

Pilates and Quality of Life of Practitioners with Chronic Pain

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Abstract:

Background: Quality of life refers to the individual's perception of their position in life, within the context of their culture, the value system they live in and to their goals, expectations, standards and concerns. It can be considered as physical, psychological and social well being since it is associated with mental states and harmony between goals and desires. Pilates works intensively with the abdominal muscles of its practitioners, in addition to strengthening and stretching globally and simultaneously the muscles of the entire body, with low impact exercises and with few repetitions. This study aimed to investigate, through a systematic review, the effectiveness of the Pilates method about improving the quality of life of its practitioners presenting chronic pain.

Materials and Methods: A search was carried out in two databases: SciELO and MEDLINE, so the possible studies to be analyzed were identified.

Results: Eighteen articles were selected for the present review, and publications that point to Pilates as a resource to help improve the quality of life and decrease pain in individuals with chronic pain were identified.

Conclusion: However, the number of studies in this area is still small, which points to the need for further studies to investigate the effects of Pilates practise linked to the quality of life in individuals presenting chronic pain.

Key Word: Quality of life; Chronic pain; Pilates training.

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I. Introduction

The perception for each individual about a position in life, in a cultural, political and economic context, about objectives, expectations, standards and concerns refers to the quality of life. Concerning about this, we can highlight physical activity as a practice of great importance, since it is associated with a low level of morbidity and mortality from cardiovascular, musculoskeletal diseases and some types of cancer, demonstrating to be an important factor in people's health in any age and with possible positive impacts on the perception of the quality of life in the population.¹

Quality of life can be considered as physical, psychological and social well-being since it is associated with mental states and harmony between goals and desires. It is also related to a person's living conditions such as housing, food, employment, leisure, culture, among others. Currently, quality of life has been linked to the health of an individual, considering this condition as the absence of disease.^{2,3} Besides, quality of life can be unrelated or related to health the latter situation placing its definition regarding the quality of life in the individual's ability to live without disease or illness. overcome the difficulties of your state. With that, professionals can use some methods and physical activities for health promotion, prevention and rehabilitation of various diseases.⁴

Pilates is one of the methods mentioned above and aims to promote uniform health, engaging the body as a whole and using breathing as one of the principles. This method consists of resisted physical exercises and dynamic stretching. They also encompass several benefits: improved coordination, strength and mobility, efficiency and fluidity of movement, proper posture, restoration of natural animal movement, integration of mind, body and spirit, sense of well-being and improved quality of life.⁵ These exercises require stability of the internal abdominal muscles and pay attention to muscle control, posture and breathing, contributing to better body alignment and preventing injuries.⁶

Pilates Method also aims to improve muscle strength, flexibility and balance, perform the postural correction, promote pain relief and improve motor coordination, thus being an effective way to improve the perception of the quality of life of individuals with chronic pain^{7,8}. Pilates promotes intensive work for

abdominal muscles of its practitioners, in addition to strengthening and stretching globally and simultaneously the muscles of the entire body, with low impact exercises and with few repetitions. It can be performed on devices, with several pulleys and springs of different colours and with different resistance for muscle strengthening, or performed on the ground using only the resistance of the body itself.⁹

Several studies have already been related that the Pilates practise promoted the improvement of chronic pain condition among the individuals who adhered to this method of obtaining positive results in a situation of pain.^{10, 11, 12}

Given the above context, the objective of the present study was to investigate, through a systematic review, the effectiveness of the Pilates method about improving the quality of life of its practitioners with chronic pain.

II. Material And Methods

A systematic review was carried out in which the studies were identified by searching the electronic database MEDLINE and SciELO, from October 2019 to April 2020. Articles from 2010 until the period of the search were selected for analysis.

The articles were located in SciELO using the following terms: “Pilates”, “quality of life” and “pain”. In MEDLINE the following terms were used: “Pilates”, “quality of life” and “chronic pain”. The criteria for inclusion of articles in the study were: (1) articles with full text available; (2) articles written in Portuguese or English; (3) works published between 2010 and 2020; (4) the researches that addressed Pilates as a modality to improve the quality of life of its practitioners with chronic pain. There were no restrictions on the sample to maximize the search results. Patients with previous history of angina, severe vascular disease, or other life threatening disease.

