

Comparative analysis of functional capacity among women with fibromyalgia and low back pain*

Análise comparativa da capacidade funcional entre mulheres com fibromialgia e lombalgia

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ABSTRACT

BACKGROUND AND OBJECTIVES: Musculoskeletal pain affects 3% to 5% of the world population, decreasing patients' functional capacity. This study aimed at comparing functional capacity among females with fibromyalgia or low back pain.

METHOD: Comparative study with convenience sample of 69 females with diagnosis of low back pain (35) or fibromyalgia (34) registered in the Orthopedics Outpatient Setting of a Public Teaching Hospital in Fortaleza/CE. Musculoskeletal Pain Evaluation Questionnaire was used, and the association among type of pain, socio-demographic characteristics and activities practiced by patients was analyzed with Chi-square (χ^2) and Fisher-Freeman-Halton tests.

RESULTS: From 69 participants, mean age was 45 ± 10.8 years, most were married (63.8%), most had (42.0%) low education level and were housewives (37.7%). The type of pain had no statistically significant association with marital status ($p = 0.289$), occupation ($p = 0.349$) and education level ($p = 0.907$). Major pain site for both groups was lumbar spine (56%) and was insidious (69%) and continuous (54.5%). Most did not practice physical exercises ($p < 0.001$), and complained of lack of energy, especially those with fibromyalgia (82.4%) ($p = 0.019$). From mentioned physical activities, walking was predominant in both groups (52.6%), followed by stretching, gymnastics and hydrogymnastics (47.4%) ($p = 1.000$). There has been impairment of occupational (21.7%), domestic (21.7%) and leisure (13.0%) activities.

CONCLUSION: Females with fibromyalgia had poorer functional capacity as compared to females with low back pain, deserving attention of health professionals for thorough pain evaluation, and assessment of functional changes of these patients.

Keywords: Chronic pain, Fibromyalgia, Functional capacity, Low back pain, Pain.

RESUMO

JUSTIFICATIVA E OBJETIVOS: Dores musculoesqueléticas acometem 3% a 5% da população mundial, reduzindo a capacidade funcional dos seus portadores. O objetivo deste estudo foi comparar a capacidade funcional entre mulheres com fibromialgia e lombalgia.

MÉTODO: Estudo comparativo, com amostra de conveniência formada por 69 mulheres diagnosticadas com lombalgia (35) e fibromialgia (34) cadastradas em Ambulatório de Ortopedia de Hospital Público de Ensino em Fortaleza/CE. Utilizou-se o Questionário de Avaliação da Dor Musculoesquelética e analisou-se a associação entre tipo de dor, características sociodemográficas e atividades praticadas pelas pacientes com os testes de Qui-quadrado (χ^2) e Fisher-Freeman-Halton.

RESULTADOS: Do universo de 69 participantes, a média de idade foi de $45 \pm 10,8$ anos, a maioria era casada (63,8%), a maior parte (42,0%) tinha baixo nível de escolaridade e era trabalhadora do lar (37,7%). O tipo de dor não mostrou associação estatisticamente significativa com estado civil ($p = 0,289$), ocupação ($p = 0,349$) e escolaridade ($p = 0,907$). A dor principal, em ambos os grupos, localizava-se na coluna lombar (56%) e tinha caráter insidioso (69%) e contínuo (54,5%). A maioria não praticava exercícios físicos ($p < 0,001$), queixando-se de falta de energia, predominante na fibromialgia (82,4%) ($p = 0,019$). Das atividades físicas citadas, sobressaiu a caminhada (52,6%) nos dois grupos, seguida de alongamento, ginástica e hidroginástica (47,4%) ($p = 1,000$). Também houve prejuízos nas atividades ocupacionais (21,7%), domésticas (21,7%) e de lazer (13,0%).

CONCLUSÃO: Mulheres com fibromialgia apresentaram pior capacidade funcional que mulheres com lombalgia, merecendo atenção dos profissionais de saúde para avaliação completa da dor e das modificações funcionais destas pacientes.

Descritores: Capacidade funcional, Dor, Dor crônica, Fibromialgia, Lombalgia.

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INTRODUCTION

Subject of increasing interest on part of health care researchers, chronic musculoskeletal pain is a public health problem because the overcrowding of services in different specialties and levels of attention to control it is frequent. In this context, chronic pain is partially legitimated as a disease and in the lack of known physiological mechanisms attention has turned to pain psychological and social determining factors¹.

