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RESEARCH ARTICLE

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KINESIOTHERAPY APPLIED TO RELIEVING SYMPTOMS AND HEALTH PROMOTION OF PATIENTS WITH FIBROMYALGIA

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ABSTRACT

Fibromyalgia syndrome can be characterized as a chronic, noninflammatory pain syndrome of unknown etiology that manifests itself in the musculoskeletal system. The objective was to verify the efficacy of kinesiotherapeutic activities in relieving symptoms and improving the quality of life of fibromyalgic women. The research is descriptive-experimental nature and of a qualitaquantitative nature. The sample consisted of 06 women, aged between 30 and 75 years, diagnosed with fibromyalgia. The evaluation consisted of the questionnaires: sample characteristics, SF-36, FIQ, and the Pittsburgh Scale applied in pre- and post- treatment. The protocol consisted of initial respiratory work, mobilizations, stretching, strengthening, relaxation and final respiratory work, taken from the FISIOCLUB application, totaling 22 sessions performed 02 times per week. It was possible to verify through the results of the questionnaires the improvement of the quality of life mainly in relation to the physical and emotional aspects and in the improvement of the sleep quality. It was concluded that the kinesiotherapeutic activities were efficient for the presented proposal, having, therefore, relevance in its application.

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INTRODUCTION

Rheumatism, or rheumatic diseases, are nomenclatures used for pathologies that involve common changes in the musculoskeletal system, currently affecting a high rate of individuals and may present different symptoms and prognosis [1]. According to the Ministry of Health of Brazil, about 12 million Brazilians are affected by rheumatic diseases, despite affecting the general population, men, young people, the elderly, the highest prevalence is still the female population, aged between 30 and 40 years [2]. "Fibromyalgia is one of the most frequent rheumatological disorders in the world population, with Brazil in second place" [3]. It is a rheumatological syndrome with a non-inflammatory characteristic, unknown etiology and with a higher prevalence in women, characterized by generalized and chronic musculoskeletal pain, in addition to tender points to the touch and symptoms such as exhaustion, morning stiffness, difficulty

sleeping, gastrointestinal and psychological changes [4]. Fibromyalgia negatively alters the quality of life of patients, often influencing the professional, family, social and especially personal aspects [5]. It can become a huge problem in the life of the patient, because it, if not controlled, causes serious maladjustments, such as isolation, depression, exacerbation of pain and symptoms, among others [6]. It is possible to observe the difficulty of people with fibromyalgia in carrying out their activities of daily living due to physical, emotional and social symptoms which receive multiple judgments due to the lack of knowledge on the topic. Physiotherapy aims to reduce the symptoms of fibromyalgia, relieving pain, assisting in the functional activities of patients and providing daily guidance so that the long-term benefits and the carriers remain independent, the carriers are encouraged to healthier lives, with participation and functionality, contributing to physical and emotional well-being [7]. "Kinesiotherapy comprises two main goals of physiotherapy in the treatment of fibromyalgia: to exercise

sore muscles with stretching exercises and to improve cardiovascular conditions with aerobic exercises” [8]. Taking into account the characteristics of the disease and the impact on the quality of life of patients, the following question arises: can kinesiotherapeutic exercises help to relieve symptoms and promote the health of patients diagnosed with fibromyalgia? Therefore, it motivated the choice of the research theme, as it is of paramount importance to collect data and analyze how kinesiotherapy works with fibromyalgia women in their daily lives. Thus, the objective of the research was to verify the effectiveness of kinesiotherapeutic activities in relieving symptoms and improving the quality of life of women with fibromyalgia, conceptualizing the theme and the impact on daily life, performing the analysis of quality of life, sleep and the evolution of patients' pain before and after treatment.

