Factors that impact functional performance of elderly with low back pain

Fatores que impactam o desempenho funcional de idosos com dor lombar

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Abstract

Introduction: Low back pain is a common condition among older adults and an important cause of disability. **Objective:** To evaluate the relationship between functional performance of older adults with low back pain and the following variables: sociodemographic and clinical factors, self-perceived health and back pain beliefs. **Methods:** A cross-sectional study that used data from the Back Complaints in the Elders international consortium. Information about sociodemographic factors (sex, age, marital status, formal education), clinical factors (intensity and frequency of pain, comorbidities), self-perceived health, back pain beliefs and functional performance (measured by the disability component of the Late Life Function and Disability Instrument - LLFDI) were collected through self-report. 191 older adults above 60 years with a new episode of back complaints who did not have any cognitive disorder, visual or hearing impairment, or motor disabilities participated in the study. A bivariate analysis was conducted between each independent variable and each outcome. Associations with p < 0.20 were selected for the multiple linear regression analysis, which was carried out for each LLFDI domain. **Results:** The multiple regression coefficients of determination were significant despite the modest magnitude. The variables related to functional performance were

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back beliefs, self-perceived health, formal education, pain frequency and marital status. **Conclusion:** These results may contribute to the expansion of health professionals' work in the therapeutic approach of low back pain, broadening its focus beyond clinical aspects in order to value beliefs of older adults and their self-perceived health.

Keywords: Elderly. Low Back Pain. Disability. Beliefs. Self-Perception.

Resumo

Introdução: *A dor lombar é condição comum em idosos e importante causa de incapacidade nessa população.* ***Objetivo:*** *Avaliar a relação das variáveis sóciodemográficas, clínicas, autopercepção de saúde e crenças com o desempenho funcional de idosos com dor lombar.* ***Métodos:*** *Estudo transversal que utilizou dados do projeto multicêntrico Back Complaints in the Elders. A amostra foi de 191 idosos que relataram novo episódio de dor lombar em menos de 6 semanas e não apresentavam alterações cognitivas, deficiências visuais, auditivas e motoras graves. Através do auto relato, foram coletadas informações sobre características sóciodemográficas (sexo, idade, estado civil, escolaridade), clínicas (intensidade e frequência da dor, comorbidades), autopercepção de saúde, crenças em relação às consequências da dor lombar e desempenho funcional (componente de incapacidade do Late Life Function and Disability Instrument - LLFDI). Foi realizada a análise bivariada de cada variável independente com cada desfecho (6 diferentes escores fornecidos pelo componente de incapacidade do LLFDI) e aquelas que apresentaram significância p < 0,20 entraram nos modelos de regressão múltipla para cada domínio do LLFDI.* ***Resultados:*** *Os coeficientes de determinação dos modelos multivariados foram significativos, apesar da modesta magnitude. As variáveis que se relacionaram com o desempenho funcional foram crenças, autopercepção de saúde, escolaridade, frequência da dor e estado civil.* ***Conclusão:*** *Esses resultados poderão contribuir para ampliação da atuação dos profissionais de saúde para além dos aspectos clínicos, valorizando as crenças dos idosos e sua autopercepção de saúde na abordagem terapêutica com foco na dor lombar.*

Palavras-chave: *Idosos. Dor Lombar. Incapacidade. Crença. Autopercepção.*

Introduction

Musculoskeletal conditions in the elderly are a major cause of disabilities, especially low back pain which is considered a worldwide problem (1, 2).

Low back pain is defined as a pain between the lower edge of the 12th rib and the lower gluteal line, which is intense enough to limit usual activities or change daily routine (3, 4). It is considered a multifactorial condition relating to personal, biomechanical, psychosocial and environmental factors (5), and presents different stages of disability and chronicity (4, 6). It is prevalent in females and in the age group that ranges from 40 to 80 years old (6).

