Acupuncture in the relief of osteomuscular pain and improvement of functionality in older adults: a quasi-experimental study

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Abstract

Objective: To assess the effects of acupuncture on the relief of osteomuscular pain in older adults and the potential improvement in functionality for activities of daily living. *Method*: A quasi-experimental study, with pre- and post-intervention assessment using the Visual Analog Scale and the Katz Index. Convenience sample comprising 31 older adults. The intervention period consisted of four weekly treatment sessions. Acupuncture intervention targeted a systemic treatment protocol utilizing five pairs of acupoints: LI4 (Hegu), LIV3 (Taichong), ST36 (Zusanli), PC6 (Neiguan), and SP6 (Sanyinjiao). *Results*: 100% (31) reported experiencing pain, with 64.52% (20) reporting moderate pain (3-7), 25.81% (8) reporting severe pain (8-10), and 9.68% (3) reporting mild pain (0-2). The treatment protocol demonstrated positive outcomes after 4 sessions, with a reduction of pain to a mild degree and an overall average score reduced below 2. The analysis of results from the Visual Analog Scale and the Katz Index showed potential for the use of acupuncture in relieving osteomuscular pain and improving the functionality of the older adult. *Conclusion*: The use of systemic acupuncture techniques yielded satisfactory results in the relief of osteomuscular pain and the enhancement of functionality for activities of daily living of the older adult.

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INTRODUCTION

According to the Sociedade Brasileira de Geriatria e Gerontologia (Brazilian Society of Geriatrics and Gerontology), degenerative diseases not only bring about pain but also directly impact the older adults in their social interactions. In the case of anxiety disorders, they exacerbate fear, depression, and the risk of falls due to reduced functionality[1,2].

Among the non-pharmacological approaches for pain management, acupuncture has emerged as the most recommended, given its cost-effectiveness and minimal side effects. It offers a significant potential for preventing disease progression and recurrence, ultimately contributing to an enhanced quality of life and well-being[3,4].

A meta-analysis involving 3,215 patients with osteoarthritis demonstrated the effectiveness of acupuncture, performed with the application of multiple needles, in improving joint function scores[5]. Other systematic reviews and meta-analyses have further substantiated the beneficial effects of acupuncture and acupuncture-related therapies in musculoskeletal pain-related conditions, reinforcing their low likelihood of adverse events and cost-effectiveness[6,9].

According to the Instituto Paulista de Geriatria e Gerontologia (Paulista Institute of Geriatrics and Gerontology), the accumulation of chronic diseases in the older adults impairs their functional independence and, as a result, their quality of life. Pain emerges, bringing a form of difficulty or limitation in this stage of life, ultimately incapacitating the individual[10].

Lemos et al.[11] and Espírito Santo et al.[4] emphasize that chronic pain is one of the primary causes of functional impairment in older adults. It diminishes joint mobility, discourages engagement in physical exercise, undermines sleep quality, fosters depression, and promotes social isolation.

There is evidence that acupuncture is an effective treatment option for reducing the intensity of chronic pain. Nevertheless, the limited information regarding the scientific value of acupuncture diminishes its utilization in clinical practice within healthcare services[12].

Recent studies[5,9] on acupuncture have been conducted to assess its efficacy in different pain conditions, including low back pain, migraines, fibromyalgia, cervical pain, and abdominal pain. The evidence found has allowed for the conclusion that acupuncture is an effective treatment option for reducing pain intensity[13]. Furthermore, acupuncture encompasses a multidisciplinary approach, which can provide improved therapeutic strategies for the older adults and foster closer connections with gerontological fields[14].

In the analysis of clinical studies on acupuncture, significant challenges are encountered, such as the scarcity of basic research, including studies on the nature of acupuncture, which often renders clinical research insufficient, and researchers work with imprecise assumptions. The scientific community has not dedicated sufficient efforts to explore what needs to be investigated. Relying on the experience of a single individual or the consensus of a single group is not adequate when the goal is to study the field of acupuncture rather than a single acupuncture treatment method[13]. Nevertheless, all studies contribute to a better understanding of their potential purposes and the research questions they can address.

