.70	72.99	22.02	55.97	20.21
Weekly workload as a CHA										
24 h	46.26	25.59	75.00	33.02	85.88	20.53	77.73	22.79	59.94	17.44
40 h	56.62	31.41	80.41	25.70	88.30	17.82	79.32	19.90	62.83	19.46

Continue

Continuation

Number of families monitored										
Up to 120	57.47	30.81	81.16	25.23	88.18	18.20	79.31	19.67	63.32	19.38
More than 120	54.33	31.51	78.88	27.26	88.10	17.79	79.13	20.55	61.91	19.30
Type of link										
Civil servant	46.69	33.24	70.57	32.94	82.49	22.83	72.12	22.74	54.26	21.41
Contractor/lecturer/ service provider	59.24	29.75	83.42	22.51	90.13	15.50	81.72	18.44	65.59	17.66
Works other jobs										
No	56.56	30.78	80.41	26.09	88.24	18.15	79.78	19.94	62.93	19.24
Yes	50.55	34.35	76.92	27.47	87.25	16.58	74.01	20.73	60.01	20.15
Physical activity	**x̄***	**sd****	**x̄***	**sd****	**x̄***	**sd****	**x̄***	**sd****	**x̄***	**sd****
Time spent doing physical activity in a week (minutes)										
< 150 (physically inactive)	59.83	31.74	81.42	26.94	87.48	19.14	80.32	19.54	61.82	19.18
≥ 150 (physically active)	54.13	30.75	79.43	25.88	88.46	17.43	78.70	20.32	63.04	19.42
Total sitting time in a week (minutes)										
≤ 500	56.30	29.78	78.64	26.86	87.28	18.21	78.76	20.27	63.96	18.86
> 500	55.57	32.85	81.86	25.34	89.21	17.68	79.81	19.85	61.01	19.82

* Mean; **Standard deviation; ***Minimum wage in 2018: R$ 954.00.
CHA: Community health agent.
Source: Own elaboration.

Table 3 shows the mean and standard deviation of the degree of pain in the back, buttocks, or legs and numbness in the buttocks or legs of the workers studied. For all three items, the mean scores were higher in females, in patients aged 41 or over and in physically active patients. Regarding the length of time they had worked in the health sector and as CHAs, there were increasing values as the length of time they had worked increased. In addition, CHAs who accompanied more than 120 families reported higher levels of pain in the back, buttocks, and legs; however, about numbness, there was no difference in relation to the number of families accompanied.

Table 3 Assessment of the degree of pain and numbness of community health agents working in the Family Health Strategy in Montes Claros, Minas Gerais, Brazil, 2018 (n = 675)

	Average*	Standard deviation
Back pain		
General	3.58	2.69
Sex		
Male	2.61	2.32
Female	3.76	2.72

Continue

Continuation

Age (in years)		
≤ 30	2.87	2.50
31 a 40	3.67	2.80
≥ 41	4.06	2.61
Length of time working in the health sector (in years)		
< 1	2.87	2.47
1 a 5	3.22	2.56
> 5	4.18	2.77
Length of time working as a CHA (in years)		
< 1	2.76	2.44
1 a 5	3.27	2.48
> 5	4.28	2.81
Number of families monitored		
Up to 120	3.46	2.73
More than 120	3.70	2.67
Physical activity time in a week (in minutes)		
< 150 (physically inactive)	3.17	2.60
≥ 150 (physically active)	3.77	2.71
Pain in the buttocks or legs		
General	3.42	2.89
Sex		
Male	2.36	2.57
Female	3.63	2.90
Age (in years)		
≤ 30	2.47	2.70
31 a 40	3.57	2.88
≥ 41	4.06	2.86
Length of time working in the health sector (in years)		
< 1	2.14	2.36
1 a 5	3.41	2.76
> 5	4.11	3.00
Length of time working as a CHA (in years)		
< 1	2.14	2.39
1 a 5	3.51	2.78
> 5	4.14	2.99

Continue

Continuation

Number of families monitored		
Up to 120	3.34	2.85
More than 120	3.52	2.93
Physical activity time in a week (in minutes)		
< 150 (physically inactive)	3.05	2.81
≥ 150 (physically active)	3.60	2.92
Numbness in the buttocks or legs		
General	2.14	2.64
Sex		
Male	1.51	2.30
Female	2.26	2.69
Age (in years)		
≤ 30	1.58	2.40
31 a 40	2.26	2.65
≥ 41	2.48	2.76
Length of time working in the health sector (in years)		
< 1	1.29	2.08
1 a 5	2.03	2.50
> 5	2.66	2.87
Length of time working as a CHA (in years)		
< 1	1.33	2.07
1 a 5	2.04	2.53
> 5	2.70	2.88
Number of families monitored		
Up to 120	2.14	2.64
More than 120	2.14	2.64
Physical activity time in a week (in minutes)		
< 150 (physically inactive)	2.10	2.71
≥ 150 (physically active)	2.16	2.61

* Pain scale ranging from 0 to 10.
CHA: Community health agent.
Source: Own elaboration.

