

Occurrence of low back pain in physical therapists from the city of Recife, Pernambuco, Brazil

Ocorrência de lombalgia em fisioterapeutas da cidade de Recife, Pernambuco

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Abstract

Introduction: Healthcare professionals are affected by several painful problems in the vertebral column, and low back pain is one of the complaints most frequently found among these professionals. Physical therapists are professionals who often present this type of disorder. **Objective:** To analyze the frequency of occurrence of low back disorders among physical therapists in the city of Recife, Pernambuco, Brazil, and relate it with length of time in the profession, age and work schedule. **Methods:** This study was a case series that was developed by applying a questionnaire to 56 physical therapists. **Results:** A high rate of musculoskeletal disorders in the low back was found, with complaints observed in 78.58% of the subjects. **Conclusions:** According to the results obtained from this study, it is necessary to seriously consider the occurrence of low back disorders in physical therapists, in order to reach a better understanding of the problems identified and to act towards improving the quality of life of this professional, by means of further studies.

Key words: musculoskeletal disorders; low back pain; physical therapists.

Resumo

Introdução: Os profissionais da área de Saúde estão sujeitos a altos índices de dor na coluna vertebral e a lombalgia é uma das queixas dolorosas mais frequentes na prática clínica. Os fisioterapeutas estão entre os profissionais que mais apresentam estes tipos de distúrbios. **Objetivo:** Analisar a frequência das disfunções na coluna lombar de fisioterapeutas da cidade de Recife, Pernambuco, relacionando-as com tempo de atuação profissional, idade e jornada de trabalho. **Materiais e método:** Trata-se de um estudo de série de casos que foi desenvolvido por meio da aplicação de um questionário em 56 fisioterapeutas. **Resultados:** Durante a realização deste trabalho, foi verificado um alto índice de distúrbios musculoesqueléticos localizados na coluna lombar dos pesquisados, com 78,58% de queixas. **Conclusões:** De acordo com os resultados obtidos neste trabalho, é necessário o aprofundamento das discussões para uma melhor compreensão dos problemas identificados e atuação em busca da melhoria da qualidade de vida do profissional em Fisioterapia, por meio de estudos de maior poder analítico.

Palavras-chave: distúrbios osteomusculares; lombalgia; fisioterapeutas.

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Introduction : : : .

Low back pain is one of the most common injuries suffered by professionals who work at clinics and it is one of the most common causes of absenteeism from work^{1,2}. Health professionals are included in the indices of high levels of occupational pain. The symptoms interfere with the performance of daily activities and range from limitations of movement to temporary invalidity, depending on the intensity of the pathology^{2,3}. Physical therapists are among health professionals who show more postural disturbances since their occupation demands great efforts of the musculoskeletal system, repetitive movements of the upper limbs, maintenance of static and dynamic postures for long periods of time and especially movements which overload the spine⁴.

Although physical therapy aims to promote an individual's health, the majority of the instruments used and the work environment where the practice is carried out do not respect many ergonomic precepts. Therefore, many therapists carry out their activities, which demand strong and repetitive movements, in inadequate rooms and with inappropriate postures. This can lead to musculoskeletal disturbances, mainly of the lumbar spine⁵.

Accordingly, taking into account the high indices of spinal disturbances related to this job occupation, mainly for physical therapists, and the impact that this pathology has on their lives, this study aimed to analyze the frequency of low back pain in therapists from Recife (Pernambuco, Brazil), as well as the relationships between the disturbances and the duration of professional experience, age and the number of hours worked per week.

Materials and methods : : : .

This present research considered a series of cases and consisted of a detailed descriptive study of various similar individuals. This may significantly contribute to the scientific knowledge with important information which could be used in other studies with a more analytic approach⁷.

The population analyzed in this study consisted of physical therapists who have worked with traumatology, orthopedics and neurology, which are the most common areas of the occupation for this type of professional^{8,9}. All therapists worked in one of the 46 private physical therapeutic clinics in the metropolitan region of Recife who were legally registered by the Regional Physical and Occupational Therapy Council of the 1st Region. Therapists who were not registered, with less than a year of professional experience, who were pregnant or had other occupations aside from the Physical Therapy

practice or who performed any kind of sports, house work, or leisure activities which could have contributed to the occurrence of low back pain were excluded from this study. All 46 registered physical therapeutic clinics were visited and all therapists who were working at the time of the visit were interviewed. Consequently, the sample consisted of at least one therapist from each of the registered clinics, with a total of 56 participants.

All participants filled in a questionnaire with information on Lumbar Spine Osteomuscular Symptoms, which was an adaptation of the spine physical-functional evaluation model¹⁰. The questionnaire is a self-administered instrument and was completed without any help from the researcher. It was used to investigate musculoskeletal disturbances which affected the therapists' lumbar spine.

