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REVIEW

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Use of physiotherapy resources for patients with fibromyalgia

A utilização de recursos fisioterapêuticos para portadores de fibromialgia

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ABSTRACT

Introduction: Fibromyalgia is a non-inflammatory rheumatic syndrome of unknown etiology manifested in the musculoskeletal system through diffuse and chronic pain and presence of tender points, which may be associated with fatigue, anxiety, muscle stiffness, skin sensitivity, pain after exercise, functional impairment and sleep disorders. **Objective:** This study aimed to perform a systematic literature review in order to check which physiotherapy resources are mostly used today and what are the most significant results in the treatment of fibromyalgia. **Method:** An integrative literature review was conducted by searching electronic databases of indexed data such as Latin American and Caribbean Health Sciences (LILACS), MEDLINE/ PubMed and Scientific Electronic Library Online (SCIELO). Randomized clinical trials were selected in the period from January 2001 to June 2013 published in Portuguese, English and Spanish. Methodological quality was assessed using the Jadad Quality Scale. **Results:** Overall, 522 studies were reviewed in full and only 13 were included after application of the exclusion criteria. Among these, articles that addressed the use of electrotherapic resources (n = 4), hydrotherapy (n = 3), conventional therapy (n = 3), physical exercise (n = 2) and multidisciplinary treatment (n = 1) were identified, with diversified results, protocols and application times of each methodology. **Conclusion:** It has been found that there are a small number of studies with scientific relevance published in the last 10 years evidencing techniques that have obtained better results in the treatment of patients with fibromyalgia. Further studies with better design aimed at obtaining more conclusive results should be conducted.

Keywords: Fibromyalgia; Physiotherapy; Physiotherapy resources.

RESUMO

Introdução: A fibromialgia é uma síndrome reumática não inflamatória, de etiologia desconhecida, que se manifesta no sistema musculoesquelético, por meio de dor difusa e crônica, presença de pontos sensíveis (*tender points*), podendo estar associada com a fadiga, a ansiedade, a rigidez muscular, a sensibilidade cutânea, a dor após o exercício físico, a incapacidade funcional e a anormalidades do sono. **Objetivo**: O estudo teve como objetivo realizar uma revisão sistemática da literatura, no intuito de verificar quais os recursos fisioterapêuticos mais utilizados na atualidade, como também quais os resultados mais significativos no tratamento da fibromialgia. **Método:** Foi realizado um estudo de revisão integrativa da literatura, por meio de busca nas bases eletrônicas de dados informatizadas e indexadas, como Literatura Latino-Americana e do Caribe em Ciências da Saúde (LILACS), MEDLINE/Pubmed e Scientific Eletronic Library Online (SCIELO). Foram selecionados ensaios clínicos randomizados, entre os períodos de janeiro de 2001 a junho de 2013, em língua portuguesa, inglesa e espanhola. A qualidade metodológica foi verificada através da Escala de Qualidade de Jadad. **Resultados:** 522 estudos foram revisados na integra, sendo que somente 13 foram incluídos após aplicação dos critérios de exclusão. Dentre estes, foram identificados artigos que abordaram a utilização de recursos eletroterápicos (*n* = 4), hidroterapia (*n* = 3), fisioterapia convencional (*n* = 3), exercícios físicos (*n* = 2) e tratamento multidisciplinar (*n* = 1), sendo diversificados os resultados, protocolos e tempos de aplicação referentes a cada modalidade. **Conclusão:** Foi constatada a existência de um número pequeno de estudos, com relevância científica, publicados nos últimos 10 anos, evidenciando as técnicas que obtiveram melhores resultados no tratamento dos portadores de fibromialgia. Torna-se necessário a elaboração de estudos com um melhor delineamento, ensejando resultados mais conclusivos.

Palavras-chave: Fibromialgia; Fisioterapia; Recursos fisioterapêuticos.

