

Functional health of workers undergoing rehabilitation for chronic low back pain and the condition of kinesiophobia and psychological capital

Saúde funcional de trabalhadores em fase de reabilitação por lombalgia crônica e a condição de cinesiofobia e do capital psicológico

La salud funcional de los trabajadores sometidos a rehabilitación por lumbalgia crónica y la condición de kinesiophobia y capital psicológico

RESUMO

Objetivo: Analisar se há relação entre o capital psicológico e cinesiofobia em pacientes com dor lombar crônica de um Núcleo de Reabilitação de Trabalhadores. Métodos: estudo de campo, exploratório descritivo e quantitativo com abordagem transversal, em trabalhadores formais e informais de ambos os sexos, idades entre 29 a 67 anos, com dor lombar crônica. O projeto foi apreciado e aprovado pelo Comitê de Ética em Pesquisa (CEP) da Universidade do Extremo Sul Catarinense, com o número 5.821.064. Utilizando as triagens do Núcleo de Reabilitação de Trabalhadores; aplicado um questionário referente a questões sociodemográficas, comportamentais e de trabalho; a Escala de Tampa para Cinesiofobia avaliar grau de cinesiofobia; e a Escala do PsyCap Abreviado versão traduzida e validada para a língua portuguesa, envolvendo o Capital Psicológico, para avaliar as 4 capacidades. Resultados: A intensidade dolorosa associada a cinesiofobia apresentou significativa relação entre esses dois fatores. A média da cinesiofobia na dor intensa foi maior do que na dor moderada. No entanto não houve resultados significativos na associação do capital psicológico e intensidade dolorosa neste estudo. Conclusão: Os objetivos iniciais de averiguar a relação entre os dois fatores do estudo não foram alcançados, acredita-se que esta limitação se deve ao número baixo de pacientes com dor lombar crônica atendido pelo Núcleo de Reabilitação de Trabalhadores, todavia pode-se afirmar que o capital psicológico está associado a níveis de satisfação, desenvolvimento e bem-estar relacionado ao ambiente organizacional de modo geral, e que pacientes com dor lombar apresentam nível moderado de cinesiofobia e quando associado a dor, possuem um grau de dor intensa.

PALAVRAS-CHAVES: Dor lombar crônica, capacidade funcional, cinesiofobia, autoeficácia, esperança, resiliência e otimismo.

ABSTRACT

Objective: To analyze whether there is a relationship between psychological capital and kinesiophobia in patients with chronic low back pain at a Workers Rehabilitation Center. Methods: field study, exploratory, descriptive and quantitative with cross-sectional approach, in formal and informal workers of both sexes, aged between 29 and 67 years, with chronic low back pain. Approval from the Research Ethics Committee of the University of Extremo Sul Catarinense, number 5.821.064. Using the Workers Rehabilitation Nucleus screenings; applied a questionnaire referring to sociodemographic, behavioral and work issues; the Tampa Scale for Kinesiophobia to assess the degree of kinesiophobia; and the PsyCap Abbreviated Scale translated and validated for the Portuguese language, involving the Psychological Capital, to assess the 4 capabilities. Results: Pain intensity associated with kinesiophobia showed a significant relationship between these two factors. The average of kinesiophobia in severe pain was higher than in moderate pain. However, there were no significant results in the association between psychological capital and pain intensity in this study. Conclusion: The initial objectives of investigating the relationship between the two factors of the study were not achieved, it is believed that this limitation is due to the low number of patients with chronic low back pain attended by the Rehabilitation Center for Workers, however it can be stated that psychological capital is associated with levels of satisfaction, development and well-being related to the organizational environment in general, and that patients with low back pain have a moderate level of kinesiophobia and, when associated with pain, have an intense degree of pain.

KEYWORDS: Chronic low back pain, functional capacity, kinesiophobia, self-efficacy, hope, resilience and optimism.