METHODOLOGY

The study was sent for due approval by the Ethics Committee of the Alto Vale do Rio do Peixe University (UNIARP) according to the recommendations of resolution 466/12 of the national health council for scientific research with human beings and approved under the opinion No. 2,856,996. It was characterized as an experimental research, for [9] it consists of defining an object of study, citing factors that could influence them, determining the characteristics of control and analysis of the results presented in the object. The sample consisted of 06 female individuals, aged between 30 and 75 years and diagnosed with fibromyalgia syndrome who live in the municipality of Caçador - Santa Catarina, selected for convenience. The activities were applied at the Physiotherapy Clinic of UNIARP, in the municipality of Caçador - Santa Catarina. The inclusion criteria selected were: women with a clinical diagnosis of fibromyalgia aged 30 to 75 years, who had an understanding of the guidelines given, and intellectual agreement to participate voluntarily by signing the informed consent form (ICF). And the exclusion criteria selected were: pain crises that make it impossible to perform activities, miss sessions, start another type of treatment. After analyzing the inclusion criteria, 06 participants were selected, where they were instructed on the study and subsequently signed the informed consent form.

For the assessment, the participants completed the questionnaires of the sample, the SF-36 questionnaire, which consists of a questionnaire consisting of 36 items, grouped into 8 health dimensions: functional capacity, limitations caused by physical problems and limitations caused by emotional disorders, socialization, body pain, general health status, mental health and vitality [10], the FIQ questionnaire (in which the higher the score, the greater the impact of fibromyalgia on quality of life) and the Pittsburgh questionnaire (scale). The FIQ consists of 19 questions organized in 10 items, it involves questions related to functional capacity, professional situation, psychological disorders and physical symptoms [11]. The Pittsburgh questionnaire also consists of nineteen items, but it is grouped into seven components, being scored on a scale of 0 to 3. The values corresponding to the responses of respondents in each component are added together to give an overall score of the PSQI, which varies from 0 to 21. Results of 0-4 indicate good sleep quality, while 5-10 indicate poor quality and above 10 indicate sleep disturbance [12]. Finally, the participants also identified the pain locations using the Pain Map [13]. The proposed treatment protocol was applied twice a week, where

each session lasted 50 minutes, totaling 22 sessions, held in the afternoon. The consultations took place in two groups, separated into groups A and B, both composed of 03 participants receiving the same protocol. The activities protocol included initial respiratory work, mobilization, stretching, strengthening, relaxation and final respiratory work. The applied activities were taken from the Fisioclub® application. The sessions have always started with respiratory work "Awareness with respiratory aid" and ended with "Expiratory aid". Fisioclub® is a paid application that features online assessments, and exercises for immediate relief from common everyday complaints, bringing tips and content for improving the quality of life and disposition at home, at leisure, at work. The collected data were coded and stored in a database using the Excel program version 12.0- Office 2010. Subsequently, the data were analyzed and the results are demonstrated through descriptive analysis (mean and standard deviation).

RESULTS AND DISCUSSION

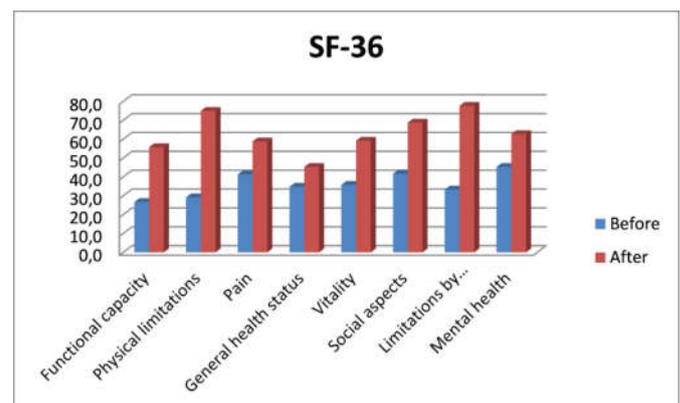
The sample consisted of 6 patients, with a mean age of 53.33 years (± 15.5), intentionally selected.

Table 1. Comparative data demonstrated through the mean and standard deviation of the SF-36 Questionnaire Pre and Post-Treatment

SF-36		
	Before	After
Functional capacity	26.7	55.8
Physical limitations	29.2	75.0
Pain	41.3	58.8
General health status	34.8	45.3
Vitality	35.8	59.2
Social aspects	41.7	68.8
Limitations by emotional aspects	33.3	77.7
Mental health	45.3	62.7

*Mean and standard deviation

Source: The Authors, 2018.