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INTRODUCTION

Fibromyalgia is a non-inflammatory rheumatic syndrome of unknown etiology, manifested in the musculoskeletal system through diffuse and chronic pain, presence of tender points and may be associated with fatigue, anxiety, muscle stiffness, skin sensitivity, pain after exercise, functional impairment and sleep abnormalities.[1]

The global average prevalence is 2.7%, ranging from 0.4% in Greece to 9.3% in Tunisia. In continental terms, the average is 3.1% in the Americas, 2.5% in Europe and 1.7% in Asia. Regarding gender, the average is 4.2% (female) and 1.4% (male).[2] In Brazil, a study was conducted on the prevalence of rheumatic diseases in which fibromyalgia, occurred in 2.5% the population of Montes Claros in Minas Gerais.[3] Another study conducted with elderly found the prevalence of 5.5%, the most common symptom pain in women than men.[4]

Initially, the criteria for the diagnosis of fibromyalgia have been defined by the American College of Rheumathology (ACR) in 1990. From 2010 new diagnostic criteria were introduced, using a self-administered questionnaire is recommended, more suitable for epidemiological studies population-based, on basic health care.[5-7]

Ozgocmen et al.[8] reported that there is a trend of increasing prevalence of fibromyalgia in fibromyalgia patients relatives, relating found the genetic and environmental factors. The region of chromosome 17p11.2-q11.2 showed suggestive evidence of connection with fibromyalgia, particularly in the serotonin transporter gene (SLC6A4) and transient receptor potential vanilloid 2 (TRPV2).[9]

Some neurotransmitters such as serotonin, norepinephrine, dopamine, substance P, and endorphins, enkephalins target proved to be during the course of the hyperactive syndrome. As regards tender points, some viruses, such as coxsackie B and parvovirus seem to be involved.[10] Some cytokines express receptors for bacteria and viruses, may also be some connection between them.[11]

The symptoms of fibromyalgia often cause great impact on the daily lives of its carriers, providing a break from the routine, the consequence of which tends to maintain over time, due to the chronic nature of the disease. (12) In all patients the diffuse and chronic pain is the presenting symptom involving the peripheral and axial skeleton. The character of the pain is variable and can be burning, stabbing, weight, "fatigue type" or a bruise. The main symptoms that affect fibromyalgia patients are sleep disturbance, fatigue and stiffness in the body. Other symptoms such as skin sensitivity, irritable bowel syndrome, irritable bladder syndrome, cognitive disorders, migraine, dizziness, fluid retention, paresthesia, Raynaud's phenomenon, temporomandibular dysfunction, mood swings, anxiety and depression are also commonly found.[13-14] High levels of pain in patients with fibromyalgia can interfere with the development of professional and social activities, motor and cognitive tasks as well as the destabilization of family relationships.[4] Depression is often linked to reduced quality of life.[12]

Frequently, the therapeutic approach used in the treatment of fibromyalgia is directed only to the alleviation of symptoms. Physical therapy plays an important role in addressing this grievance through several of its therapeutic features such as electrotherapy, hydrotherapy and kinesiotherapy, among others,[15] contributing to the reduction of pain, to improve flexibility and strength muscle, restoring restorative sleep, improve self-esteem, sense of well-being and consequently improving the quality of life of patients with fibromyalgia.[16-17]

The hydrotherapy has been used more frequently in the treatment of fibromyalgia to promote different reactions from those experienced on the ground. Thus, aquatic exercises are well tolerated because the water thermal environment helps to reduce pain and muscle spasms,[18] increasing total sleep time (VITORINO, et al., 2006), improving peripheral circulation, benefiting venous return, as well as providing a massager and relaxing effect.[19]

The transcutaneous electrical nerve stimulation (TENS) has produced important results in the fight against pain.[20] TENS is a method to produce pain relief by applying a biphasic rectangular wave pulse through electrodes on the skin surface. Depending on the modulation frequency, the working principle of TENS is associated with the gate control theory of pain or the release of endogenous opioids.[21] The low frequency TENS increases β-endorphin and serotonin levels in the nervous system central.[22]

Therapeutic exercise is widely used in improving the quality of life being effective in reducing the symptoms of individuals with fibromyalgia.[23] Aerobic exercise of low intensity and stretching on the ground improves pain, functional capacity, physical and social aspects and mental health.[24]

Based on these assumptions, the study aims to systematically review the literature in order to check which physical therapy resources most used today, but also what are the most significant results in the treatment of fibromyalgia.