RESUMEN

Objetivo: Analizar si existe relación entre el capital psicológico y la kinesiophobia en pacientes con lumbalgia crónica de un Centro de Rehabilitación de Trabajadores. Método: Estudio de campo exploratorio, descriptivo y cuantitativo, con enfoque transversal, que incluyó trabajadores formales e informales de ambos sexos, con edades entre 29 y 67 años, con lumbalgia crónica. El proyecto fue evaluado y aprobado por el Comité de Ética de la Investigación (CEP) de la Universidad do Extremo Sul Catarinense, bajo el número 5.821.064. A partir de las evaluaciones del Centro de Rehabilitación de Trabajadores, se aplicó un cuestionario sobre aspectos sociodemográficos, comportamentales y laborales; la Escala Tampa de Kinesiophobia evaluó el grado de kinesiophobia; y la Escala Abreviada PsyCap traducida y validada para el idioma portugués, que involucra el Capital Psicológico, para evaluar las 4 capacidades. Resultados: La intensidad del dolor asociada a la kinesiophobia mostró una relación significativa entre estos dos factores. La puntuación media de kinesiophobia para

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el dolor intenso fue mayor que para el dolor moderado. Sin embargo, no hubo resultados significativos en la asociación entre el capital psicológico y la intensidad del dolor en este estudio. Conclusión: No se alcanzaron los objetivos iniciales de investigar la relación entre ambos factores en el estudio, y se cree que esta limitación se debe al bajo número de pacientes con lumbalgia crónica atendidos en el Centro de Rehabilitación de Trabajadores. No obstante, se puede afirmar que el capital psicológico se asocia a niveles de satisfacción, desarrollo y bienestar relacionados con el entorno organizacional en general, y que los pacientes con lumbalgia presentan un nivel moderado de kinesiofobia y, cuando se asocia a dolor, tienen un grado de dolor severo.

PALABRAS CLAVE: Lumbalgia crónica, capacidad funcional, kinesiofobia, autoeficacia, esperanza, resiliencia y optimismo.

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INTRODUCTION

Chronic low back pain does not only arise from specific diseases, but from a set of causes, such as sociodemographic factors, behavioral factors, situations occurring in daily activities and, among others, referring to obesity and psychological morbidities.¹

Low back pain is the most common cause of physical limitations and absence from work, and is associated with several disorders. For the World Health Organization, organizations have been presenting increasing searches for quality of life at work, due to the understanding that health is not just the absence of diseases, but because it is considered a physical, psychological and social state.²

It ensures that quality of life at work can be considered as a movement

towards respect for the well-being of individuals from a biological, psychological and social point of view.²

The manifestation of symptoms in patients with chronic low back pain has constantly been considered a predictive tool of the psychological profile and it has been assessed that awareness of the relationship between disability and pain intensity and the patient's cognitive-behavioral profile can provide valuable information, which can be used to predict prognosis and treatment, and help choose the best therapeutic approach for this patient.³

Along these lines, it is important to mention positive psychological capital in patients with chronic low back pain, a psychological approach aimed at evaluating the individual's psychological state, characterized by self-efficacy, hope, resilience and optimism, which

can be developed and related to work performance. These capabilities are directly related to organizational commitment, job satisfaction, creativity, performance and well-being of individuals.⁴

There are factors that result in patients being afraid of performing any type of exercise, as fear is considered a relevant factor in understanding how acute pain becomes chronic for some patients and why pain and associated outcomes persist after tissue damage has healed. Pain and fear have been described with a variety of definitions, including beliefs, fear of movement and kinesiophobia, are the most used, in this context low back pain can be associated with kinesiophobia in several patients, they present deficiencies associated with conditions of the lower back and may be the result of a com-



bination of psychosocial factors and changes in bodily functions according to the International Classification of Functioning, Disability and Health (ICF).⁵

Kinesiophobia is defined as an irrational, excessive, and debilitating fear of performing physical movement, due to a feeling of vulnerability to painful injury or re-injury.

Given the large number of patients diagnosed with chronic low back pain and who have some affinity with kinesiophobia and mainly with psychological capital, this study aimed to evaluate, based on the Psychological Capital Questionnaire and the Tampa Scale for Kinesiophobia, the levels of psychological capital and kinesiophobia in patients with chronic low back pain.

METHOD

This is a field study, exploratory, descriptive and quantitative with a cross-sectional approach. The study included formal and informal workers of both sexes, aged between 29 and 67 years, with chronic low back pain who agreed to participate in the research. Workers who did not have core screening at the time of collection, who had acute or subacute low back pain, were excluded from the research.