Discussion

This study analyzed factors related to low back pain in CHAs. It is noteworthy that female patients showed results indicating greater intensity of low back pain. There was a growing increase in low back pain as age and length of

time working in the health sector and as a CHA increased. In addition, patients with more than one job and who work with a greater number of families also had a greater impact caused by low back pain.

It was observed that the participants in this study had a sociodemographic profile similar to that found in studies carried out in other regions of Brazil[17,18], with the majority being women, aged between 31 and 40, living with a partner, with a primary or secondary level of schooling, and with more than three years of experience as a CHA.

The scores obtained in all the assessment domains indicate greater impairment of low back pain in women when compared to men. This result is consistent with the literature[19-21]. The likelihood of chronic pain in the low back and other parts of the body was higher in women[22].

Gender differences in the manifestation of pain can be explained by various factors. Inequal social roles, for example, often lead to men being discouraged from showing pain, while symptoms of mental disorders such as anxiety and depression, which are more prevalent in women, are associated with bodily pain. Other interpretations of the higher prevalence in women are cited in the literature, such as hormonal changes, coping strategies for pain, double working hours, and repetitive tasks[23].

Participants aged 31 or over reported higher levels of pain in all domains of the instrument. This finding corroborates the results of other studies[24,25]. Advancing age emerges as a risk factor for the development of low back pain, as the aging process contributes to wear and tear on musculoskeletal structures[26]. However, studies indicate that the risk is higher in adults of working age, with a possible decrease from the sixth decade of life onwards[24].

Regarding schooling, participants with a primary/middle school education had scores that indicated greater impairment in low back pain, lumbar function, ambulation and function in social life. A study evaluating the quality of life of CHAs found a decrease in quality of life when associated with pain[27]. It should be noted that higher levels of schooling are associated with a better understanding of the factors that can lead to illness, making individuals take greater care of their health[28].

Being married or in a stable union was a variable that showed a disadvantage compared to single and divorced people in all the evaluation items. A similar result was observed in other studies[3,29]. It is noteworthy that the greater risk of developing low back pain is possibly not directly associated with marital status, but with the accumulation of household chores and professional working hours, both of which pose ergonomic risks, especially in this context where the majority are women who generally carry out more household chores[3].

Concerning length of time working in the health sector and as a CHA, it was found that those who had been working for more than five years had scores which indicated greater intensity of symptoms in all the domains of the instrument, and the longer the time working, the greater the damage to the items assessed, as the score decreased as the length of time working increased.

The scientific literature has shown risk factors in the work routine of CHAs associated with the manifestation of low back pain, including the need to walk distances to carry out home visits; the time spent standing; the weight of backpacks containing the medical records and files needed for the job; the use of inappropriate footwear; work overload; and incorrect posture while sitting during home visits[6,30].

A cross-sectional study[3] carried out in Belo Horizonte, Minas Gerais, between 2008 and 2009, which assessed health professionals, found a prevalence of 59.6% of pain in the arms, legs, or back in CHAs, associated with daily commuting over long distances during their working day. A similar study[4] carried out in 2011 in the municipality of Jequié, Bahia, which assessed musculoskeletal pain in CHAs, found a higher prevalence of 84.8%, showing that the work of CHAs involves exposure to biomechanical risks that can lead to body pain. In another study of CHAs in Minas Gerais, 82.98% reported musculoskeletal symptoms in the last seven days and 93.62% in the last 12 months[5]. These results reinforce the findings of this study in relation to length of service and potential occurrence of low back pain.

Controversially, CHAs with shorter working hours had scores indicating more intense low back pain. Considering that low back pain can be influenced by factors in the work environment, as well as by habits outside this context, the relationship between workload, the role of CHA, and low back pain seems complex, requiring further analysis to identify the precise determinants of this apparently contradictory association.