METHODS

We performed an integrative review of literature through electronic databases of computerized and indexed data, searching for scientific articles in databases of health sciences in general and Latin American and Caribbean Health Sciences (LILACS), MEDLINE/PubMed and Scientific Electronic Library Online (SciELO) using the following key words and their combinations: fibromylagia, physiotherapy, eletrotherapy, hidrotherapy, exercise and kinesiotherapy.

Scripts were used for structured design of the research. The articles identified were considered for analysis when it came to original studies available in its entirety through access to the Journals Portal of Periódicos da Coordenação de Aperfeiçoamento Pessoal de Nível Superior (CAPES), keeping the terminology of the authors, published in Portuguese,

English or Spain, from January 2001 to June 2013, which made reference in its content resources and physical therapy techniques related to fibromyalgia patients.

It was adopted as exclusion criteria review articles, experimental animal studies, case reports and editorials, completion of course work are, items only relating to quality of life, dissertations and theses, ie documents they were not in article format, items not explored the theme of the study or not detailed protocols and score on the Jadad Quality Scale less than 3.

To verify the quality of the studies was applied to Jadad Quality scale,[25] whose scores (randomness, random, double blind, masking, description of losses and exclusions) of less than 3 were not considered methodological quality. Were presented the results of this review, the studies that characterized the randomized clinical trials.

RESULTS

Table 1 shows the results of the descriptors used in the research, were identified 522 articles, distributed in the LILACS database - 22 articles in SCIELO base - 04 articles and Medline/PubMed - 496 articles. The search strategy with fibromyalgia descriptors and physiotherapy was the one with the greatest number of articles in three databases (420 publications).

The study excluded 509 articles that not fit the inclusion criteria of the study. Of these, the full text was not available in 183 papers, review articles totaled 118 publications, 93 studies did not show adequate methodological quality, according to JADAD scale, not explored the theme of the study or not detailed its protocols in 78 papers 23 publications were not in article format, case reports totaled 6 articles and 5 articles were not written in the language proposed by the survey (Figure 1).

After applying the exclusion criteria, 13 studies remained the Medline/PubMed database, included in this review, aiming to analyze the use of hydrotherapy, electrotherapy and therapeutic exercise in treating fibromyalgia (Table 2). The search with fibromyalgia descriptors and physiotherapy was the one with the largest number of articles (11 publications).

The criteria of methodological of Jadad quality scale (1996), the jobs gained 3 points or more were included and considered potentially relevant. Of the 13 studies selected, all had adequate randomization and showed a good method of masking. Among the articles, five were described as double-blind, three reported no losses and larger deletions than 10% of the sample (Table 3 and Table 4).

DISCUSSION

This systematic review was conducted using as a tool the Jadad scale, allowing evaluate clinical studies, published in leading databases, addressing the use of physical therapy

Table 1. Statement of articles indexed in the databases searched.

Descriptors	LILACS	SCIELO	MEDLINE
Fibromyalgia and physiotherapy	10	2	420
Fibromyalgia and exercise and kinesiotherapy	1	-	-
Fibromyalgia and electrotherapy	2	-	46
Fibromyalgia and hydrotherapy	9	2	30
Total articles			522

Table 2. Statement of indexed articles included in the search.