An analysis of the screenings carried out by the Workers' Rehabilitation Center was carried out to better understand the research participants, subsequently applying a questionnaire regarding sociodemographic issues, behavioral and work behaviors, as well as applying the Tampa Scale for Kinesiophobia and the Abbreviated PsyCap Scale, translated and validated version for the Portuguese language, involving Psychological Capital, to evaluate patients. The place where data was collected for the research was at the Center for Promotion and Clinical Care for Occupational Health for a period of 30 days. The objectives and necessary information were presented and, immediately

after consent and signature of the Free and Informed Consent Form (FICF), the patient was taken to the interview. All questionnaires were administered in the form of an interview; and, when the patient did not understand the question, the interviewer reread the question in full.

The Tampa Scale for Kinesiophobia is an instrument used to quantify patients' level of fear of performing an exercise, created by author Jamir Sardá. This instrument consists of 17 questions, where the patient answers whether they completely agree (1), partially agree (2), partially disagree (3) or totally disagree (4), thus adding up to the end of the questions, a number that will be analyzed and verified whether the patient has levels of kinesiophobia.

The PsyCap Scale (PCQ-12) is an instrument used to quantify the level of changes in four capabilities, namely self-efficacy, hope, optimism and resilience, created by the author Luthans and the Portuguese version by the author Martins. This instrument consists of 12 questions, on a Likert scale from 1 to 5, with 1 being completely disagree to 5 being completely agree. In the reduced form, 4 items assess hope, 3 items self-efficacy, 3 items resilience and 2 items measure optimism. The total value of Pscap corresponds to the level of positive Psychological Capital that an individual has, where work-related changes will be assessed in each capacity.

To evaluate the association between psychological capital and kinesiophobia, Pearson's correlation was used with a significance level of 5% (p value <0.05). The correlation coefficient (r) was presented.

Student's t test for independent samples was used to evaluate the associations between pain intensity and kinesiophobia, and pain intensity and psychological capital. A significance level of 5% (p -value <0.05) was also used.

The study was approved by the Research Ethics Committee of the Universidade do Extremo Sul Catarinen-

se - UNESC with number 5.821.064, CAAE: 65669722.1.0000.0119. Data collection only began after approval by the selected Research Ethics Committee, in accordance with Resolution No. 466, of 2012, of the National Health Council, and after obtaining the signature of the Free and Informed Consent Form.

RESULTS

The study included patients receiving treatment for chronic low back pain at the Workers' Rehabilitation Center of the University of Southern Santa Catarina, who met the inclusion criteria in the previous survey. During the data collection period, 18 patients participated in the study. From the information collected, it was possible to analyze psychological capital and kinesiophobia as an indicator of patients' functional health. The sociodemographic characteristics are presented in Table 1. It is observed that the majority of the sample is made up of female patients (77.8%) and white (51.1%), with an average age of 49.88 ± 10.36 married 50%. The majority of patients interviewed have completed high school education (38.9%) and have an income of R\$800.00 to R\$3,200.00 (72.2%).

Table 2 concerns behavioral and work data. Regarding tobacco use, 83.33% of the sample says they do not use it. With regard to sleep quality, 38.9 consider the sleep to be good, 16.7% the sleep to be fair, 44.4% consider the sleep to be bad or very bad. With regard to physical activity, 77.8% of participants say they do not practice it. Regarding weight change since the beginning of the role, 50% declare an increase in weight, however, 33.3% claim to have reduced their weight and 16.7% have not changed. Regarding the level of pain, 50% of the sample reported moderate pain and 50% reported severe pain.

Psychological capital in patients with chronic low back pain was present

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Table 1. Distribution of data referring to the Sociodemographic Questionnaire of patients with chronic low back pain treated by the Workers' Rehabilitation Center of a University in Southern Santa Catarina

	MEAN, N (%) N=18
Gender	
Male	04 (22,2)
Female	14 (77,8)
Age (years)	
29 – 38	04 (22,2)
39 – 48	03 (16,7)
49 – 58	07 (38,9)
59 or older	04 (22,2)
Marital status	
Single	03 (16,7)
Married / Stable Union	09 (50)
Divorced / Separated	05 (27,8)
Widow(er)	01 (5,5)
Color	
White	11 (61,1)
Black	04 (22,2)
Brown	03 (16,7)
Education	
Incomplete Elementary Education	04 (22,2)
Complete Elementary Education	01 (5,5)
Complete High School	07 (38,9)
Incomplete High School	01 (5,5)
Complete higher education	05 (27,8)
Income	
800 – 3.200	13 (72,2)
3.201 - 5.600	04 (22,2)
Over 5.601	01 (5,5)

Source: Research data (2023).