Regarding the improvement of functionality through pain relief, a study that investigated 254 individuals with chronic back and neck pain demonstrated that acupuncture significantly reduced pain and enhanced functional status[15]. In a comparative meta-analysis, a highly significant difference in favor of acupuncture was also found in terms of pain improvement, quality of life, and functionality[16]. Similar results were also observed in a study involving fibromyalgia patients, which evaluated pain, quality of life, and functionality[17]. However, recent studies exclusively focused on the older population have not been identified, indicating a gap in this age group and in this research field.

Studies indicate that life expectancy is increasing significantly, and consequently, rates of osteomuscular pain are likely to rise. This trend can result in decreased quality of life, heightened functional limitations in activities of daily living, increased dependence on caregiver assistance, and medication consumption[4,11,18].

Therefore, it is crucial to test pain treatment methods, such as acupuncture, and assess the enhancement of functionality in older adults for their activities of daily living. In light of this, the aim of the present study was to evaluate the effects of acupuncture on the relief of osteomuscular pain in older adults and its association with improved functionality for activities of daily living.

The current study is pertinent in its contribution to generating scientific evidence on the topic of acupuncture for pain relief in the older adults, while also establishing a relationship with improved functionality. This research provides a theoretical and scientific foundation for the clinical practice of acupuncture and the potential benefits it may offer to the older population in terms of pain management and enhanced functionality.

METHOD

This is a quasi-experimental study[19] involving the assessment of a group before and after the intervention. The research was conducted at the Melhor Idade Fazenda Caxias Center, situated in the municipality of Seropédica, Rio de Janeiro.

This center is an initiative of the Seropédica Municipality and the Secretaria de Assistência Social de Direitos Humanos (Department of Social Assistance and Human Rights), aimed at promoting the quality of life and well-being of the elderly. It had 160 registered older adults. Data collection took place in the months of August and September 2022.

Based on the quasi-experimental study by Cardoso et al.[20], conducted with 66 older adults, an estimated sample size calculation was presented, considering a 95% confidence level and 80% power, with a before-and-after difference of 4%. When applying this data in the GPower 3.1 software, it was decided to use an effect size of 0.5 based on a standard measure, and with α set at 0.05 and a power of 0.80, an estimated sample size of approximately 28 participants was determined for this study, regardless of gender. Due to the possibility of dropouts, an additional 30% was factored in. As a result, 37 older adults' participants were anticipated.

In response to the recruitment call for participation in the study, 38 older adults volunteered, signing the Informed Consent Form (ICF) and completing the sociodemographic and health questionnaire. This questionnaire included inquiries about age, gender, marital status, skin color, physical exercise habits, complaints, pain intensity, location, duration of pain, engagement in any Complementary and Integrative Health Practices (Práticas Integrativas e Complementares em Saúde - PICS), and whether they consumed any type of pain medication, specifying the medication used. Two participants requested withdrawal from the study due to personal reasons, and five did not attend any of the sessions without providing any justification. As a result, the convenience sample was finalized with 31 older adults, all of whom were female, and who completed the study until the end.

The inclusion criteria for this study encompassed individuals aged 60 years and older of both sexes who reported complaints of osteomuscular pain lasting for more than three months. The Visual Analog Scale was employed for pain assessment during the sessions, but during the participant selection process, only self-reporting of osteomuscular pain was required.

Excluded from the study were older adults who were currently using any Complementary and Integrative Health Practices during the data collection period, those who had a fear of needles, individuals with neuropathic pain, those using morphine, codeine, or methadone-based anti-inflammatories, and those with a history of acupuncture treatment for osteomuscular pain lasting a minimum of three months. The exclusion criteria mentioned for anti-inflammatories were considered due to their significant impact on the central nervous system, making it difficult to effectively assess the treatment's effects achieved through needle application.