About the type of employment contract held by CHAs, permanent employees showed a greater loss in all the assessment domains when compared to contracted employees. The job stability of permanent employees allows them to remain in the job for longer and consequently to be more exposed to occupational risks.

The practice of physical activity is pointed out in several studies as a protective factor for back pain[3,31,32], however, in this investigation, those who were physically active (those who practiced 150 minutes or more of physical activity per week) had scores that indicate greater intensity of back pain. Another controversial result was in relation to the variable "total sitting time in a week", in which those who reported spending less time sitting had worse scores for walking, although studies[33-35] show that a sedentary lifestyle is a risk factor for low back pain.

As for the results relating to physical activity, it should be noted that in this study the evaluation was limited to the time spent doing physical activity, and the quality, type, and intensity of the exercise practiced were not assessed. This limitation may explain why the results differ from literature. It should also be noted that CHAs are exposed to occupational risks that may be associated with low back pain in their daily activities and, perhaps, even when practicing physical activity, the symptoms persist. It should also be noted that the design of this study does not allow us to establish a temporal relationship between low back pain and the variables analyzed. In this sense, patients with low back pain may be more physically active as a form of treatment for their pain.

There are no known studies that have assessed low back pain in CHAs using the JOABPEQ, making it impossible to compare the results with the scientific literature in relation to assessing the degree of back pain, pain in the buttocks or legs, and numbness in the buttocks or legs. However, it is important to note that the higher the score, the greater the degree of pain. In the specific case of this study, the averages presented by the CHAs on the aforementioned scales were relatively low.

This study had limitations: the cross-sectional study design, which does not allow a temporal relationship to be established between the outcome and the variables of interest; the sample which, despite being a census, was restricted to professionals from one city; no multivariate analysis was carried out to identify confounding variables, which reduces the accuracy of interpreting the association between the study variables and low back pain; and healthy worker bias[36], which may underestimate the study's findings, as CHAs with low back pain could be away from work and not be reached by the study. However, the novelty of this study is noteworthy, as other studies evaluating low back pain in CHAs in the region where the study was carried out are unknown.

Conclusion

This study assessed low back pain in CHAs, showing that female workers, older workers, married workers, those who worked in more than one job, those with a permanent employment contract, and those with more time working in the health sector and as CHAs had scores that indicate a negative impact of low back pain, corroborating what the literature has shown about the risk factors associated with the profession in question. Understanding these variables allows for a more individualized approach to pain, increasing awareness of its impacts. For health services, these findings highlight the need for preventive and care strategies, such as ergonomic measures, rehabilitation programs and occupational support, with the aim of reducing sick leave, improving the quality of care and promoting the health of professionals.

Considering chronic low back pain as a major factor in quality of life and productivity, it is necessary to implement strategies to reduce the occupational risks found in the work practices of CHAs in order to minimize the effects of low back pain, with the aim of improving productivity at work, improving the performance of activities of daily living in the family environment, consequently contributing to an improvement in self-esteem, self-perception of health, quality and lifestyle.