Descriptors	LILACS	SCIELO	MEDLINE
Fibromyalgia and physiotherapy	-	-	11
Fibromyalgia and exercise and kinesiotherapy	-	-	-
Fibromyalgia and electrotherapy	-	-	1
Fibromyalgia and hydrotherapy	-	-	1
Articles included in the study	0	0	13

Exclusion criteria	Nº articles
- Review articles	118
- Experimental animal studies	-
- Case reports or editorials	6
- Articles only relate to quality of life	3
- Documents that are not in article format	23
- Articles that do not explored the theme of the study or not detailed protocols	78
- Items not available	183
- Articles not written in English, Portuguese or Spanish	5
- Items not selected by the Jadad scale (1996)	93
Total of articles	509

Figure 1. Statement of indexed items excluded in the search.

Table 3. Methodological analysis of articles according to Jadad Quality Scale

Author/Year	Criteria					TOTAL
	A	B	C	D	E	
ATLAN *et al.*, 2009	**absent**	**present**	**absent**	**present**	**present**	**3**
CASANUEVA-FERNANDEZ *et al.*, 2012	**absent**	**present**	**present**	**present**	**absent**	**3**
DONMEZ *et al.*, 2005	**absent**	**present**	**absent**	**present**	**present**	**3**
EVCIK *et al.*, 2008	**absent**	**present**	**absent**	**present**	**present**	**3**
EVICIK *et al.*, 2002	**absent**	**present**	**absent**	**present**	**present**	**3**
FREGNI *et al.*, 2006	**absent**	**present**	**present**	**present**	**present**	**4**
HARGROVE *et al.*, 2012	**absent**	**present**	**present**	**present**	**absent**	**3**
MENDONCA *et al.*, 2011.	**absent**	**present**	**present**	**present**	**present**	**4**
SANUDO *et al.*, 2011	**absent**	**present**	**absent**	**present**	**present**	**3**
TAYLOR *et al.*, 2013	**absent**	**present**	**present**	**present**	**absent**	**3**
TOMAS-CARUS *et al.*, 2007	**absent**	**present**	**absent**	**present**	**present**	**3**
TOMAS-CARUS *et al.*, 2009	**absent**	**present**	**absent**	**present**	**present**	**3**
VITORINO *et al.*, 2006	**absent**	**present**	**absent**	**present**	**present**	**3**

A: The study was defined as random, B: The method of randomization was adequate C: The study was described as double-blind, D: The masking method was adequate and E: There was reports of losses and exclusions.

Table 4. Summary of the review.

Author/Year	Type of study and sample size (n)	Study design	Duration of intervention (months)	Study losses	Results
EVCIK *et al.*, 2002.	Randomized controlled clinical trial n=42	To evaluate the effectiveness of thermal therapy in the treatment of patients with fibromyalgia.	3 weeks	Not occurred	After completion of treatment with balneotherapy improvement was observed in the number of tender points, pain and symptoms of fibromyalgia.
DÖNMEZ *et al., 200*5.	Randomized controlled clinical trial n=30	To compare the effects of spa therapy in relation to medical treatment commonly prescribed for patients with fibromyalgia.	2 weeks	yes	Treatment with spa therapy showed significant improvement in pain, reduction in tender point count, sleep disturbance, fatigue, and symptoms evidenced in FIQ Beck inventory up to 9 months after treatment.
FREGNI *et al.*, 2006.	Randomized controlled clinical trial n=32	To investigate whether treatment with electric transcranial direct-current stimulation results in relieving pain in patients with fibromyalgia.	40 days	yes	Conducted therapy in the primary motor cortex achieve a significant improvement in pain, anxiety and depression in this population.
VITORINO *et al.*, 2006.	Randomized controlled clinical trial n=50	To compare hydrotherapy and conventional therapy in the treatment of fibromyalgia, related quality of life, total sleep time and total time nap.	3 weeks	Yes	Any hydrotherapy as conventional therapy promotes improvements in quality of life, total sleep time, and decrease in total nap time, and hydrotherapy had the greatest effect on total sleep time, and decrease in total doze time on the population studied.
TOMAS-CARUS *et al.*, 2007.	Randomized controlled clinical trial n=34	Evaluate the effects of a period of water training and the quality of life related to health and physical fitness in women with fibromyalgia.	12 weeks	Not occured	Significant positive effects of aquatic training were found in physical function, bodily pain, general health perceptions, vitality, social function, emotional problems and mental health, balance and climb stairs. After the intervention period, there was improvement in pain in the body and emotional problems were kept.