In parallel, it is estimated that 50% to 60% of chronic pain patients become partially or totally disabled to perform daily life activities (DLA), in a transient or permanent manner, significantly impairing quality of life (QL)². This functional incapacity is primarily caused by pain associated to chronic clinical conditions, such as cancer, acquired immunodeficiency syndrome (AIDS), fibromyalgia (FM) and low back pain.

FM, painful syndrome of still unknown etiopathogenesis, is characterized by musculoskeletal pain in different body regions, sleep disorders, fatigue, short-lasting morning rigidity, sensation of edema and paresthesias³. On the other hand, low back pain is considered a major cause of morbidity, physical and psychosocial incapacity, being originated by mechanical-degenerative factors, including structural disorders, biomechanical deviations, or the interaction of both⁴. In addition, a recent study has shown a positive correlation of this type of pain with workload, and minor negative correlation with regular physical activity⁵.

Due to their chronicity, limitations caused by musculoskeletal pain go beyond functional capacity because they have a major impact on QL, especially evidenced by impairment of DLA and physical exercises of patients, who in general are females in professionally active age groups. Several of these females end up quitting their jobs and suffering psychological problems with social repercussion, such as depression and anxiety⁶. Such repercussions were observed by studies developed with patients seen in pain outpatient settings⁷.

The high prevalence (30% to 40%) of chronic pain in Brazil calls the attention to the need for studies trying to characterize chronic pain-related incapacity⁸. Understanding the impact of pain on activities and exercises may orient the type of health professionals interventions for a better assistance to chronic musculoskeletal pain patients, so that this pain is treated in all its dimensions, preventing the appearance of other diseases and chronic conditions such as obesity, diabetes mellitus and hypertension, among others.

So, this study aimed at comparing functional capacity between females with FM and low back pain, evaluating musculoskeletal pain repercussions in the practice of daily activities and physical exercises.

METHOD

This is a piece of the projects called "Tactile Technology to Evaluate Pain in Fibromyalgia People" and "Tactile Technology to Evaluate Pain in Low Back Pain People", carried out by the Tactile Technology Research Group for Pain Evaluation and Palliative Care (TECDOR/UECE). This is a descriptive and quantitative study about functional capacity to perform daily activities and physical exercises of individuals with musculoskeletal pain.

In the period from May 2005 to July 2006, 83 patients were se-

lected from a Public Teaching Hospital of Fortaleza/CE, who have looked for the Orthopedics and Traumatology Ambulatory to treat chronic musculoskeletal pain. Inclusion criteria were: aged between 25 and 65 years; diagnosis of low back pain or fibromyalgia for at least one year; consent and signature of the Free and Informed Consent Term (FICT) about research protocols.

In this study, 14 females (16.9%) were excluded for having evidence of cognitive or attention deficit which precluded the understanding of questions of the data collection tool. So, final sample was made up of 69 patients.

Data regarding DLA, practice of physical exercises and their capacity to practice them were obtained from open questions of the Musculoskeletal Pain Evaluation Questionnaire (MDPEQ). This questionnaire, adapted from the "Tool to evaluate people with chronic pain"⁹, has open and closed questions divided in 11 parts about, respectively: identification, anthropometric data, major pain, other pains, coping with pain, eating, activities and exercises, sleep and rest, perceptions, sexuality, values and beliefs.

The questionnaire was applied during nursing visits to evaluate chronic pain carried out by nurse researchers and nursing students, members of the TECDOR/UECE.

The association of type of pain, sociodemographic characteristics and activities performed by patients was analyzed with Chi-square (χ^2) and Fisher-Freeman-Halton tests. Mean age, number of children and family income were compared among females with low back pain and FM by Student's *t* and Mann-Whitney tests. Data were processed by the EPI-INFO program considering significant $p < 0.05$.

This study was approved by the Research Ethics Committee, UECE (04545014-5) and (04497421-3).

RESULTS

Table 1 shows sociodemographic characteristics of the sample according to the type of musculoskeletal pain.

Both groups were homogeneous as to variables: marital status, occupation and education level. It has called the attention the fact that from 44 married females, most had FM (56.8%). However, it was observed that the type of pain had no statistically significant association with the variables: marital status ($p = 0.289$), occupation ($p = 0.349$) and education level ($p = 0.907$).

Table 2 shows means of variables: age, number of children and family income according to the type of musculoskeletal pain.

It is observed that mean age and family income were equal for both groups. On the other hand, females with low back pain had fewer children as compared to females with FM, being this difference considered statistically significant ($p < 0.001$).