References

1. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Guia prático do agente comunitário de saúde. Brasília, DF: Ministério da Saúde; 2009.
2. Suyama EH, Lourenção LG, Cordioli DF, Cordioli JR Junior, Miyazaki MC. Estresse ocupacional e sintomas osteomusculares em Agentes Comunitários de Saúde. Cad Bras Ter Ocup. 2022;30:e2992. https://doi.org/10.1590/2526-8910.ctoAO22692992
3. Barbosa RE, Assunção AÁ, Araújo TM. Distúrbios musculoesqueléticos em trabalhadores do setor saúde de Belo Horizonte, Minas Gerais, Brasil. Cad Saude Publica. 2012 Aug;28(8):1569–80. https://doi.org/10.1590/S0102-311X2012000800015
4. Mascarenhas CH, Prado FO, Fernandes MH. Fatores associados à qualidade de vida de Agentes Comunitários de Saúde. Cien Saude Colet. 2013 May;18(5):1375-86. https://doi.org/10.1590/S1413-81232013000500023
5. Paula IR, Marcacine PR, Castro SS, Walsh IA. Capacidade para o trabalho, sintomas osteomusculares e qualidade de vida entre agentes comunitários de saúde em Uberaba, Minas Gerais. Saude Soc. 2015;24(1):152-64. https://doi.org/10.1590/S0104-12902015000100012
6. Lopes DM, Lunardi Filho WD, Beck CL, Coelho AP. Cargas de trabalho do agente comunitário de saúde: pesquisa e assistência na perspectiva convergente assistencial. Texto Contexto Enferm. 2018;27(4):e3850017. https://doi.org/10.1590/0104-07072018003850017
7. Rodrigues T, Oliveira Fonseca R. Possibilidade de sobrecarga laboral do Agente Comunitário de Saúde: método do Discurso do Sujeito Coletivo. Cienc Saude (Porto Alegre). 2021;32(2):61-9.
8. Knezevic NN, Candido KD, Vlaeyen JW, Van Zundert J, Cohen SP. Low back pain. Lancet. 2021 Jul;398(10294):78–92. https://doi.org/10.1016/S0140-6736(21)00733-9
9. Urits I, Burshtein A, Sharma M, et al. Low back pain, a comprehensive review: pathophysiology, diagnosis, and treatment. Curr Pain Headache Rep. 2019;23(3):23. Published 2019 Mar 11. https://doi.org/10.1007/s11916-019-0757-1
10. Chou R. Low Back Pain. Ann Intern Med. 2021 Aug;174(8):ITC113–28. https://doi.org/10.7326/AITC202108170
11. Hartvigsen J, Hancock MJ, Kongsted A, Louw Q, Ferreira ML, Genevay S, et al. What low back pain is and why we need to pay attention. Lancet. 2018 Jun;391(10137):2356–67. https://doi.org/10.1016/S0140-6736(18)30480-X
12. BRASIL. Ministério da Saúde. Departamento de Informática do SUS – DATASUS. TabNet – Aplicativo para Tabulação de Dados. Disponível em: http://tabnet.datasus.gov.br/cgi/deftohtm.exe?cnes/cnv/prid02mg.def. Acesso em jan. 2022.
13. Fukui M, Chiba K, Kawakami M, Kikuchi S, Konno S, Miyamoto M, et al. JOA Back Pain Evaluation Questionnaire (JOABPEQ)/JOA Cervical Myelopathy Evaluation Questionnaire (JOACMEQ): the report on the development of revised versions. April 16, 2007. J Orthop Sci. 2009 May;14(3):348-65. https://doi.org/10.1007/s00776-009-1337-8
14. World Health Organization. WHO guidelines on physical activity and sedentary behaviour. Geneva: World Health Organization; 2020.
15. Poletto PR, Gobbo DK, Gotfryd AO, Catania SN, Sousa DC, Pereira SB. Adaptação cultural, confiabilidade e validade do Japanese Orthopaedic Association Back Pain Evaluation Questionnaire para o português brasileiro. Einstein (Sao Paulo). 2017;15(3):313-21. https://doi.org/10.1590/s1679-45082017ao3890
16. Pinheiro JS, Pontes-Silva A, Araujo GG, Mendes LP, Pires FO, Gomes CAFP, et al. Structural validity of the Japanese Orthopedic Association back pain evaluation questionnaire in individuals with chronic low back pain. Rev Assoc Med Bras. 2021 Aug;67(8):1087–92. https://doi.org/10.1590/1806-9282.20210087
17. Silva EB, Zanin L, Oliveira AM, Flório FM. Agentes comunitários de saúde: conhecimentos em saúde bucal e fatores associados. Cad Saude Colet. 2021;29(2):226-37. https://doi.org/10.1590/1414-462x202129020135
18. Pereira AM, Jucá AL, Lima IA, Facundes VL, Falcão IV. The quality of life of community health agents and possible contributions of occupational therapy. Cad Bras Ter Ocup. 2018;26(4):784-96. https://doi.org/10.4322/2526-8910.ctoAO1254
19. Bento TP, Genebra CV, Maciel NM, Cornelio GP, Simeão SF, Vitta A. Low back pain and some associated factors: is there any difference between genders? Braz J Phys Ther. 2020;24(1):79-87. https://doi.org/10.1016/j.bjpt.2019.01.012
20. Šagát P, Bartík P, Prieto González P, Tohănean DI, Knjaz D. Impact of COVID-19 quarantine on low back pain intensity, prevalence, and associated risk factors among adult citizens residing in Riyadh (Saudi Arabia): a cross-sectional study. Int J Environ Res Public Health. 2020;17(19):7302. https://doi.org/10.3390/ijerph17197302

21. Carvalho RC, Maglioni CB, Machado GB, Araújo JE, Silva JRT, Silva ML. Prevalence and characteristics of chronic pain in Brazil: a national internet-based survey study. BrJP. 2018;1(BrJP, 2018 1(4)):331-338. https://doi.org/10.5935/2595-0118.20180063