Table 2. Distribution of behavioral and work data of patients with chronic low back pain treated by the Workers' Rehabilitation Center of a University in Southern Santa Catarina

	MEAN, N (%) N=18
Do you smoke?	
Yes	03 (16,67)
No	15 (83,33)
How many hours do you usually sleep per day considering weekdays (Monday to Friday)?	
02 – 06 hours	07 (38,9)
07 or more hours	11 (61,1)
How do you rate your sleep?	
Good	07 (38,9)
Regular	03 (16,7)
Bad	04 (22,2)
Very Bad	04 (22,2)
Do you perform physical activity?	
Yes	04 (22,2)
No	14 (77,8)
How much physical activity do you perform per week?	
Less than 150 minutes	02 (11,1)
150 minutes or more	02 (11,1)
Doesn't apply	14 (77,8)
Has there been a change in your weight since the beginning of your role until today?	
Increased	09 (50)
Decreased	06 (33,3)
It did not change	03 (16,7)
How many pounds?	
Increased up to 22.04 lb	05 (27,8)
Increased over 24.25 lb	04 (22,2)
Reduced up to 22.04 lb	04 (22,2)
Decreased over 24.25 lb	02 (11,1)
It did not change	03 (16,7)
What is your pain level?	
Moderated	09 (50)
Intense	09 (50)

Source: Research data (2023).

ted in Table 3. The reduced version of the PsyCap Scale (PCQ-12) developed by Luthans and Avolio (2007) is composed of 12 items organized on a Likert scale from 1 to 5, 1 being totally disagree to 5 being totally agree. The assessment of each of the dimensions that make up the instrument is distributed as follows: questions 1, 2 and 3 refer to the self-efficacy dimension, questions 4, 5, 6 and 7 refer to hope, questions 8, 9 and 10 to resilience and questions 11 and 12 to the optimism dimension (MARTINS et al., 2011).

Table 4 observed that in general, kinesiophobia, 45.4% of patients are afraid of exercising, with levels considered as mild from 17 to 34 points, moderate from 35 to 50 points and severe from 51 to 68 points. The majority of patients (61.1%) presented a moderate level of kinesiophobia and 27.8% a severe level. The correlation between psychological capital and kinesiopho-

bia in patients with chronic low back pain was not significant, according to the correlation coefficient: 0.016, p-value: 0.950.

Regarding the painful intensity associated with kinesiophobia in table 5, when analyzed, it showed a significant relationship between these two factors, as it was less than 0.05. The mean kinesiophobia in severe pain was higher than in moderate pain. However, there were no significant results in the association of psychological capital and pain intensity in this study.

DISCUSSION

The literature indicates that almost 27 million Brazilian adults over the age of 18 report back problems. This condition predominantly affects females due to their anatomical and functional conditions.⁶ It is understood that there are few studies that relate chronic

low back pain with kinesiophobia and psychological capital, however there are studies that associate low back pain with psychological changes, who state that psychosocial aspects may play a role in the onset, severity and exacerbation or maintenance of pain.⁷

Lumbar spine disorders are generally prevalent among workers with lumbar overload, resulting from inadequate posture, repetitive work and psychological risk factors, including stress, anguish, anxiety, depression and dissatisfaction at work, it is clear that low back pain in workers is something that is very recurrent.⁸ The high prevalence of low back pain in this population can have negative consequences for quality of life, functionality and productivity at work, the literature corroborates this study, where it was possible to analyze that the pain maintained an average grade of 7.22 according to the Visual Analogue Scale (VAS), having a mo-

Table 3. Psychological Capital of patients with chronic low back pain treated by the Workers' Rehabilitation Center of a University of Southern Santa Catarina

	MEAN, N (%) N=18
General	3,74
Self-efficacy	3,92
Hope	3,66
Resilience	3,83
Optimism	3,44

Source: Research data (2023).