The protocol used in this research was based on the studies by Lam et al.[21], Zucker et al.[22], and Sönmez and Kozanhan[23], following an integrative literature review. The protocol was designed for a treatment period consisting of only four treatment sessions, one per week.

In the period leading up to the intervention, a poster was disseminated inviting individuals aged

60 and older of both sexes with complaints of pain to participate in the project. The intervention took place over four sessions, from day one to day four (D1 to D4), with four meetings for acupuncture application, once a week, each session lasting 30 minutes, totaling four consecutive weeks of acupuncture at pre-established times. In the documentary phase that preceded the intervention days, the researcher presented the older adults with the objectives, procedures to be carried out, and all other necessary information, obtaining their signatures on the Informed Consent Form.

Subsequently, the sociodemographic and health questionnaire was completed with the assistance of the researcher in a reserved room designated for acupuncture sessions. The questionnaire completion took approximately 10 minutes.

Regarding the data collection for the pain reported by the older adults, it was conducted by another researcher outside the acupuncture treatment room using the Visual Analog Scale (VAS) before and after each session. This scale consists of a numbered ruler ranging from 0 (zero) to 10 (ten) with divisions indicating mild (0-2), moderate (3-7), and intense (8-10) pain. It also incorporates a color spectrum, starting with cool colors such as blue and green, progressing through yellow, and ending with warm colors, culminating in red. Additionally, the VAS includes emoticons that begin with expressions of happiness and well-being and conclude with facial expressions associated with suffering and pain.

The assessment of functionality for activities of daily living was conducted using the Katz Index[24], which measures an individual's capacity in basic daily activities. This index consists of six items aimed at identifying whether the older adult requires "assistance," which can be in the form of supervision, guidance, or personal aid. These activities include **bathing** (in bed, bathtub, or shower), **dressing** (retrieving and putting on clothing, including underwear and fasteners), **using the toilet** (both urinating and defecating, followed by self-hygiene and dressing), **transferring** (the act of lying down, sitting, and/or standing up), **continence control** (for both feces and urine), and **eating** (any assistance

with eating). The Katz Index was administered by the researcher before D1 and after D4.

The analysis of the Katz Index was based on the studies by Katz et al.[24] and Duarte et al.[25]. The index is categorized into eight patterns: **A** – independent in all activities; **B** – independent in all activities except one; **C** – independent in all activities except bathing and one additional activity; **D** – independent in all activities except bathing, dressing, and one additional activity; **E** – independent in all activities except bathing, dressing, using the toilet, and one additional activity; **F** – independent in all activities except bathing, dressing, using the toilet, transferring, and one additional activity; **G** – dependent in all activities; and **"other"** – dependent in at least two functions but not classifiable as **C**, **D**, **E**, or **F**.

The acupuncture intervention followed a systemic treatment protocol through the use of five pairs of acupoints: large intestine 4 (LI4 - Hegu), liver 3 (LR3 - Taichong), pericardium 6 (PC6 - Neiguan), stomach 36 (ST36 - Zusanli), and spleen pancreas 6 (SP6 - Sanyinjiao). These points, widely employed in clinical practice, have their efficacy supported by the scientific community and enhance the flow of Qi (energy) and Xue (blood), preventing stagnation in any region of the body. The needles were applied bilaterally, totaling 10 needles per participant during each session, with a depth of 0.5 cm[21-23,26].

Disposable needles of size 0.25x30mm from the Lautz brand were used. These needles were manually manipulated without the need to elicit Qi (the sensation of energy flow at the needling site) and were disposed of after each session in a puncture-resistant sharps container[26-27].

Each participant was individually attended to, with records kept in a treatment diary. During all sessions, the external researcher completed the diary based on a script consisting of three questions: 1) How have you been feeling from the last seven days until today?; 2) How would you rate your pain right now on a scale of 0 to 10 (an image of the VAS was presented for the participant to point to their pain level)?; and 3) Have you used any pain medication in the last seven days?