The questionnaire consisted of 15 questions including personal details (such as name, age and gender), professional details (such as specialty, when the professional graduated, number of hours worked per week) and information related to lumbar spine pain. This included when the symptoms started, descriptions of the symptoms, lasting pain durations, conditions that improved or worsened the pain, types of undertaken treatment, if any, and the results of the treatment.

The Visual Numeric Scale, described by Sousa and Silva¹¹, was used to evaluate the intensity of the pain reported by the therapists. The scale is graded from 0 to 10, in which 0 means no pain and 10 means the worst level of pain felt by the patient. The participants were instructed to choose the level of pain felt over the last seven days.

The sections of the questionnaire were pre-coded and processed in a microcomputer, using Excel 2003 software. The descriptive analyses of the data were expressed in percentages, means, standard deviations, minimum and maximum values, through visual analyses of graphics and tables.

The levels of pain were correlated with the following variables: duration of experience, age, and weekly working hours. The Statistica 6 Base software, developed by Statsoft®, was used to establish correlations between the variables. Spearman correlation coefficients, which consisted of a measure of the degree of association or dependency between two variables, were used as a non-parametric alternative to Pearson correlation coefficient. The Spearman correlation coefficient is used when the data consists of ordinal variables or when none of the variables include in the analysis have normal distributions¹².

All therapists who were interviewed accepted taking part in the study and obtained authorization from their clinic's board of directors. Then they signed a free consent form in accordance with Resolution 196/96 of the National Health Counseling. This study was submitted to the Ethics and

Research Committee of Agamenon Magalhães Hospital on March 16, 2007 and was approved on 29 March 2007, registry number 51/2007.

Results

Table 1 shows the social-demographic and professional profiles of the therapists in relation to gender, age, area and duration of professional experience, number of hours worked per week, intervals between the sessions, ergonomic adequacy of the work environment and posture while at work.

Table 2 describes the osteomuscular disturbances of the lumbar spine profiles for the sample and refers to the presence of lumbar pain, occurrence of the pain before working as therapists, characteristics of the pain, positions which worsen the pain, treatments undertaken to alleviate symptoms and the results of the treatment. In the item related to lumbar pain characteristics, each therapist chose one or more options on the questionnaire. For the other items, only one option could be chosen. Figures 1, 2 and 3 show the graphs for pain dispersion levels relating to the following variables:

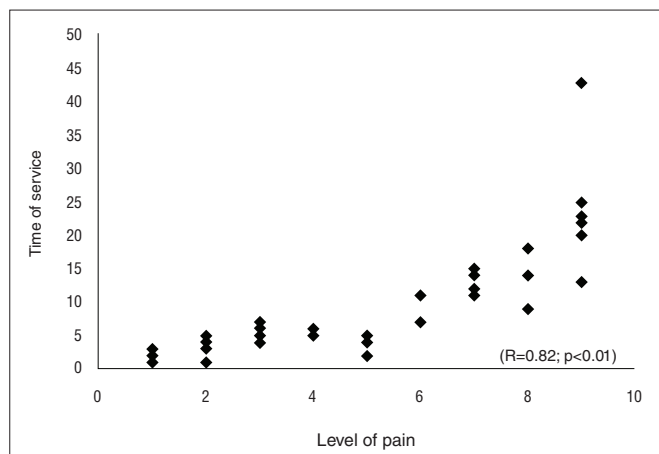


Figure 1. Dispersion graphic of the level of pain x time of service.

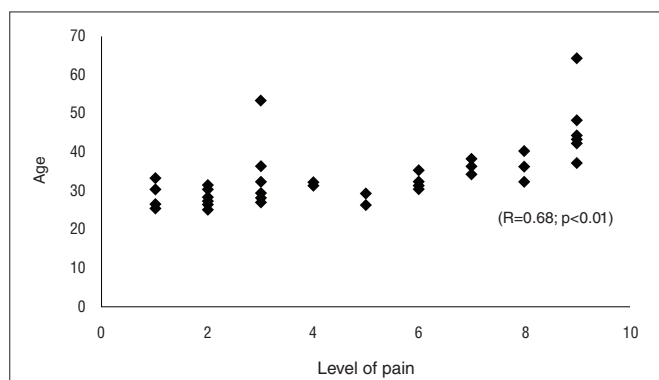


Figure 2. Dispersion graphic of the level of pain x age.

duration of professional experience, age, and number of hours worked per week.