From 69 evaluated patients, 50.7% had low back pain and the others FM (49.3%). According to questionnaire information, major patients complaint included lumbar spine pain (56.0%), insidious (69.0%) and continuous (54.5%), lasting from one to three years (30.0%).

Functional capacity-related variables

Table 3 shows data of the comparative analysis of functional capacity for both groups.

It has been observed that a large part of low back pain patients

Table 1 – Distribution of patients according to sociodemographic data (n = 69).

Variables	Types of Pain				p value ⁽¹⁾
	Low Back Pain (n = 35)		Fibromyalgia (n = 34)		
	Nº	%	Nº	%	
Marital status					
Married	19	43.2	25	56.8	0.289
Single	10	62.5	6	37.5	
Divorced/widow	6	66.7	3	33.3	
Occupation					
Housewife	10	38.5	16	61.5	0.349
Unemployed	4	50.0	4	50.0	
General Services	5	83.3	1	16.7	
Secretary	3	50.0	3	50.0	
Other	13	56.5	10	43.5	
Education					
Up to incomplete elementary school	14	48.3	15	51.7	0.907
Complete elementary school + incomplete high school	12	50.0	12	50.0	
Complete high school or more	09	56.3	07	43.7	

⁽¹⁾ p of Fisher-Freeman-Halton.

Table 2 – Comparison of sociodemographic means according to type of pain.

Variables	Types of Pain		p value
	Low Back Pain Mean ± SD	Fibromyalgia Mean ± SD	
Age	44.4 ± 11.920	47.6 ± 9.329	0.225 ⁽¹⁾
Number of children	1.8 ± 1.623	2.5 ± 1.911	<0.001 ⁽²⁾
Family income (minimum wages)	2.5 ± 1.121	2.6 ± 1.184	0.774 ⁽²⁾

⁽¹⁾ Student's t teste; ⁽²⁾ Mann-Whitney test.

Table 3 – Distribution of patients according to type of pain and variables related to practiced activities.

Variables	Types of Pain				p value ⁽¹⁾
	Low Back Pain (n = 35)		Fibromyalgia (n = 34)		
	Nº	%	Nº	%	
1. Has enough energy					
Yes	16	45.7	6	17.6	0.019
No	19	54.3	28	82.4	
2. Practices physical activity					
Yes	9	25.7	10	29.4	p de $\chi^2 = 0.731$
No	26	74.3	24	70.6	
3. Practiced physical activity(ies)					
Walking	6		6		
Others ⁽²⁾	3		4		
4. Activities not practiced due to pain					
Occupacional	5	14.3	10	29.4	<0.001
Doméstic	6	17.1	9	26.5	
Physical exercises	26	74.3	24	70.6	
Leisure	7	20.0	2	5.9	

⁽¹⁾p of Fisher-Freeman-Halton.

⁽²⁾Stretching, gymnastics and hydrogymnastics.

(45.7%) assured having energy to practice physical exercises and daily activities, while just 17.6% of FM patients have reported this ($p = 0.019$).

On the other hand, the practice of daily activities was independent of the type of pain ($p = 0.731$) because in both groups most patients have reported not practicing physical exercises ($p < 0.001$). From those practicing physical activities, the most frequently mentioned were walking and gymnastics/stretching.

Both groups had impairment of occupational, domestic and leisure activities, however in a lower proportion (21.7%, 21.7% and 13.0%, respectively).

DISCUSSION

The sample profile (Table 1) confirms observations from other authors with regard to chronic pain estimates among Brazilians, with predominance of females who are married, unemployed and with low socioeconomic and education levels⁷.

As to the fact that most married females had FM, a research has also observed such result. In evaluating 40 females (20 with FM and 20 without FM) in a Medical Clinic Ambulatory, authors have observed statistically significant differences in marital status between groups, being most FM patients married and control patients had partners, but were not married¹⁰.

Mean age was similar for both groups (Table 2), confirming results of other studies with similar samples^{11,12}.

On the other hand, researchers have evaluated a sample similar to ours and have found significantly older mean age in FM patients as compared to control group, being this difference statistically significant ($p = 0.03$)¹⁰.

As to the difference in number of children in both groups, we were unable to find studies addressing such variable which could confirm the results of our study.

As to pain location, the prevalence of lumbar spine in both groups was equally evidenced by a recent study developed in an emergency service of a municipal hospital of Rio Grande do Sul. Authors confirmed lumbar pain as one of the major reasons to look for the service, being the major complaint of 52 patients (18.5%), and second only to upper and lower limbs pain related to fractures and/or contusion in 64 patients (22.77%)¹³.