On D1, before commencing needling, the Katz Index instrument, the treatment diary script with the three questions, and the VAS were administered. Subsequently, the participant proceeded to the treatment room with the acupuncturist researcher. She was instructed to lie on the treatment table for needling, where the needles were retained for 20 minutes and then removed and disposed of. At the end of the session, the VAS was presented again to the participant to indicate the level of pain she was experiencing at that moment after acupuncture.

On D2, D3, and D4, the procedures were repeated, including the use of the Katz Index only on D4, to provide a parameter for the analysis of functionality between D1 and D4.

The data were coded, organized, and subsequently arranged in a spreadsheet using the Microsoft Excel software, version 365.

In the analysis of data normality, the Shapiro-Wilk test was used, considering p≥0.05. The analysis of functionality for activities of daily living (Katz Index) and the results of the VAS were presented using categorical variables described in terms of absolute and relative frequencies, and numerical variables described by median and quartiles[28,29].

To verify whether there was a change in the Katz Classification between the first acupuncture session and the last, the Wilcoxon Test was used. For the difference between the VAS scores before and after each session, a 95% confidence interval was presented, and the Wilcoxon Test was conducted. The same test was applied to compare the VAS score before the first session and after the last. The significance level considered in these analyses was 5%[28,29].

As per the guidelines outlined in Resolution 466/2012 of the Conselho Nacional de Saúde (National Health Council) regarding research involving human subjects, a research protocol was submitted to the Research Ethics Committee of the institution via the *Plataforma Brasil*, under the Certificado de Apresentação de Apreciação Ética (Certificate of Presentation for Ethical Consideration) 57644922.1.0000.5243, as documented in the substantiated opinion of Research Ethics Committee number 5.534.057.

The entire dataset supporting the results of this study is available upon request to the corresponding author.

RESULTS

The study included 31 aged women with an average age of 68.32 ± 6.15. Regarding marital status, 41.94% (13) were married, 35.48% (11) were widowed, 12.9% (4) were divorced, and 9.68% (3) were single. In terms of self-declared skin color, 58.06% (18) identified as white, and 41.94% (13) as black. Out of the 31 aged women who were questioned about engaging in physical exercise, only one reported not participating, even though they were part of a group where physical exercise was one of the main activities.

All 31 older adult participants reported experiencing pain. The intensity, location, and manifestations of pain were described in various ways, and the pain had been present for more than 3 months. Among the participants, 64.52% (20) reported moderate pain (3-7), 25.81% (8) described intense pain (8-10), and 9.68% (3) mentioned mild pain (0-2).

At each session, the participants were asked if they had used any pain medication in the last 7 days, and these responses are presented in **Table 1**.

In further analysis of medication consumption, when asked about the use of any pain medication, 25 (80.65%) of the aged women responded affirmatively, and 3 (9.68%) said "sometimes." The main categories of medication mentioned by them included analgesics, anti-inflammatories, anxiolytics, and others. Out of the 28 aged women, 75% (21) were taking analgesics, 17.86% (5) were using anti-inflammatories, 3.57% (1) were taking anxiolytics, and 28.57% (8) were using other medications. It's worth noting that some of them used different categories of medications simultaneously.

It can be observed that, in the follow-up of acupuncture sessions, there was a reduction of approximately 50% in the consumption of emergency pain medications, known as S.O.S., which suggests that acupuncture significantly reduced pain and, consequently, the use of analgesics in the studied group (Table 1).

In Table 2, it can be observed that on the first day of treatment, the pain level had a median of 5 [2.5-7] and, afterward, it decreased to 1 [0-3]. On the second day, the initial median was 3 [0-5.5], and it reduced to 0 [0-2] after the session. On the third day, the initial median was 2 [0-5.5], and it decreased to 0 [0-1]. On the fourth day of treatment, the median was 0 [0-5.5], and after acupuncture application, it dropped to 0 [0-0]. All results showed a p-value <0.01. The use of the VAS for pain assessment proved to be easily interpretable by the participants. In Table 2, you can track this progression, with a reduction in the median pain level at each session.