III. Result

After the bibliographic search and reading, 55 articles that did not meet the inclusion criteria or the proposed theme were excluded. Therefore, 9 articles remained to be reviewed. The relevant aspects that were related to the studies that met the inclusion criteria for the present review are shown in Table 1. The following studies were excluded: (1) monographs; (2) review articles; (3) annals of events; (4) dissertations and theses; (5) pharmacological studies or that addressed only this aspect in the improvement of chronic pain.

Table no 1: Description of selected papers

Authors and year of publication	Objetive	Participants, frequency and duration of the intervention	Methods for evaluation	Main results	Conclusions
Küçükçakır, Altan e Korkmaz, 2013. ¹³	Evaluate the effects of Pilates on pain, functional status and quality of life in women with postmenopausal osteoporosis.	60 women (between 45 and 65 years old), divided into 2 groups: exercises at home and Pilates. Exercise program twice a week for one year	Visual Analogue Scale for Pain (VAS Pain), 6-minute walk test, Sit-to-Stand Test for functional status, Qualeffo-41 Questionnaire and Short Form-36 (SF-36).	Significant improvement in all assessment parameters at the end of the exercise program in the Pilates group.	Pilates can be a safe and effective treatment alternative for quality of life in patients with postmenopausal osteoporosis.
Bertoldi et al., 2016. ¹⁴	Assess the impact of the Pilates Method on the quality of life of its practitioners, after three months of activity.	27 individuals of both sexes. Pilates practitioners from one to three times per week for three months.	SF-36, anamnesis encompassing the past/current and familiar history, as well as questions about the practice of physical activity, time of practise and which modalities were practiced.	They pointed out an improvement in the quality of life in the age group up to 30 years, from 41 to 50 years and above 60 years.	Pilates promoted a discreet evolution in the quality of life of the practitioners, with emphasis on the age group between 41 and 50 years old, for the female sex with pathologies
Kofotolis et al., 2016. ¹⁵	Compare the effects of a Pilates program and an exercise program to strengthen the trunk on functional disability and health-related quality of life (HRQoL) in women with nonspecific chronic low back pain (DLC).	101 women with chronic low back pain divided into Pilates group (n = 37), trunk strengthening exercise (n = 36) and control (n = 28). A period of 8 weeks, three times a week	SF-36 and Roland Morris Disability Questionnaire.	The Pilates group reported greater improvements in self-reported functional disability and HRQoL compared to participants in the other groups. The effects were retained for 3 months after the end of the program for the Pilates group and	Pilates improved HRQoL and reduced functional disability more than a trunk strengthening exercise program or controls among women with DLC.