Low back pain is a common condition with an incidence rate of 25% in Brazilian older adults (7). Particular attention is drawn to the fact that functional performance is influenced by factors that go beyond the clinical characteristics of the individual.

Studies have shown that older adults with low back pain presented greater difficulty performing daily activities (8, 9). There is evidence that factors such as pain intensity and frequency (10, 11) and sex (10) are associated with the functional performance of this population.

No studies were found correlating beliefs and self-perception about health with the functional performance of elderly with low back pain. However, two studies with individuals of various ages have shown that negative beliefs regarding low back pain are associated with a higher level of disability (12, 13). A study performed with older adults without specific health conditions verified that the greater the degree of dependence, the greater the chance of the elderly perceiving their health as poor (14).

There is no sufficient scientific evidence to correlate these variables with the functional performance of elderly with low back pain, which

is fundamental to understand the real impact of this condition on their lives. Thus, the objective of this study was to evaluate the relationship of sociodemographic variables (sex, age, marital status, level of education), clinical variables (intensity and frequency of pain, comorbidities) and the variables of self-perception of health and beliefs with the functional performance of elderly with low back pain.

Methods

The present study uses a cross-sectional approach, and is part of the multicenter project Back Complaints in the Elders - BACE, developed by Australia, the Netherlands and Brazil, and has a published protocol (15). The BACE was approved by the Research Ethics Committee of *UFMG* under the opinion number: 0100.1.203.000-11. Participants signed the Free and Informed Consent Term.

Sample

The convenience sample consisted of data of 191 older adults in the age group between 60 and 94 years old, evaluated from the baseline of the BACE study between September 2011 and November 2012. Inclusion criteria for BACE were: age over 55 years old and presence of a new episode of low back pain (less than 6 weeks). The study excluded elderly individuals with cognitive alterations, or visual, hearing or motor disabilities. Recruitment was done by referral of health professionals who work in primary care, outpatient and hospital services.

Instruments and Procedures

The BACE project protocol included numerous assessment tools (15). The Mini Mental State Examination (MMSE) was first performed to identify cognitive alterations, considering the cutoff points proposed by Bertolucci (16). In the present study we used data from the sociodemographic, comorbidities and self-perception of health questionnaires, as well as the following evaluation protocols:
- Visual Analogue Scale (VAS): Often used to measure pain intensity by means of a numerical estimate ranging from 0 to 10 (17).

- Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC): Quality of life questionnaire developed for individuals with knee and hip osteoarthritis. It evaluates three domains scored on a five-point Likert scale, namely: pain (5 items), rigidity (2 items) and physical function (17 items). This study used the first part of the questionnaire (pain domain). The average score for each domain ranges from 0 to 100. The higher the score, the greater the effects (18). This test was validated for the Brazilian population (18), and was able to report the pain profile in individuals with and without low back pain, regardless of diagnosis (19).
- Back Beliefs Questionnaire (BBQ): Assesses beliefs regarding the potential negative consequences of low back pain. It consists of 14 items, of which 9 are valid for the final score and 5 are used as distractors. Each item is scored on a five-point Likert scale. The lower the score, the more negative the beliefs (20). The BBQ was translated and adapted for the Brazilian elderly population (21).
- Late Life Function and Disability Instrument (LLFDI): Evaluates the functional performance of the elderly. It is divided into two components: function and disability. The disability component was used in this study, which refers to performance in socially defined activities and evaluates the frequency of achievement and limitation in 16 daily activities, which includes basic, instrumental and advanced activities of daily living. The frequency dimension is divided into two role domains: social role (9 items) and personal role (7 items); and the limitation dimension in: instrumental role (12 items) and management role (4 items). The later division resulted in a group of activities involving more physical skills (instrumental role) and another involving more cognitive skills (management role). The instrument is applied with graphical assistance for answers.

LLFDI provides total scores for frequency and limitation, as well as for all four role domains. Each evaluated item receives a score that ranges from 1 to 5. The sum of each item's score results in a final raw score that is transformed into a scale of 0 to 100.