Table 4. Continued...

Author/Year	Type of study and sample size (n)	Study design	Duration of intervention (months)	Study losses	Results
EVCIK *et al*., 2008.	Randomized controlled clinical trial n=63	To investigate the effectiveness of aquatic exercise in fibromyalgia syndrome.	5 weeks	Yes	At the end of treatment was observed improvements in the FIQ scores and decrease in the number of tender points. There were improvements in depression and levels of pain after aquatic therapy.
ALTAN *et al.,* 2009.	Randomized, prospective, blinded and controlled n=50	To investigate the effect of Pilates against pain, functional status and quality of life in patients with fibromyalgia.	12 weeks	Yes	Both in the treatment group as Pilates the exercise group were improvements in FIQ parameters and pain. After 12 weeks of treatment group was treated with pilates who remained with effective results.
TOMAS-CARUS *et al.,* 2009.	Randomized controlled clinical trial n=30	To assess changes in muscle strength during 32 weeks of supervised aquatic training, quality of life and postural balance.	32 weeks	Yes	After treatment with exercise found improvements in the strength of flexor and extensor muscles of the knee (concentric), knee extensors (eccentric) and postural balance. The treatment also led to improvements in physical function (pain, mental health, vitality, emotional problems, physical and mental health).
MENDONÇA *et al*., 2011.	Randomized, prospective, blinded and controlled n=30	To determine the distribution of current and analgesic effects in the short term electric transcranial direct-current stimulation in fibromyalgia	10 months	Not occured	The groups treated with Cathode-SO and Anode-SO were followed improvement of pain in fibromyalgia patients.
SAÑUDO *et al*., 2011.	Randomized controlled clinical trial n=42	To assess the impact of a program combining aerobic, strength and flexibility verses usual care in the perception of health, functional capacity, health and depression in patients with fibromyalgia.	24 weeks	Yes	The results showed that the combined program of moderate exercise applied twice a week improved the function and quality of life of patients with fibromyalgia.
CASANUEVA-FERNANDEZ *et al*., 2011.	Randomized, prospective, double blinded and controlled n=34	To evaluate the effectiveness of a multidisciplinary treatment (massage, ischemic pressure, aerobic exercise and thermotherapy) in severely affected patients with fibromyalgia.	8 weeks	Yes	At the end of treatment there was significant improvement in the experimental group compared to perceived health, social functioning, grip strength test and the six-minute walk.
HARGROVE *et al*., 2012.	Prospective, double-blind, placebo controlled. n= 77	To evaluate the efficacy, safety and tolerability of noninvasive cortical electrical stimulation in the treatment of fibromyalgia.	11 weeks	Yes	There was improvement in the active treatment group patients in the number of tender points, pain threshold, fatigue and restful sleep.
TAYLOR *et al*., 2013.	Randomized, prospective, double blinded and controlled n=57	To investigate the effects of electrical stimulation therapy cranial electrical microcurrent (CES) on activity in brain regions of pain processing.	8 weeks	Yes	Individuals who used the device had a great reduction in average pain than those who used a device or yesulador received usual care alone over time.

resources in addressing the symptoms of fibromyalgia, which is currently an important public health problem.