Komatsu et al., 2016. ¹⁶	Evaluate the effects of Pilates on pain, quality of life, depression and anxiety in women with fibromyalgia.	20 women divided into Pilates (n = 13) and control (n = 7) groups. Two weekly sessions of Pilates, for eight weeks.	Anamnesis, 18 tender points described by the American College of Rheumatology, visual analogue scale, Fibromyalgia Impact Questionnaire (FIQ), Depression Inventory and Beck Anxiety Inventory.	to a lesser extent for the other groups. Significant improvement in pain intensity and the number of painful regions in the Pilates group. Strong correlations, mainly between the number of active tender points and the Fibromyalgia Impact Questionnaire.	The results obtained support Pilates as a safe physiotherapeutic resource to improve pain in patients with fibromyalgia
Oksuz e Unal, 2017. ¹⁷	Investigate the effects of clinical pilates exercise on kinesiophobia, pain and functional status and quality of life of patients presenting osteoporosis.	40 women divided into 2 groups: Pilates and control. Exercises performed three times per week for 6 weeks.	VAS Pain, functional tests and Quality of Life Questionnaire of the European Foundation for Osteoporosis (QUALEFFO-41).	Decreased pain, improved kinesiophobia, functional status and quality of life.	As pilates positively affects kinesiophobia, pain, functional status and quality of life, it can be recommended for patients with osteoporosis, as a model of safe exercise.
Cazotti et al., 2018. ¹⁸	Evaluate the effectiveness of Pilates in pain, function, quality of life and consumption of pain medications in patients with a mechanical sore throat.	64 patients, divided into 2 groups: Pilates (n = 32) and control (n = 32). 2 sessions of Pilates per week, for 12 weeks.	Numerical Pain Scale, Neck Disability Index and SF-36.	Statistical differences for pain, function and quality of life in the Pilates group, in addition to lower medication consumption.	Pilates is effective in the treatment of chronic mechanical neck pain, resulting in improved pain, function, quality of life and reduced use of analgesics
Uluğ et al., 2018; ¹⁹	Investigate the effects of different intense treatments on the neck muscles in patients with a chronic sore throat.	56 chronic pain patients randomized into 3 groups: Pilates (n = 20), Yoga (n = 18) and isometric (n = 18). Four Pilates beginner mat exercises, performed in 2 sets of 10 repetitions per day, for 6 weeks.	Ultrasound imaging, goniometer, Neck Disability, Nottingham Health Profile and Beck Depression Inventory.	Improvement in pain, disability, depression and similar quality of life in all groups. Muscle thickness values increased only in the Pilates group.	All types of investigated exercises presented favourable effects on pain and functional scores.
Oliveira et al., 2019. ²⁰	Evaluate the effects of Pilates in reducing pain, improving joint function and quality of life in patients with chronic Chikungunya fever.	51 patients, divided into 2 groups: Pilates (n = 26) and control (n = 25). 2 sessions per week for 12 weeks.	VAS Pain, The Health Assessment Questionnaire (HAQ), 12-Item Short-Form Health Survey (SF-12).	A significant improvement for Pilates group in the range of motion of the shoulder, knee, ankle and lumbar spine.	Pilates can be considered a strategy in the non-pharmacological treatment of the disease.
Medeiros et al., 2020. ²¹	Evaluate the effectiveness of Pilates for improving symptoms in women with fibromyalgia.	42 women divided into 2 groups: Pilates and aquatic aerobic exercises. 2 sessions per week for 12 weeks.	VAS Pain, FIQ, Pittsburgh Sleep Quality Index (PSQI), SF-36, Fear Avoidance Beliefs Questionnaire (FABQ-BR) and Pain-Related Catastrophizing Thoughts Scale (PRCTS).	Improvement in both groups regarding pain and function. Quality of life and the FABQ questionnaire showed improvement only in the Pilates group. Improvement in the PSQI and PRCTS variables in the aquatic aerobic exercise group.	Pilates and aquatic aerobic exercise were effective in improving pain. However, they did not obtain statistically significant different results when compared, which proves that one modality does not overlap with the other.

IV. Discussion

Through this study, it was possible to observe that the practice of Pilates can bring positive results that allow the improvement of the quality of life through the reduction of pain in people who have chronic pain, and, besides, there may be changes that also interfere positively in parameters such as flexibility, posture and functional capacity. Physical activity is pointed as an important practice because it is associated with a low level of morbidity and mortality from some diseases and is thus a relevant factor in the health of people at any age. Corroborating this indication, a study that verified the effects of Pilates on physical fitness, cognition and quality of life in the elderly, showed improvement in limb flexibility, agility, dynamic balance, aerobic endurance test and reaction time in the test of attention and concentration, enabled the authors to conclude that

Pilates becomes an interesting preventive strategy to maintain and improve health status, showing direct and indirect beneficial effects on several aspects, thus contributing to the prevention of diseases and other comorbidities associated with changes resulting from the ageing process.^{1, 14, 22}

The effectiveness of Pilates in the treatment of patients with chronic low back pain was already verified. Some methods and physical activities for promotion, prevention and rehabilitation of various diseases have been indicated. Pilates requires stability of the internal abdominal muscles and pay attention to muscle control, posture and breathing, helping in better body alignment and preventing injury. The effects of a Pilates exercise program on disability, pain, lumbar mobility, flexibility and balance in patients with nonspecific chronic low back pain was investigated.²³ The effectiveness of Pilates to improve symptoms in women with fibromyalgia was demonstrated as the results in this revision shown. Both Pilates and the Aquatic aerobic exercise were effective in improving pain, however, there were no significant differences when compared, which proves that one modality does not overlap the other.²¹