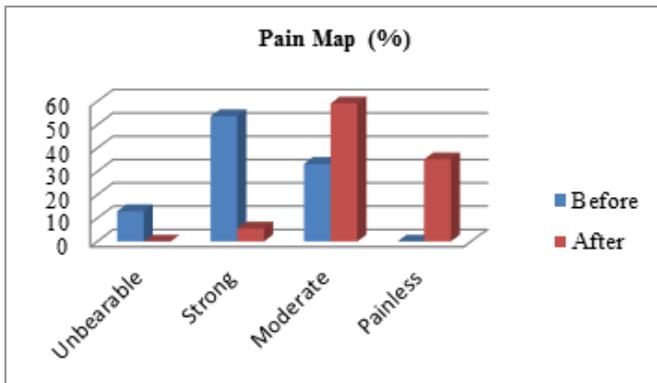
Source: The Authors, 2018.

Graph 1. Representation of comparative data demonstrated through the mean and standard deviation of the SF-36 Questionnaire Pre and Post Treatment

Table 2. Comparative data demonstrated through the mean and standard deviation of the Pain Map Pre and Post Treatment

Pain Map (%)		
	Before	After
Unbearable	13.0 (± 16.2)	0
Strong	53.7 (± 23.2)	5.6 (± 11.8)
Moderate	33.3 (± 18.6)	59.2 (± 18.8)
Painless	0	35.2 (± 17.6)

Source: The Authors, 2018



Source: The Authors, 2018.

Graph 2. Representation of the average of comparative data Pre and Post Treatment through the Pain Map

Table 1 shows the results obtained through the SF-36 questionnaire, in which the highest values suggest a good quality of life and the values closer to zero, the worst quality of life. It is possible to observe that all the items evaluated pre-treatment were low. Although the limitation domain due to emotional aspects reached the best average in its post-treatment score $77.7 (\pm 17.2)$, it was limited by physical aspects, which showed a noticeable improvement, passing its score of $29.2 (\pm 10, 2)$ pre-treatment to $75.0 (\pm 31.6)$ post-treatment. McCain [14] and Buckelew [15] evaluated the impact of kinesiotherapeutic exercises on emotional aspects and found improvement. Coutinho [16], through a study, demonstrated that stretching relieves symptoms, increases the flexibility and quality of life of fibromyalgia patients, which may or may not be related to other physical therapy techniques. In a study by Hecker [17], to compare the efficacy of two therapeutic methods, hydrokinesiotherapy and kinesiotherapy, assessed using the SF-36, he observed that there were no statistically significant differences between one therapy and another before and after treatment, however the greatest effect obtained was on functional capacity. "Through kinesiotherapy, stretching interferes with flexibility, relaxing muscles that are contracted and rigid, reducing pain" [18].

Table 3. Comparative data demonstrated through the mean and standard deviation of the FIQ Questionnaire Pre and Post-Treatment

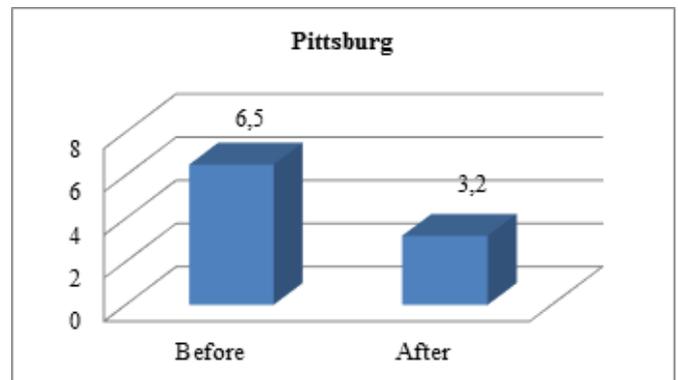
	FIQ	
	Before	After
Functional capacity	16.2 (± 3.6)	9.2 (± 1.8)
Welfare	2.3 (± 1.2)	5.5 (± 0.5)
Fouls	1.3 (± 1.8)	0.3 (± 0.8)
Capacity at work	6.7 (± 1.6)	4.0 (1.3)
Pain	7 (± 1.9)	4.0 (± 1.2)
Tiredness	6.7 (± 1.5)	3.5 (± 1.9)
Awakening	6.3 (± 1.5)	3.5 (± 1.5)
Rigidit	6.2 (± 0.8)	2.5 (± 1.0)
Anxiety	6.3 (± 0.8)	2.8 (± 0.8)
Depression	6.8 (± 1.2)	3.2 (± 1.3)

*Mean and standard deviation
Source: The Authors, 2018.