Regarding the use of electrotherapic resources for the relief of pain in patients with fibromyalgia, studies of the type randomized, controlled clinical trial[26-28] used the direct current stimulation (TDCS) in the treatment of patients. Fregni et al.[26] used a placebo group and two other groups, wherein one group received continuous current in the motor cortex and another group in the dorsolateral prefrontal cortex of the left side, and shows consisting of 32 female patients. They concluded that the therapy conducted in primary motor cortex obtained a significant improvement in painful symptoms ($p = 0.05$) and anxiety ($p < 0.0001$). In the study by Mendonca et al[27] was carried out with 30 patients, the same modulation

previous work was used and participants are assigned to 5 different groups (Cathode-M1 [electrode positioned at the primary motor cortex region], Cathode-SO [supraorbital area], Anode-M1, Anode-SO and placebo), receiving application via a mounting extracefálica for 10 months. Applications with the Cathode-SO and Anode-SO show significant analgesic effects, p = 0.010 and p = 0.015, respectively.

Following the same approach, Taylor et al.[28] coordinate a prospective, double-blind, placebo-controlled trial with 58 subjects with fibromyalgia, which aimed to investigate the effects of transcranial electric stimulation (microcurrent) on the activity in brain regions processing pain, over 8 weeks, with duration of 60 minutes per day. Participants in the intervention group received loads of 0.5Hz and 100μA of a stimulator device (Alpha-Stim CES), while the placebo group wore a yesulador device, in which no electrical signal was not sent. The subjects receiving the load of the stimulator had a considerable improvement in the average for pain (p = 0.023) than those in the placebo group. Hargrove et al,[29] for 11 weeks, assessed the efficacy, safety and tolerability of noninvasive cortical electrical stimulation (10 kHz, in the form of one or more low-frequency components, usually 40 Hz) in the treatment of fibromyalgia, and achieved improvement in the number of tender points (p<0.001) in pain threshold (p<0.001), fatigue (p=0.02) and refreshing sleep (p=0.02). We observed in these studies that electrotherapy treatment showed its effectiveness in the process of reduction of fibromyalgia symptoms with the use of electrical stimulation, low intensity, especially in the primary motor cortex, providing benefits with respect to pain control.

Regarding the hydrotherapy in relation to clinical determinants that affect the fibromyalgia patients, studies have been conducted in order to alleviate the symptoms of this disease. Dönmez et al.[30] compared the effectiveness of a SPA therapy for treating the symptoms of fibromyalgia in relation to medical treatment commonly used. The treatment consisted of soaking in a thermal heated at 36°C for 20 minutes for 6 days a week, with pressurized thermal water bath heated to 37°C for 15 minutes or massage for 15 minutes. After completion of the treatment in a significant improvement SPA therapy was observed in the general pain (p <0.001), the decrease in the number of tender points (p = 0.001) in sleep disturbance (p = 0.002), the fatigue (p = 0.001) and depression (p = 0.002) for up to 9 months after treatment. The same result was observed in the study Evicik et al.[31] in a randomized controlled trial, using the same procedure for the treatment, heated bath to 36 ° C, once a day, five times a week for 20 minutes, totaling 15 sessions. Em relação ao grupo controle, verificaram uma diminuição no número de tender points (p < 0,001) e da dor (p = 0,05). Later, Evicik et al. (32) performed a new intervention, with 20 minutes of exercises out of the pool, followed by 35 minutes of exercise in the pool heated to 33 ° C, while the control group received only exercises performed at home. After 15 sessions, divided into 3 times a week for 5 weeks, improvement was observed in Impact Questionnaire scores of functional capacity (for the intervention group, p = 0.002 and for the control group, p = 0.001) compared to the reduction the number of tender points (for the intervention group, p = 0.009 and for the control group, p = 0.016) in reducing pain symptoms (for the intervention group, p <0.001 and for the control group, p = 0.003) and symptoms of depression (for the intervention group, p = 0.005 and for the control group, p <0.001). However, the beneficial effect remained only in the group that underwent hydrotherapy.