The effects of Pilates in reducing pain, improving joint function and quality of life were also demonstrated as can be observed in our results.²⁰ The authors were able to verify a smaller Visual Analogue Scale, lower scores on the Health Assessment Questionnaire and higher scores on quality of life in the control group compared to Pilates and significant improvement for the Pilates group in the range of motion of the shoulder, knee, ankle and lumbar spine, thus concluding patients undergoing Pilates had less pain, better function and quality of life and increased range of motion. The idea that quality of life is related to health and, thus, the individual would have the ability to live without diseases or to overcome them, in addition to using physical activity as a treatment for various diseases was defended previously.¹⁴

The effects of Pilates on pain, quality of life, depression and anxiety in women diagnosed with fibromyalgia were investigated and there was a significant improvement in the intensity of pain and the number of painful regions in the Pilates group, strong correlations, especially between the number of active tender points and the fibromyalgia impact questionnaire. Thus, the study concluded that the results obtained support Pilates as a safe physiotherapeutic resource to improve symptoms related to patients with fibromyalgia.¹⁶ These findings correlate with the indication that an individual's physical, psychological and social well-being is linked to the quality of life.²⁴ Besides, the effects of a Pilates program and an exercise program to strengthen the trunk on functional disability and health-related quality of life in women with non-specific chronic pain were compared. The authors found that the Pilates group reported greater improvements in self-reported functional capacity and health-related quality of life compared to the other groups, the effects were still retained after the end of the program for the Pilates group. Thus, they concluded that Pilates is a method that can reduce functional disability and improve health-related quality of life in women with chronic low back pain.¹⁵ In fact, Pilates also aims to improve muscle strength, flexibility and balance, perform the postural correction, promote pain reduction and improve motor coordination, thus being an effective way to improve the perception of the quality of life of individuals with chronic pain.¹

This systematic review has limitations, such as the small number of studies included in the analysis, and the impossibility of using a meta-analysis given by the different methodologies employed by them, which did not allow the establishment of a reliable summary measure.

V. Conclusion

The results observed in the present revision points to the positive effects promoted by the practice of Pilates which are possibly indicated to improve quality of life and decrease pain in people with chronic pain. The improvement of other parameters, such as flexibility, posture and functional capacity, in addition to decreasing the need for medication, were also observed in the studies. The revised surveys showed satisfactory results with respect to the positive effects promoted by Pilates. The number of publications related to the effects of the practice of Pilates is still small, so it becomes evident the need to develop studies regarding this type of method and physical activity. Rosuvastatin 20 mg on every other regimen had equal effect when compared to daily dose regimen of atorvastatin 40 mg & rosuvastatin 20mg.

References

- [1]. Costa TRA, Vagetti GC, Piola TS, et al. Comparação da percepção da qualidade de vida em idosas praticantes e não praticantes do Método Pilates. *Cad saúde colet*. 2018;26(3):261-269.
- [2]. Cazotti L, Jones A, Roger D, et al. Effectiveness of the Pilates Method in the Treatment of Chronic Mechanical Neck Pain: A Randomized Controlled Trial. *Arch Phys Med Rehabil*. 2018;99(9):1740-46.
- [3]. Romero M, Vivas-Consuelo D, Alvis-Guzman N. Is Health Related Quality of Life (HRQoL) a valid indicator for health systems evaluation? *Springerplus*. 2013; 2(1):664
- [4]. Araújo DSMS, Araújo, CGS. Aptidão física, saúde e qualidade de vida relacionada à saúde em adultos. *Rev Bras Med Esporte*. 2000;6(5):194-203.
- [5]. Jesus LT, Baltieri L, Oliveira LG, et al. Effects of the Pilates method on lung function, thoracoabdominal mobility and respiratory muscle strength: non-randomized placebo-controlled clinical trial. *Fisioter Pesqui*. 2015;22(3):213-222.
- [6]. Oliveira BFA, Carvalho PRC, Holanda ASS, et al. Pilates method in the treatment of patients with Chikungunya fever: a randomized controlled trial. *Clin Rehabil*. 2019;33(10):1614-1624.