Table 4. Kinesiophobia of patients with chronic low back pain treated by the Workers' Rehabilitation Center of a University of Southern Santa Catarina

	MÉDIA, N (%) N=18
General	45,4
Light	02 (11,1)
Moderated	11 (61,1)
Severe	05 (27,8)

Source: Research data (2023).

derate pain index and relevant for the development of work activities.

A survey carried out by the World Health Organization shows that only headaches outweigh low back pain, with 80% of the population at some point having low back pain.⁹ The practice of physical activities is recommended to avoid or minimize these pains, however this study presented a rate of 77.8% as non-performance of physical activities, this shows that 14 workers evaluated in this research out of a total of 18 workers do not perform physical activity.

A study showed that individuals believe that physical activity is related to the presence of pain and end up being afraid of movement, contributing to disuse, functional incapacity and low quality of life over time.¹⁰ Another study confirmed that pain influenced movement, and consequently functional performance, suggesting a greater fear of performing physical activities. In this aspect, the literature corroborates the findings of this research.¹¹

The psychological capital of patients with chronic low back pain was assessed using the Psychological Capital Questionnaire (PsyCap-12) by Luthans, Youssef and Avolio (2004). Psychological capital has promoted the advancement of research on positive psychology, equally, research with the aim of validating the psychological capital questionnaire has been carried out in countries, such as the United States¹², Spain¹³, Portugal¹⁴ and Brazil¹⁵. Studies involving the PCQ12, a shortened version of the questionnaire, demonstrated good psychometric properties and can be used in large samples, presenting measurement invariance and evidence of validity in the Brazilian context.¹⁶

Contrary to the hypothesis of this study, which suggested a decrease in psychological capital scores, the findings involving the dimensions of the instrument measured through the PCQ-12 score were above the midpoint, thus demonstrating that the majority of pa-

tients with chronic low back pain have a high general mastery of psychological capital. It is therefore understood that the patients with chronic low back pain studied currently present a state of psychological improvement, being confident to successfully complete a challenging task, showing perseverance to establish goals and, if necessary, change the means by which they seek to achieve these goals. It also reveals the ability to recover from adversity that may arise in the work environment, thus highlighting your resilience. The elements of psychological capital described in the present study operate synergistically and constitute an emotional investment that supports the individual's decision-making in stressful situations. These characteristics mentioned above are fundamental for the development and satisfaction with a professional career.¹⁷

Studies also suggest that an individual's mental state intervenes in the relationship between commitment and performance and between work and human development, as determined by the combined influence of cognitive and subjective, environmental and behavioral factors that interact in reciprocity.¹⁸ Other findings indicate that the characteristics of positive psychological capital and the construction of more positive thinking patterns can strengthen psychological resources conducive to maintaining mental health, as well as well-being and professional success.¹⁹

In one study, they report that the term kinesiophobia is defined as excessive, irrational and debilitating fear of movement and physical activity, which results in feelings of vulnerability to pain or fear of injury recurrence.²⁰ One study indicated that pain influences functional performance and fear of carrying out activities (kinesiophobia). Just as fear of performing activities showed an association with lower functional performance, this study analyzed a significant result when compared to pain and kinesiophobia.²¹

Analyzing the results found in the studied population, according to reference values found in the literature, a high degree of kinesiophobia was observed (average of 48.07 in the TSK). In this study, the average pain reported by interviewees was intense (49.3 ± 6.2). Thus, the association found between the variables analyzed suggests that pain is capable of interfering in the patient's daily life, potentially compromising functional performance and quality of life. This limitation can be determined by the musculoskeletal impairment factor itself, but it can also be related to the fear of increasing suffering and/or the difficulty in facing your condition.²¹

A study discusses the idea that kinesiophobia can be more disabling than the intensity of the individual's pain, leading us to think about the importance of insisting on performing gradual movements and exercises even in more severe pain conditions.²²

CONCLUSION

The study aimed to seek evidence on the relationship between psychological capital and kinesiophobia, and additional analyzes were included in this research, looking at pain intensity and both factors.

It is necessary to highlight that the initial objectives of investigating the relationship between the two factors of the study were not achieved, it is believed that this limitation is due to the low number of patients with chronic low back pain treated by the Workers' Rehabilitation Center.

However, it can be stated that psychological capital is associated with levels of satisfaction, development and well-being related to the organizational environment in general, and that patients with low back pain have a moderate level of kinesiophobia and, when associated with pain, have an intense degree of pain.

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