As to functional capacity data (Table 3) it was observed that females with low back pain have a more satisfactory level of energy than FM females to practice physical exercises, labor, domestic and leisure activities. This lack of energy is in general caused by chronic fatigue and rigidity, more common in FM⁶.

Using a specific tool to evaluate functional capacity (Roland-Morris Brazil Incapacity Questionnaire), a study with 17 chronic low back pain patients has shown functional incapacity prevalence of just 23.5%, in line with the thesis that this capacity is more reduced in FM patients. Lumbar pain was not observed as a factor pegged to incapacity, but just as limiting the performance of some daily activities¹⁴.

A comparative study with 16 females with FM and 15 females without the diagnosis has shown that females with FM had negative impact on QL with decreased functional capacity, increased

pain and worsening of general health status¹⁵. FM patients have higher levels of pain, which leads to functional and physical limitations, less flexibility, muscle fatigue, lack of aerobic conditioning and less capacity to perform daily activities^{6,11}.

In a different study with 38 females diagnosed with FM, results have shown moderate difficulty to severe incapacity when their functional capacity was evaluated. That is, there has been significant correlation between pain and the level of functional incapacity for daily activities¹².

In this context, there is a cyclic relationship between different FM conditioning factors and functional incapacity. Muscle fatigue, rigidity and continuous and diffuse musculoskeletal pain are often reported by patients, being each one of these disorders the causes and, at the same time, the consequences of symptoms and worse labor capacity of FM females.

The fact that most patients did not practice physical exercises was also concerning, and was the most implied variable in functional capacity evaluation ($p < 0.001$), because the percentage (72.5%) is significantly high, similarly to a study with 30 chronic low back pain patients with prevalence of physical inactivity of 64.7%¹⁴.

As to primarily practiced physical exercises (walking and stretching/gymnastics), it has already been shown that physical activity, be it cardiovascular, strengthening or stretching, is associated to physical and mental well being and to social inclusion of individuals. Although clinical benefits of exercises are stressed for decreasing chronic pain intensity, physiological effects involved are still not clear; sometimes the analgesic effect is contradictory¹⁵.

It is worth stressing that just the fact of practicing daily physical activities does not imply a spinal protective factor and type of exercise, level of activity, workload and body posture in childhood/adolescence deserve attention. But it is certain that physical activities contribute for the prevention of spinal painful syndromes for providing, through strength and flexibility programs, more posture awareness¹⁶.

Another evidence of this is that the practice of physical activities has already been considered a positive factor for the QL of FM patients. In a randomized clinical trial with 42 FM patients, results have confirmed that the long term combination of aerobic, strengthening and flexibility exercises improves psychological health status and QL of these patients¹⁷.

It has also been proven that treatment with hydrokinesiotherapy of FM patients aged between 35 and 55 years has relieved pain and improved QL. It was observed improvement, in all patients, of painful symptoms characteristic of the disease and significant improvement in fatigue and sleep disorders. There has been improvement in performing daily life and professional activities, since the FM Impact Questionnaire applied before and after treatment has shown that water treatment allowed patients to perform activities otherwise made difficult by pain, rigidity and fatigue⁶.

So, it is up to health professionals assisting these patients to know their pain and functional changes, by a thorough evaluation which contributes to the diagnostic and treatment of changes causing discomfort, aiming at improving QL of these patients¹⁸.

For such, it is necessary to apply scientifically validated scales and use them as a complement of pain and functional capacity evalua-

tion of people suffering with this type of pain, in addition to refer them to treatments already known as effective, such as physical exercise, stretching, walking and hydrotherapy programs; in addition to educational, cognitive-behavioral and rehabilitation programs. So, treatment should include an interdisciplinary team systematically developing self-regulation skills needed for the maintenance of an active and independent lifestyle, adding specific activities to daily or weekly plan and regular follow up¹⁸.

Finally, the follow up of these patients should not exclude the psychological component. This, although not inducing pain, is part of the symptoms and modulates their expression. So, psychological support will contribute for reprogramming the subject and the idea of physical and psychical reprogramming should be central to the treatment. Professionals have to assure to ill subjects their voice, instituting in their practice the value of "listening, understanding and negotiating" as clinical practice resources to make the clinical meeting feasible¹.

CONCLUSION

Females with FM have worse functional capacity as compared to low back pain patients and deserve attention of health professionals for continuous and thorough evaluation of the quality of pain, of physical fitness and capacity to practice exercises, aiming at a more effective treatment assuring QL.

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