- [7]. Silva PHB, Silva DF, Oliveira JKS, et al. The effect of the Pilates method on the treatment of chronic low back pain: a clinical, randomized, controlled study. *BrJP*. 2018;1(1): 21-28.
- [8]. Kloubec JA. Pilates for improvement of muscle endurance, flexibility, balance, and posture. *J Strength Cond Res*. 2010;24(3):661-7.
- [9]. Vasconcellos MHO, Silva RDS, Santos SMB, et al. The Pilates® Method in the treatment of lower back pain. *Fisioter mov*. 2014;27(3):459-467.
- [10]. Rydeard R, Leger A, Smith D. Pilates-based therapeutic exercise: effect on subjects with nonspecific chronic low back pain and functional disability: a randomized controlled trial. *J Orthop Sports Phys Ther*. 2006;36(7):472-84.
- [11]. Donzelli S, Di Domenica E, Cova AM, Galletti R, Giunta N. Two different techniques in the rehabilitation treatment of low back pain: a randomized controlled trial. *Eura Medicophys*. 2006;42(3):205-10.
- [12]. Silva ACL, Mannrich G. Pilates na reabilitação: uma revisão sistemática. *Fisioter Mov*. 2009;22(3):449-55.
- [13]. Küçükçakır N, Altan L, Korkmaz N. Effects of Pilates Exercises on Pain, Functional Status and Quality of Life in Women with Postmenopausal Osteoporosis. *J Bodyw Mov Ther*. 2013;17(2):204-11.
- [14]. Bertoldi J, Tesser R, Damaceno M. Impacto do Método Pilates na qualidade de vida dos praticantes. *Cinergis*. 2016;17(1):15-21.
- [15]. Kofotolis N, Kellis E, Symeon PV, et al. Effects of Pilates and Trunk Strengthening Exercises on Health-Related Quality of Life in Women with Chronic Low Back Pain. *J Back Musculoskelet Rehabil*. 2016;29(4):649-659.
- [16]. Komatsu M, Avila MA, Colombo MT, et al. Pilates training improves pain and quality of life of women with fibromyalgia syndrome. *Rev Dor*. 2016;17(4):274-278.
- [17]. Oksuz S, Unal E. The effect of the clinical pilates exercises on kinesiophobia and othersymptoms related to osteoporosis: Randomised controlled trial. *Complement Ther Clin Pract*. 2017;26:68-72.
- [18]. Cazotti L, Jones A, Roger D, et al. Effectiveness of the Pilates Method in the Treatment of Chronic Mechanical Neck Pain: A Randomized Controlled Trial. *Arch Phys Med Rehabil*. 2018;99(9):1740-46.
- [19]. Uluğ N, Yılmaz ÖT, Kara M, et al. Effects of pilates and yoga in patients with chronic neck pain: a sonographic study. *J Rehabil Med*. 2018; 50(1):80-85.
- [20]. Oliveira BFA, Carvalho PRC, Holanda ASS, et al. Pilates method in the treatment of patients with Chikungunya fever: a randomized controlled trial. *Clin Rehabil*. 2019;33(10):1614-1624.
- [21]. Medeiros SA, Silva HJA, Nascimento RM, et al. Mat Pilates is as effective as aquatic aerobic exercise in treating women with fibromyalgia: a clinical, randomized and blind trial. *Adv Rheumatol*. 2020; 60: 21.
- [22]. Conceição J, Mergener C. Eficácia do método Pilates no solo em pacientes com lombalgia crônica: Relato de casos. *Rev Dor*. 2012;13(4):385-388.
- [23]. Valenza MC et al. Results of a Pilates Exercise Program in Patients with Chronic Non-Specific Low Back Pain: A Randomized Controlled Trial. *Clin Rehabil*. 2017;31(6):753-760.
- [24]. Beneli L, Carvalho C. Avaliação da qualidade de vida em mulheres de meia idade praticantes de pilates. *Rev Saúde e Meio Amb*. 2016;3(2):54-61.

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