The closer to 100, the higher the frequency of activities and the lower the limitation (22). This instrument was adapted for the Brazilian population and presented high levels of intra and inter-examiner reliability (23).

Statistical analysis

First, the statistical analysis had the goal of characterizing the sample. Then, the bivariate analysis of each independent variable was performed with each outcome. As the distribution of data was not considered normal, the Kruskal-Wallis test was performed for nominal variables with more than two categories, the Mann-Whitney test for the nominal variables with two categories, and the Spearman correlation for the quantitative variables. Results with p-value lower than 0.20 identified variables that were later included in the multivariate regression models. A significance level of 5% was considered in all inferential analyses.

Results

The sample consisted of 191 older adults from the community aged 60 years old and over. Demographic, clinical, self-perceived health, beliefs, and functional performance characteristics are presented in Tables 1 and 2.

The bivariate analyzes that presented p < 0.20 indicated the independent variables entered into the multiple linear regression models for each LLFDI domain. These models used the enter method for variables selection. The results of bivariate analysis can be seen in Table 3.

The regression models for each domain of the LLFDI test are shown in Table 4. The coefficients of determination of the multivariate models were significant, despite the limited magnitude. The models that presented the highest explanatory value ($R^2 = 0.20$) were the instrumental role and limitation in performing the activities, in which the variables beliefs and self-perception of health remained significant. And also pain frequency, but only in the instrumental role. The results referring to the management role area did not reach statistical significance, thus they are not represented in the table.

Table 1 - Demographic, clinical and self-perceived health characteristics of participants (n = 191)

	N (%)
Sex	
F	167 (87.4)
M	24 (12.6)
Age	
60 to 74	155 (81.2)
75 and over	36 (18.8)
Marital Status	
Single	37 (19.4)
Married / living with a partner	83 (43.4)
Divorced	20 (10.5)
Widower	51 (26.7)
Level of Education	
Illiterate	8 (4.2)
Elementary School	109 (57.1)
High School/Technical Course	47 (24.6)
University Degree/Post-graduation	27 (14.1)
Pain frequency	
Not every day	52 (27.2)
Every Day	139 (72.8)
Self-perception of health	
Excellent/Very Good	27 (14.1)
Good	106 (55.5)
Bad	58 (30.4)
Comorbidities	
None	6 (3.2)
1 up to 3	69 (36.1)
4 or more	116 (60.7)

Table 2 - Characterization of the sample of clinical variables, beliefs and functional performance

	N	Average (Standard deviation)
WOMAC	189	49.6 (21.5)
VAS	191	6.9 (2.59)
Back Beliefs Questionnaire	190	24.1 (6.6)
LLFDI		
Social role	184	44.3 (7.9)
Personal role	189	56.6 (11.3)
Instrumental role	183	64.9 (12.6)
Management role	186	79.9 (15.6)
Total frequency	182	49.5 (5.8)
Total limitation	180	65.6 (11.3)

Note: WOMAC - Western Ontario and McMaster Universities Arthritis Index; VAS – Visual Analogue Scale; LLFDI – Late Life Function and Disability Instrument.

Table 3 - Bivariate analysis of factors associated with LLFDI dimensions and areas