Regarding to conventional therapy, Vitorino et al.[33] conducted a randomized controlled trial to evaluate the quality of life, total sleep time and total nap time using a group, hydrotherapy, the exercises, stretching and relaxation and in the other group, infrared therapy, exercises, stretching and relaxation. At the end of the study, improved quality of life (P <0.05) in both groups and all 24 patients in the treated group increased hydrotherapy 1 hour total sleep time (p <0.01) and decreased total time nap (p <0.05) compared to the group treated with infrared therapy. Another study in the aquatic environment was conducted by Tomas-Carus et al.[34] which used a water training technique and physical fitness, to evaluate the health and quality of life of the participants. After the water training, physical function and bodily pain improved significantly, with p = 0.029 and p = 0.030, respectively. Considering the quality of life indicators, with regard to general health perception, vitality, social function, emotional problems and mental health, all were significant. When analizazed the balance, the ability to climb stairs with and without resistance, significant results were obtained after a period of 3 months. However, only the reduction of body pain and the emotional problems were maintained. Later, Tomas-Carus et al. (35) assessed the impact of muscle strength after a water training supervised in the balance, and found improved quality of life in all domains of the SF-36, with the exception of social function. Although the applied protocols are different, the effects such as improvement of pain, reduction in the number of tender points and depression were equivalent and important, in most studies that have been conducted using the hydrotherapy. Thus, hydrotherapy is of fundamental importance for functional recovery and especially for the relief of pain in fibromyalgia patients.

The exercise of various forms, has been an important support in the recovery of patients with fibromyalgia. Altan et al.[36] in a randomized, prospective, 50 subjects evaluated the effect of Pilates technique in reducing pain symptoms, functional status and quality of life of patients with fibromyalgia. In the Pilates group were observed significant results regarding the improvement of pain, number of tender points, the scores of the impact of functional capacity, the Nottinghan scores of the health profile and algometrics scores, while the control group (intervention home exercises) improvements were identified only in the number of tender points and algométricos scores.

However, the assessment carried out 12 weeks after the study, only remained the benefits effects in the group that performed the pilates. Sañudo et al.[37] evaluated the effectiveness of a program, lasting 24 weeks, combining cardio, strength and flexibility in patients with fibromyalgia. The results showed that the program was carried out with a moderate intensity, applied twice weekly, obtained significant improvements in SF-36 scores in the context of mental health, vitality, general health, physical function and the impact of the condition functional patients.

The effectiveness of a multidisciplinary treatment applied in fibromyalgia patients was evaluated by Casanueva-Fernandez et al.[38] in a randomized controlled prospective, double-blind. The protocol consisted of massage, pressure on tender points, cardio and thermotherapy through the infrared. Both patients in the control group and the intervention group received one hour, four educational sessions that addressed relaxation techniques, cognitive-behavioral therapy, diet and explanations about the benefits of exercise in patients with fibromyalgia. One month after the end of treatment, there was a significant improvement in the intervention group compared to the perception of health, social functioning, grip strength test and the six-minute walk.

Some methodological limitations found in this review. The non details of the protocols used in intervention, the lack of control group identification, side effects, and especially no description of the number of losses throughout the study, were the most frequent.

CONCLUSION

This systematic review found that there were a small number of studies in various databases with scientific relevance, published in the last 10 years, highlighting the techniques have worked best in the treatment of fibromyalgia sufferers.

It is suggestive that future, larger and more systematic studies are organized to ensure a more adequate and well-defined protocol and a relevant epidemiological design and an appropriate and organized study model, so that there is a more concrete and relevant approach, featuring a scientific rigor, the opportunity to safer results.

AUTHOR'S CONTRIBUTION

AJSN: data collection, analysis and interpretation of data and the wording of article; MFAB and AGCC: conception, study design, data collection, analysis and interpretation of data and the wording of article; MGRA and NMGL: analysis and interpretation of data and the wording of article.

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The authors declare no conflict of interest.

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