According to the data, the dispersion of the points and the regression line suggest a direct correlation between the level of pain and the three selected variables. Spearman correlation coefficients were calculated to analyze the association between the level of pain and the three selected variables. Positive correlations between the levels of pain and duration of professional experience ($R=0.82$; $p<0.01$), age ($R=0.68$; $p<0.01$) and number of hours worked per week ($R=0.41$; $p<0.01$) were found. According to these results, the greatest correlations observed in this study, in relation to the level of pain, were between the duration of professional experience followed by age and then the number of hours the therapists worked per week.

Discussion

Observing the results of the present study, a high occurrence of low back pain was noted in 78.58% of the therapists evaluated who suffered from lumbar spinal pain. This study corroborates Bork¹³, who carried out a study with 128 therapists in 46 American states, of whom 80% showed musculoskeletal disturbances, and lumbar spinal pain was the most prevalent of these disturbances.

In Brazil, the study developed by Pivetta et al.¹⁴ indicates the lumbar spine as the region with the second highest incidence of corporal pain for therapists who work in Santa Maria, in the state of Rio Grande do Sul. Romani¹⁵, describes the lumbar spine as the anatomic region that is most affected by musculoskeletal disturbances, occurring in 65% of the cases related by therapists. According to Shehab et al.⁹, the occurrence of low back pain is related to the type of exercises performed by the therapist, especially in the areas of traumatology and neurology, which demand great physical effort, sustained loads and high repetitions in treating patients.

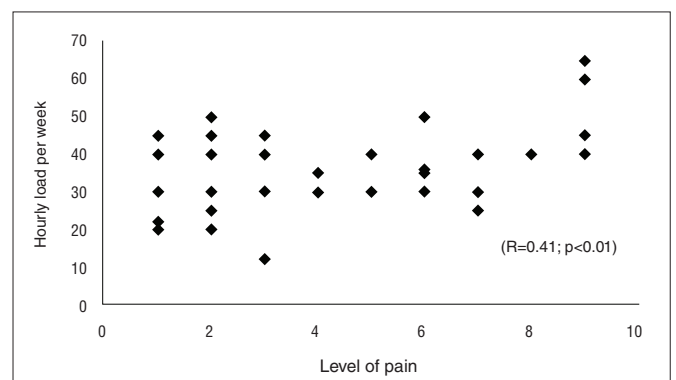


Figure 3. Dispersion graphic of the level of pain x hourly load.

Table 1. Sociodemographic and professional profile of the evaluated Physical Therapists

Sociodemographic and professional profile of the Physical Therapists				
Sex	n	%	Age	Value
Male	1	1.79	Maximum	64
Female	55	98.21	Minimum	24
Total	56	100	Mean	33.5
Area of expertise	n	%	Standard deviation	7.94
Traumatology-orthopedics	12	21.43		
Neurology	44	78.57		
Total	56	100	Hourly Load on Work (hours per week)	Value
Breaks at work	n	%	Maximum	65
Yeas	49	87.5	Minimum	12
No	7	12.5	Mean	36.34
Total	56	100	Standard deviation	11.12
Posture adopted	n	%		
Appropriate	8	14		
Inadequate	48	86		
Total	56	100	Time of service (years)	Value
Ergonomic Adequacy	n	%	Maximum	43
Appropriate	10	18	Minimum	1
Inadequate	46	82	Mean	8.88
Total	56	100	Standard deviation	8.38

Table 2. Profile of low back osteomuscular disorders presented by evaluated Physical Therapists.

Profile of low back osteomuscular disorders presented by evaluated Physical Therapists.					
Presence of Low Back Pain			Features of Low Back Pain		
	N	%		N	%
Yes	44	78.58	Burning Pain	8	13.11
No	12	21.42	Pulsing Pain	2	3.28
Total	56	100	Concentrated Pain	36	59.02
Occurrence of pain before becoming a Physical Therapist			Irradiated Pain to lower limbs	15	24.59
	N	%	Total	61	100
Yes	9	21.42	Positions that increase the symptoms		
No	36	78.58		N	%
Total	44	100	Standing	28	63.63
Duration of symptoms			Seated	10	22.27
	N	%	Lying	4	9.1
Less than 30 minutes	9	20.4	Others	2	5
More than 30 minutes	12	27.3	Total	44	100
More than 1 hour	23	52.3			
Total	44	100			
Used some kind of treatment			Result Obtained with Physical Therapy Treatment		
	N	%		N	%
Yes	27	61.36	Effective	23	100
No	17	38.64	Ineffective	0	0
Total	44	100	Total	23	100
Kind of treatment for back pain conducted by physical Therapists			Result Obtained with Medicament-Based Treatment		
	N	%		N	%
Physical therapy	23	85.19	Effective	2	50
Medicament-Based Treatment	4	14.81	Ineffective	2	50
Total	27	100	Total	4	100