LLFDI Components and Domains	Performance frequency	Performance limitation	Social role	Personal role	Instrumental role	Management role
Sex						
F	48.5 (33.7-76.3)	63.4 (36.3-100)	43.6 (28.3-74.0)	53.8 (34.4-100)	62.3 (31.8-100)	78.3 (26.0-100)
M	49.1 (38.1-58.0)	65.7 (51.8-89.3)	45.6 (33.3-60.3)	51.7 (38.9-73.8)	63.9 (52.2-88.9)	82. 9 (51.7-100)
Value p²	0.965	**0.202***	0.407	**0.078***	**0.148***	0.634
Age						
60 up to 74	48.8 (33.7 -70.6)	63.4 (36.3-100)	43.6 (28.3-70.3)	53.8 (34.5 -100)	62.3 (31.8-100)	82. 9 (26.0-100)
75 or more	47.6 (39.4-76.3)	62.0 (49.2-100)	41.1 (31.8-74.0)	51.7 (31.8-74.0)	62.3 (49.4-100)	74.5 (41.0-100)
Value p²	**0.119***	0.650	**0.110***	0.498	0.866	0.513
Marital Status						
Single	47.9 (40.7-60.0)	65.6 (47.8-100)	44.3 (30.1-56.6)	56.3 (37.5-100)	64.4 (42.2-100)	82. 9 (41.0-100)
Married/Living with a partner	49.5 (38.1-70.6)	63.4 (49. 9-100)	44.9 (30.1-70.3)	53.8 (38.9-84.0)	62.3 (46.5-100)	78.3 (46.8-100)
Divorced	49.5 (42.0-61.1)	69.2 (36.3-100)	44.9 (30.1-64.7)	57. 8 (46.2-100)	66.6 (31.8-100)	86.2 (41.0-100)
Widower	47.56 (33.68-76.31)	60.62 (36.31-89.31)	42.39 (28.30-74.02)	53.84 (34.49-100)	60.40 (33.74-100)	78.32 (26.05-100)
Value p¹	**0.170***	**0.025***	**0.098***	0.483	**0.026***	**0.152***
Educational Level						
Illiterate	45.1 (33.7-50.1)	59.0 (49.2-75.6)	37.3 (28.3-51.8)	47.0 (34.5-56.3)	58.6 (44.5 -74.1)	69.2 (63.9 -100)
Elementary School	48.8 (38.1-76.3)	62.6 (36.3-100)	42.4 (28.3-74.0)	53.8 (38.9-100)	61.3 (33.7-100)	78.3 (26.0-100)
High School/ Technical Course	48.2 (42.0-61.1)	64.1 (52.5-100)	43.6 (31.8-64.7)	53.8 (37.5-84.0)	64.4 (46.5-100)	82. 9 (51.7-100)
University Degree/Post-Graduation	50.8 (41.4-70.6)	69.2 (36.3-100)	45.6 (30.1-70.3)	56.3 (43.2 -100)	65.5 (31.8-100)	86.2 (41.0-100)
Value p¹	**0.036***	**0.088***	**0.130***	**0.061***	0.217	**0.040***
Pain frequency						
Not every day	48.5 (33.7-70.6)	66.4 (51.2-100)	42.4 (28.3-70.3)	55.1 (34.5-100)	67.8 (46.5-100)	80.6 (41.0-100)
Every day	48.8 (38.1-76.3)	62.6 (36.3-100)	43.6 (28.3-74.0)	53.8 (37.5-100)	61.3 (31.8-100)	80.6 (26.0-100)
Value p²	0.834	**0.051***	0.933	0.582	**0.009***	0.729
Self-perception of health						
Excellent/Very Good	48.8 (41.4-70.6)	65.63 (49. 9-100)	42.4 (31.8 -70.38)	53.8 (43.2-100)	65.0 (50.4 -100)	82. 9 (46.8-100)
Good	49.8 (33.7-76.3)	64.8 (47.8-100)	44.9 (28.3-74.0)	56.3 (34.5-100)	64.4 (42.2-100)	82. 9 (26.0-100)
Bad	46.9 (39.4-65.1)	60.6 (36.3-100)	42.4 (28.3-62.4)	51.7 (37.5-84.0)	59.5 (31.8-100)	74.5 (34.2-100)
Value p¹	**0.024***	**0.000***	**0.088***	**0.108***	**0.000***	**0.033***
Comorbidities						
None	53.0 (42.6-76.3)	62.35 (56.2-80.0)	49.65 (33.3-74.0)	61.0 (41.7-100)	63.5 (53.1-79.0)	74.5 (67.5-100)
1 up to 3	48.8 (40.7-61.1)	64.8 (51.8-100)	44.9 (30.1-64.7)	53.8 (37.5-100)	64.4 (51.3-100)	82.9 (41.0-100)
4 or more	48.2 (33.7-65.1)	62.6 (36.3-100)	43.6 (28.3-64.7)	53.8 (34.5-100)	61.3 (31.8-100)	78.3 (26.0-100)
Value p¹	0.436	0.217	0.237	0.363	**0.130***	0.345
WOMAC (rho)	-0.2	-0.2	-0.1	-0.0	-0.3	-0.2
Value p³	**0.119***	**0.001***	**0.071***	0.861	**0.000***	**0.010***