Image 1 shows the trend of reduction in the Visual Analog Scale (VAS) variable before and after each session, facilitating the visual analysis of the decrease in pain scores when observed before the first session and after the last session.

The Katz Index classification showed a relative improvement in functionality, moving from classification **B** to **A**, as presented in Table 3.

Overall, there was an improvement in functionality because, before the acupuncture sessions, 67.7% (21) were classified as A, independent for all activities, and 32.3% (10) were classified as B, independent for all activities except one. After the acupuncture care, 87.1% (27) of the participants, approximately 19.4% (6) more than at the beginning of the study, became independent for all activities, and only 12.9% (4) of them were classified in category B, independent for all activities except one (Table 3).

In Table 4, the VAS values concerning the change in Katz classification before and after the intervention are presented. The first column displays the median and quartiles of the VAS for participants initially classified as Katz A at the beginning and at the end of the treatment (**A → A**, n=21). In the second and third columns, the VAS data for participants with a classification change from Katz **B → A** (n=6) and Katz **B → B** (n=4) are presented, respectively. It can be observed that, in all three Katz classification groups, the median of pain was lower after the acupuncture sessions, except for those where the initial median was already zero.

Table 1. Consumption of pain medication in the seven days before the session. Seropédica, RJ, 2023.

Variables (n=31)	N (%)
"Did you use any pain medication in the last 7 days?"	
1st acupuncture session	22/31 (70.97%)
2nd acupuncture session	11/31 (35.48%)
3rd acupuncture session	07/31 (22.58%)
4th acupuncture session	07/31 (22.58%)

Source: Authors, 2023.

Table 2. Assessment of pain during acupuncture sessions based on the Visual Analog Scale. Seropédica, RJ, 2023.

Variable	Before	After	Before x After (CI 95%)	P-value*
		Day 1		
Median [quartiles]	5 [2.5–7] (n=31)	1 [0–3] (n=31)	4 [2.50; 4.50]	< 0.01
		Day 2		
Median [quartiles]	3 [0–5.5] (n=31)	0 [0–2] (n=31)	3 [2.50; 4.00]	< 0.01
		Day 3		
Median [quartiles]	2 [0–5.5] (n=31)	0 [0–1] (n=31)	4 [2.50; 5.00]	< 0.01
		Day 4		
Median [quartiles]	0 [0–5.5] (n=31)	0 [0–0] (n=31)	4.5 [3.50; 5.50]	< 0.01

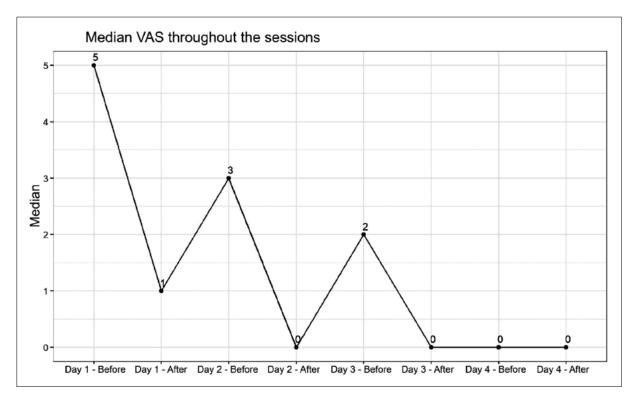Source: Authors, 2023; CI = Confidence Interval; * Wilcoxon test.

Figure 1. Analysis of pain using the VAS before and after each Acupuncture session. Seropédica, RJ, 2023.

Source: Authors, 2023; *Wilcoxon test.

Table 3. Overall Katz Index classification, before and after acupuncture sessions. Seropédica, RJ, 2022.