Regarding the mean of the patients' FIQ assessment, the first three items have a different classification from the other seven. In the initial assessment of functional capacity, an average value of $16.2 (\pm 3.6)$ was obtained, which changed to $9.2 (\pm 1.8)$, as for well-being, the initial average of $5.5 (\pm 0.5)$ went to $2.3 (\pm 1.2)$ and in relation to absenteeism from $1.3 (\pm 1.8)$ to $0.3 (\pm 0.8)$ after treatment (Table 3). The patient's well-being may be associated with the effects of physical exercises [19]. It

can be seen through the mean of the FIQ that the greatest difficulty of the patients presented in the item depression with the value of $6.8 (\pm 1.2)$ which changed to $3.2 (\pm 1.3)$, and the lower was the body stiffness $6.2 (\pm 0.8)$ which went to $2.5 (\pm 1.0)$ the classification is significant when the post score becomes lower than the pre, so all other domains: pain, tiredness, awakening, anxiety, presented significant post-treatment changes, improving the quality of life of fibromyalgia patients through kinesiotherapy exercises. (Table 3).

In a study with 70 fibromyalgia patients, the incidence of depression was high, about two thirds of the sample. It was associated with a decrease in quality of life in certain aspects: physical aspects, pain, social aspects, mental and emotional aspects and health in general [20]. Physiotherapy has an important objective of relieving symptoms, improving the functional abilities of patients and working on prevention, avoiding poor quality of life [21]



Source: The Authors, 2018.

Graph 4. Representation of the average of comparative data before and after treatment using the Pittsburgh Questionnaire

Regarding the Pittsburg scale (Graph 4), the initial results identified changes in sleep. However, after the kinesiotherapeutic treatment there was an improvement, verified by the score from 6.5 (initial) to 3.2 (final), thus obtaining a good result, as the classification is significant when the post score becomes lower than the pre. According to the American Academy of Sleep Medicine [22], studies have shown that poor sleep quality is present in 76% -90% of patients with fibromyalgia compared to 10% -30% of healthy individuals. Non-restorative sleep is observed in 99% of the volunteers in a study by Theadorn et al [23], in which they evaluated 101 patients diagnosed with fibromyalgia, sleep quality was a predictor of pain, fatigue, and social relationships. The insomnia present in fibromyalgia is shown by the difficulty in initiating sleep, linked to the degree of pain, but associated with the difficulty of maintaining sleep or the fact of waking up several times, not having a restorative sleep consequently the feeling of tiredness and irritability [24]. The practice of regular activities active the production of growth hormone, which helps in deep sleep, of which fibromyalgia has a deficit. The same is indicated to perform six hours before bedtime. [25].

Conclusion

Fibromyalgia has a negative impact on the quality of life of fibromyalgia patients, involving physical, emotional and even social aspects. All patients at the beginning of the treatment had the same complaint, the difficulty about their functional

capacity, reporting that they were unable to perform the activities of daily living, consequently leading to depression, anxiety, and especially the lack of motivation for treatment. Physiotherapy does not aim only at relieving pain, but at all the symptoms caused by the pathology, also acting in the improvement of activities of daily living and in the prevention and promotion of health. Initially, kinesiotherapeutic exercises generated a worsening of symptoms, especially pain, and the patients reported that the difficulty in performing them was very great. However, with the succession of activities, the discomforts began to decrease, the benefits and the evolution were already observed between the eighth and tenth session after the beginning of the exercises and continued to increase, overlapping the initial discomfort.

It was noticed that the patients arrived at the clinic often anxious, during the breathing exercises it was possible to perceive that little by little she was becoming calmer, and the pains consequently eased, the exercises like stretching and strengthening became easier to be executed. Kinesiotherapeutic exercises in patients with fibromyalgia have positive effects on quality of life and health promotion, but treatment must be continuous. Additional studies are needed to assess the long-term effects of these activities, using a larger sample of patients and a longer treatment period.

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