(To be continued)

Table 3 - Bivariate analysis of factors associated with LLFDI dimensions and areas

LLFDI Components and Domains	Performance frequency	Performance limitation	Social role	Personal role	Instrumental role	Management role
VAS (rho)	-0.1	-0.1	-0.1	0.1	-0.1	-0.1
Value p[3]	0.406	**0.068***	**0.108***	**0.140***	**0.051***	0.214
Back Beliefs Questionnaire (rho)	0.2	0.3	0.2	0.2	0.3	0.2
Value p[3]	**0.001***	**0.000***	**0.017***	**0.001***	**0.000***	**0.008***

Note: [1]Kruskal-Wallis Test. [2]Mann-Whitney Test. [3]Spearman Correlation. *value p < 0.20 average (min – max)

Table 4 - Multiple linear regression models of factors associated with LLFDI dimensions and areas

LLFDI Components and Domains	Standardized coefficients				
	Beta	T	P	CI (95%)	
				Inferior	Superior
Performance frequency ($R^2 = 0.157$; p = 0.002)					
Constant		17.011	0.000	39.455	49.815
Re-codified marital status single	-0.102	-1.315	0.190	-3.734	0.748
Re-codified marital status divorced	-0.127	-1.636	0.104	-5.286	0.495
Re-codified marital status widower	-0.072	-0.909	0.365	-2.981	1.101
Re-codified educational level illiterate	-0.214	-2.927	**0.004***	-10.047	-1.953
Re-codified educational level High School	-0.068	-0.881	0.380	-2.956	1.132
Re-codified educational level University Degree	-0.005	-0.066	0.947	-2.714	2.538
Re-codified self-perception excellent	0.109	1.247	0.214	-1.033	4.576
Re-codified self-perception good	0.137	1.622	0.107	-0.345	3.518
WOMAC	0.050	0.644	0.521	-0.028	0.055
Back Beliefs	0.288	3.578	**0.000***	0.114	0.396
Re-codified Age	-0.101	-1.345	0.181	-3.639	0.690
Performance limitation ($R^2 = 0.201$; p = 0.0001)					
Constant		8.231	0.0001	41.454	67.620
Back Beliefs	0.219	2.688	**0.008***	0.099	0.644
Re-codified sex	0.095	1.221	0.224	-1.903	8.078
Re-codified self-perception excellent	0.159	1.841	0.067	-0.364	10.397
Re-codified self-perception good	0.170	2.034	**0.044***	0.111	7.480
Re-codified marital status single	0.052	0.651	0.516	-2.979	5.912
Re-codified marital status divorced	0.064	0.823	0.412	-3.223	7.829
Re-codified marital status widower	-0.085	-1.026	0.306	-6.205	1.961
Re-codified educational level illiterate	-0.048	-0.661	0.510	-10.251	5.110
Re-codified educational level High School	0.048	0.636	0.525	-2.610	5.093
Re-codified educational level University Degree	0.013	0.162	0.872	-4.518	5.326
Re-codified Pain Frequency	-0.130	-1.772	0.078	-6.832	0.369
VAS	0.006	0.073	0.942	-0.684	0.737
WOMAC	-0.087	-1.012	0.313	-0.135	0.043

(To be continued)