Katz Index	Before	After
A - Independent for all activities.	21 (67.74%)	27 (87.1%)
B - Independent for all activities except one.	10 (32.26%)	4 (12.9%)
C - Independent for all activities except bathing and one additional.	0 (0%)	0 (0%)
D - Independent for all activities except bathing, dressing, and one additional.	0 (0%)	0 (0%)
E - Independent for all activities except bathing, dressing, going to the bathroom, and one additional.	0 (0%)	0 (0%)
F - Independent for all activities except bathing, dressing, going to the bathroom, transferring, and one additional.	0 (0%)	0 (0%)
G - Dependent for all activities.	0 (0%)	0 (0%)
Other - Dependent in at least two functions but not classified in C, D, E, and F.	0 (0%)	0 (0%)

Source: Authors, 2023. p-value 0.0197 – Wilcoxon test.

Table 4. Data from the Visual Analog Scale by day according to the Katz[24] classification. Seropédica, RJ, 2023.

	Katz A → A (n=21)		Katz B → A (n=6)		Katz B → B (n=4)	
	Before	After	Before	After	Before	After
	VAS day 1					
Median [quartiles]	5 [2 – 6] (n=21)	0 [0 – 3] (n=21)	5.5 [4.25 – 6.75] (n=6)	1.5 [0.25 – 2.75] (n=6)	7 [6 – 7.25] (n=4)	2.5 [2 – 3] (n=4)
	VAS day 2					
Median [quartiles]	3 [2 – 5] (n=21)	0 [0 – 4] (n=21)	1 [0 – 3.5] (n=6)	0 [0 – 0.75] (n=6)	3 [0 – 6.75] (n=4)	0 [0 – 1] (n=4)
	VAS day 3					
Median [quartiles]	3 [0 – 5] (n=21)	0 [0 – 2] (n=21)	0 [0 – 3.75] (n=6)	0 [0 – 0.75] (n=6)	3.5 [0 – 7.25] (n=4)	0 [0 – 0] (n=4)
	VAS day 4					
Median [quartis]	0 [0 – 4] (n=21)	0 [0 – 0] (n=21)	2.5 [0 – 6,5] (n=6)	0 [0 – 1.5] (n=6)	3 [0 – 6.5] (n=4)	0 [0 – 0.5] (n=4)

Source: Authors, 2023.

DISCUSSION

In the identification of the sociodemographic profile of the study participants, it was observed that the majority were women, with an average age of 68.32 years, and a diverse marital status. Most of them were engaged in regular physical exercise. However, all of them reported experiencing various levels of pain, ranging from mild to severe. The results were positive regarding the proposed treatment, as it led to a reduction in pain for all participants. Furthermore, more than half of those who had difficulties with certain aspects of functionality showed improvements.

The level of chronic pain was mostly concentrated at a moderate level. However, according to the assessment using the VAS, a significant portion of the aged women reported pain levels ≥ 7. These intense pains might be related to the concept in Traditional Chinese Medicine of pains associated with deficiency, as they tend to diminish or become more comfortable when touched or palpated.

The study by Ferretti et al.[30] discusses how the growing population of older adults brings about musculoskeletal problems that result in pain and limitations for this population. It highlights the importance of using acupuncture points that release energy stagnation.

The selected points through the meridians of large intestine 4 (LI4 - Hegu), liver 3 (LR3 - Taichong), pericardium 6 (PC6 - Neiguan), stomach 36 (ST36 - Zusanli), and spleen pancreas 6 (SP6 - Sanyinjiao) have the energetic function of releasing the flow of Qi and blood. Based on the work of Focks et al.[27] and Maciocia[26], by inserting needles into these points, any energy stagnation (pain) in the body dissipates, leading to pain reduction due to the improved circulation of bodily fluids.

Lam et al.[21] compared three groups experiencing pain, ranging from moderate to intense, due to side effects of cancer treatment. They used LR3 (Taichong) and LI4 (Hegu) in the first group. In the second group, they supplemented with three additional points: PC6 (Neiguan), ST36 (Zusanli), and BP6 (Sanyinjiao). The third group served as a control. When the results were compared, the second group showed a significant improvement in pain scores. This protocol from the second treatment group presented by Lam et al.[21], when applied to the group of 31 older adults in this study, proved to be effective in four sessions, as it reduced the aged women's pain to a mild degree, based on the VAS results.