The majority of the observed therapists in this study related the appearance of lumbar pain just after the beginning of their professional lives. Nyland and Grimmer¹⁶ state that lumbar pain sometimes begins when the therapists are still studying at university, after the first year, when the therapists begin assessing patients. As stated by these authors, the risks of the appearance of this disturbance increases once the therapists graduate and begin their professional lives. In the present study, the most common symptom related by the therapists was pain localized in the lumbar spine which occurred in 59.02% of the cases, with a worsening of pain when the participant remained standing in 63.63% of the time. Trevisan and Ikedo¹⁷ and Cole et al.¹⁸ also noticed that the pain localized in the lumbar spine, without irradiation, which occurs when the patient is standing, is probably related to tension and fatigue of the lumbar para-vertebral musculature caused by inadequate posture when maintained for long periods of time.

In accordance with the present study, 61.36% of the therapists with lumbar pain undertook treatment to alleviate the symptoms. One hundred percent of the therapists who chose physical therapeutic treatment obtained satisfactory results. In contrast, only 50% of the therapists who chose medical treatment obtained acceptable results. In the opinion of Binder, Wludarski and Almeida¹⁹ and Batista et al.²⁰, workers, including health professionals, who feel any musculoskeletal discomfort, do not look for a specialized treatment at the first occurrence of the symptoms, and this favors the evolution of the problem.

Coury and Rodgher²¹ state the importance of physical therapeutic interventions for the treatment of the causes of low back pain. This treatment alleviates pain through the use of resources which contact the musculature, improve trophism, increase flexibility and global relaxation, and, consequently, improve posture and the patient's well-being and quality of life. It was also verified in the present study that a significant portion of the therapists (21.43%) worked non-stop, without rest intervals in between the treatment of the patients, since the demand for professionals is greater than the number of available professionals. Daily exposure to a work routine without intervals and repetitive series of movements which demand much effort, as in the daily work routine of therapists, could, according to Feuerstein et al.²², cause muscular, tendon and ligament lesions, favoring the appearance of lumbar spine disturbances.

Yassi²³ states that the introduction of rest intervals in the work routine is an important tool capable of minimizing overload on the lumbar region. However, Shehab et al.⁹ report that it is difficult to introduce rest intervals in the work routine of therapists because of the high number of

patients treated daily, since most of these professionals' salary depends on the number of patients they are able to see. Eighty-six percent of the treated participants had inadequate posture during the performance of their professional activities. In addition to that, a lack of adaptation of the work environment with the individual characteristics of the therapists was noted for 82% of the professionals. According to Silva and Silva²⁴, poor posture during the practice of professional activities and an inadequate work environment, associated with muscular overload and performance of high-speed movements, can cause serious lesions on the therapists' lumbar spine.

The results of this study showed that the greater the number of hours worked per week, the duration of their professional experience and the age of the individuals, the higher was the level of pain felt by the therapists. These results corroborate with the study of Pivetta et al.¹⁴, who also verified that the level of pain increases as the number of hours worked per week increases. Therefore, there is a correlation between this occupational affliction and this variable.

Ciarlini et al.⁸ found that therapists who had the most extensive the duration of professional experience, had a higher the risk of occupational disturbances due to continuous muscular and articular overloads. In spite of this, the authors also noted that a great number of therapists show these disturbances precociously, within only two years of professional experience, and that these are associated with the aspects earlier described as well as with the application of excessive force and repetitive movements performed mostly while standing.

These findings are in accordance with those of Rugelj⁵ who pointed out that age was one of the main factors that contribute to the occurrence of lumbar pain in physical therapists. This study is complemented by Pereira, Teixeira and Etcheperé²⁵ who stated that, after the age of 35, there is a natural and physiological stress of the musculoskeletal structures of the lumbar spine. This, when associated with acquired biomechanical changes, cause degeneration of the vertebral articulations which can lead to a diminution of locomotor function and of flexibility. This increases the risk of lesions and, consequently, the appearance of low back pain.

Conclusions : : : .

The results of this research provided evidence that the physical therapists from Recife evaluated in this study, frequently suffer from low back pain and that the magnitude of this disturbance was associated with the number of hours worked per week, the duration of their professional experience and the age of the individuals. These results indicated that

physical therapy practice could result in a high risk of osteo-muscular disturbances for these professionals, mainly due to the extensive number of hours the therapists have to work per week. Therefore, profound discussions, with more analytic approaches are required. More specifically, discussions

related to themes such as prevention and ergonomics, among others, which aim to contribute to the integrity of the musculoskeletal system of the physical therapist and to promote better personal and professional quality of life are needed for these professionals.

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