(Conclusion)

Table 4 - Multiple linear regression models of factors associated with LLFDI dimensions and areas

LLFDI Components and Domains	Standardized coefficients				
	Beta	T	P	CI (95%)	
				Inferior	Superior
Social role (R² = 0.142; p = 0.009)					
Constant		11.047	0.000	33.791	48.496
Re-codified age	-0.111	-1.466	0.145	-5.236	0.774
Re-codified marital status single	-0.151	-1.899	0.059	-6.196	0.120
Re-codified marital status divorced	-0.183	-2.336	**0.021***	-8.748	-0.734
Re-codified marital status widower	-0.121	-1.491	0.138	-5.006	0.698
Re-codified educational level illiterate	-0.172	-2.344	**0.020***	-12.274	-1.053
Re-codified educational level High School	-0.012	-0.154	0.878	-3.061	2.618
Re-codified educational level University Degree	-0.021	-0.262	0.794	-4.051	3.103
Re-codified self-perception excellent	0.101	1.138	0.257	-1.649	6.140
Re-codified self-perception good	0.138	1.633	0.104	-0.457	4.839
Back Beliefs	0.221	2.719	**0.007***	0.074	0.464
VAS	0.039	0.470	0.639	-0.394	0.639
WOMAC	-0.050	-0.569	0.570	-0.082	0.045
Personal role (R² = 0.114; p = 0.005)					
Constant		8.375	0.000	35.895	58.023
Re-codified sex	-0.075	-1.029	0.305	-7.477	2.352
Re-codified educational level illiterate	-0.154	-2.158	**0.032***	-16.576	-0.741
Re-codified educational level High School	-0.094	-1.249	0.213	-6.353	1.428
Re-codified educational level University Degree	0.025	0.331	0.741	-4.145	5.817
Re-codified self-perception excellent	0.068	0.805	0.422	-3.193	7.595
Re-codified self-perception good	0.078	0.957	0.340	-1.877	5.412
VAS	0.086	1.160	0.247	-0.262	1.010
Back Beliefs	0.228	3.009	**0.003***	0.135	0.650
Instrumental role (R² = 0.203; p = 0.0001)					
Constant		5.881	0.000	34.496	69.358
Re-codified sex	0.118	1.540	0.125	-1.220	9.884
Re-codified marital status single	0.081	1.038	0.301	-2.308	7.428
Re-codified marital status divorced	0.080	1.050	0.295	-2.856	9.346
Re-codified marital status widower	-0.077	-0.960	0.339	-6.637	2.295
Re-codified self-perception excellent	0.158	1.850	0.066	-0.377	11.629
Re-codified self-perception good	0.189	2.338	**0.021***	0.737	8.732
Re-codified Pain Frequency	-0.146	-2.050	**0.042***	-8.129	-0.153
VAS	0.010	0.126	0.900	-0.735	0.835
WOMAC	-0.091	-1.062	0.290	-0.153	0.046
Back Beliefs	0.216	2.756	**0.006***	0.117	0.705
Re-codified Comorbidities	-0.004	-0.053	0.958	-3.419	3.242

Note: *p < 0.05

Discussion

The results showed an association between beliefs regarding the consequences of low back pain, self-perception of health, level of education, frequency of pain and marital status with the functional performance of elderly with low back pain.

Beliefs were related to the frequency and limitation dimensions and their respective role domains, with the exception of the management role. This result suggests that older adults with low back pain who have more negative beliefs regarding the consequences of this condition have worse functional performance, performing their activities with less frequency and greater limitation.

In another study, individuals of different ages with chronic low back pain had more organic beliefs related to low back pain than those who did not report pain. Organic belief is related to concepts of disease, damage and loss. The authors argue that this belief means that individuals do not perform exercises that would be beneficial because this recommendation is contrary to what they believe (24), which impacts on the functional performance of these individuals, and may explain the result presented above.