22. Chenot JF, Becker A, Leonhardt C, Keller S, Donner-Banzhoff N, Hildebrandt J, et al. Sex differences in presentation, course, and management of low back pain in primary care. Clin J Pain. 2008 Sep;24(7):578-84. https://doi.org/10.1097/AJP.0b013e31816ed948

23. Bizzoca D, Solarino G, Pulcrano A, Brunetti G, Moretti AM, Moretti L, et al. Gender-related issues in the management of low-back pain: a current concepts review. Clin Pract. 2023 Oct;13(6):1360–8. https://doi.org/10.3390/clinpract13060122

24. Gonzalez GZ, Silva T, Avanzi MA, Macedo GT, Alves SS, Indini LS, et al. Low back pain prevalence in Sao Paulo, Brazil: a cross-sectional study. Braz J Phys Ther. 2021;25(6):837-45. https://doi.org/10.1016/j.bjpt.2021.07.004

25. Kahere M, Ginindza T. The prevalence and psychosocial risk factors of chronic low back pain in KwaZulu-Natal. Afr J Prim Health Care Fam Med. 2022 Jan;14(1):e1-8. https://doi.org/10.4102/phcfm.v14i1.3134

26. Minetto MA, Giannini A, McConnell R, Busso C, Torre G, Massazza G. Common musculoskeletal disorders in the elderly: the star triad. J Clin Med. 2020;9(4):1216. https://doi.org/10.3390/jcm9041216

27. Santos FA, Sousa LP, Serra MA, Rocha FA. Fatores que influenciam na qualidade de vida dos agentes comunitários de saúde. Acta Paul Enferm. 2016;29(2):191-7. https://doi.org/10.1590/1982-0194201600027

28. Castro CM, Costa MF, Cesar CC, Neves JA, Sampaio RF. Influência da escolaridade e das condições de saúde no trabalho remunerado de idosos brasileiros. Cien Saude Colet. 2019 Oct;24(11):4153-62. https://doi.org/10.1590/1413-812320182411.05762018

29. Silva MC, Fassa AG, Valle NC. Dor lombar crônica em uma população adulta do Sul do Brasil: prevalência e fatores associados. Cad Saude Publica. 2004;20(2):377–85. https://doi.org/10.1590/S0102-311X2004000200005

30. Moreira KD, Bezerra ML, Nunes SF, Teixeira CM. Riscos na rotina de trabalho de Agentes Comunitários de Saúde de uma Equipe de Saúde da Família. J Manag Prim Health Care. 2019;10: https://doi.org/10.14295/jmphc.v10i0.955

31. Sipaviciene S, Kliziene I. Effect of different exercise programs on non-specific chronic low back pain and disability in people who perform sedentary work. Clin Biomech (Bristol). 2020 Mar;73:17-27. https://doi.org/10.1016/j.clinbiomech.2019.12.028

32. Corp N, Mansell G, Stynes S, Wynne-Jones G, Morsø L, Hill JC, et al. Evidence-based treatment recommendations for neck and low back pain across Europe: asystematic review of guidelines. Eur J Pain. 2021 Feb;25(2):275-95. https://doi.org/10.1002/ejp.1679

33. Koerich MH, Meirelles BH, Echevaría-Guanilo ME, Danielewicz AL, Schwertner DS, Knabben RJ. Disability in people with chronic low back pain treated in primary care. Fisioter Mov. 2021;34:e34121. https://doi.org/10.1590/fm.2021.34121

34. Sant'Anna PC, Olinto MT, Bairros FS, Garcez A, Costa JS. Dor lombar crônica em uma população de mulheres do Sul do Brasil: prevalência e fatores associados. Fisioter Pesqui. 2021;28(1):9-17. https://doi.org/10.1590/1809-2950/19011628012021

35. Bontrup C, Taylor WR, Fliesser M, Visscher R, Green T, Wippert PM, et al. Low back pain and its relationship with sitting behaviour among sedentary office workers. Appl Ergon. 2019 Nov;81:102894. https://doi.org/10.1016/j.apergo.2019.102894

36. Brown DM, Picciotto S, Costello S, Neophytou AM, Izano MA, Ferguson JM, et al. The healthy worker survivor effect: target parameters and target populations. Curr Environ Health Rep. 2017 Sep;4(3):364–72. https://doi.org/10.1007/s40572-017-0156-x

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