The older adults in this study who had more positive beliefs regarding low back pain presented fewer limitations, indicating that they have a better ability to cope with the adversities brought by the condition. This result can be reinforced by a study that evaluated the relation of beliefs of older adults about old-age and disability recovery. Those with positive beliefs were found to be 44% more likely to recover (25).

Another result found was the correlation of positive self-perception of health with a smaller limitation for accomplishing activities. Like LLFDI, self-perception of health has a multidimensional structure, and it is associated with factors of the individual's context such as socioeconomic situation, social support network, health conditions and the use of health services (22, 26), which explains the correlation found. Both enable individuals to consider several factors when assessing their health condition and limitations. Another possible explanation is the relation between health self-perception and coping capacity. In a study of older adults without a specific health condition, the assessment of the severity and relevance of a health problem was more associated with the possibility of facing it than with the problem itself (27). In this study, the elderly who classified their health as good or excellent presented fewer limitations, that is, they dealt better with the difficulties of lower back pain than those who considered they had poor health.

The results indicated that low levels of education are associated with a lower frequency of activities, regardless of whether they are related to the social or personal roles of the elderly. A review in 2001 summarizing scientific evidence of the relationship between educational level and low back pain corroborates this finding. The authors put forward some hypotheses to explain the result: individuals with low levels of education may live in environments with more difficulties, may be less able to adapt to adversities and have less access to information and guidance regarding their health condition (28).

Despite the fact that a 2009 study indicated educational level as the best predictor of beliefs regarding the consequences of low back pain, as individuals with higher education had more positive beliefs and better adapted to the consequences of low back pain (29), individuals in this study with lower levels of education did not report more limitations during the activities. It can be assumed that elderly with less education are less aware of their health condition and thus, do not report limitations (30).

The results showed that marital status is associated to the performance frequency of the activities that integrate the social role. In this study, widowers presented worse performance, a result corroborated by the study by Schoenborn (31), in which 69.9% of elderly widowers presented limitations in physical and social functioning. It should be emphasized that activities that integrate the social role involve a network of relationships of the individual, which may be diminished due to the loss of the spouse.

Pain frequency was related to the performance limitation in instrumental role activities, which require physical abilities (22). This finding was also demonstrated in a study conducted with community older adults in which the frequency of low back pain was associated with a perceived difficulty in performing activities that required physical effort, such as heavy housework (10).

The functional performance of the elderly in management role activities was not related to any of the investigated variables. This can be explained by the fact that low back pain affects more activities that require some physical effort and the activities listed in this role involve more cognitive abilities (22).

In this study, the variables age and sex were not related to functional performance, contrary to what was presented in other research with the elderly (10, 32). Similar results were found in the study by Candotti et al. conducted with adults and elderly persons who had back pain (33).

There was also no significant relationship between performance in activities and intensity of pain and number of comorbidities. One possible explanation can be attributed to LLFDI's characteristic of asking about disabilities without a direct link to health. The instrument is based on a conceptual model that understands disability as the result of an interaction between the individual and the environment, which involves a broad set of social and cultural components. A study comparing the effects of using attributed and non-attributed health questions on the LLFDI limitation dimension score demonstrated that when there was no attribution to health individuals reported more disabilities, indicating the importance of other factors in addition to health in carrying out daily activities (34).

As a limitation to this study, it is worth highlighting the recruitment of health service participants, who may have selected elderly individuals with specific functional characteristics, as well as the predominance of the female sex in the sample, which reduced generalization of the results. In addition, the BACE project included a much broader spectrum of assessments than those used in the present investigation. Subsequent studies may make use of other collected information such as physical assessment data.

In conclusion, the functional performance of older adults with low back pain presented a relationship of modest magnitude with beliefs, self-perception of health, level of education, marital status and frequency of pain. The knowledge of these results can contribute to improving the evaluations and the interventions of health professionals, expanding its focus of action beyond the clinical aspects aimed at valuing the beliefs and self-perception of health of older adults.

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