The reduction in pain can be observed in Table 2, which presents the average pain level before the first session and after the last session. The results

showed that the pain, identified by the VAS, decreased from moderate and intense to mild; the overall group average decreased below 2 on the score. This demonstrates a gradual reduction in pain in the study group after undergoing four acupuncture sessions, each lasting 20 minutes, and a consequent decrease in the use of analgesics.

Furthermore, chronic degenerative diseases affect the older adults in their social interactions, lead to anxiety disorders, increase fear, depression, and the risk of falls due to impaired functionality. The use of acupuncture therapy, by reducing pain, can provide comprehensive benefits to the aged population, reducing all these factors or preventing them from occurring[1,2,5].

The correlation of VAS results with the Katz index classification shows the possibility of achieving greater advancements in improving functionality with longer acupuncture treatment. When observing Table 4, all participants reduced their pain levels, but not all of them improved their functionality. Therefore, it is believed that continued treatment through acupuncture could lead to better results in pain reduction and functionality improvement.

Of the four participants classified as B in the Katz index and who remained in the B category, as seen in the third column of Table 4, all of them reported a need for assistance with urinary incontinence (UI), a deficiency they reported in the Katz index. According to Maciocia[26], this is a result of the loss of muscle tone in the pelvic floor during the aging process.

Although the older adults participants in the study reported improvements in pain when performing movements or exertion, there is a need for strengthening the pelvic floor muscles in these four participants. Pelvic floor muscle can be stimulated through respiratory exercises, and body practices such as Tai Chi Chuan, Qi gong, and Yoga, which are used in the SUS, can bring improvements to these participants as they are based on breathing in their practices[31-32]. This would complement the acupuncture treatment.

This study has some limitations: 1) The sample consisted of only women who regularly engaged in physical exercises, which may introduce bias in the improvement results obtained since physical exercise releases endorphins and improves pain and functionality. 2) Men could not be tested in this sample, making it a heterogeneous sample, reducing the quality of the results presented here; 3) The number of sessions could have been greater, allowing for better observation of the effects produced by acupuncture, which may reduce the reliability of these results; 4) The choice of a quasi-experimental pre/post-study design did not allow for random assignment of control and test groups, making the sample vulnerable to external variable interference; 5) Older adults typically use medications, and in this sample, it was not possible to discontinue them, which may have interfered with the study's results in terms of pain and functionality-related effects.

This research emphasizes the need for additional prospective controlled studies on acupuncture in pain and its effects on improving the functionality of older adults. Consequently, a pragmatic trial design based on neuroanatomical and segmental principles that allow for individualized acupuncture protocols appears necessary to control external variables and prevent biases in estimating the acupuncture effect.

CONCLUSION

Systemic acupuncture plays an important role in pain management and has been used in the treatment of osteomuscular pain syndrome of different origins for thousands of years by Eastern medicine. These therapies can improve pain threshold by promoting the release of analgesic substances. Moreover, acupuncture has proven to be a low-cost and easily implementable tool.

In this study, the effects of acupuncture therapy on osteomuscular pain in older adults were investigated, as well as its effects on improving functionality in activities of daily living. According to the results presented, it can be inferred that the use of systemic acupuncture technique significantly produced better outcomes in pain scores and functionality for activities of daily living in the aged population in the investigated group. However, it cannot be concluded that acupuncture alone was solely responsible for reducing pain.

Despite important limitations in the development of this study, it is possible to infer that the treatment approach recommended with four treatment sessions, each lasting 20 minutes, demonstrated its effectiveness. However, a longer cycle of sessions is recommended as it may lead to better results.

The acupuncture technique implemented, known as systemic acupuncture, which is based on the energetic function of acupuncture points, proved to be efficient as it brought about a significant reduction in pain. This reduction suggests that the technique can improve the quality of life for older adults by enhancing functionality in basic activities of daily living. However, it is important to emphasize the need for regular physical exercise to maintain and improve overall health.

The results of these studies provide preliminary support for the use of acupuncture in pain relief and improving functionality in older adults. Controlled randomized studies with individualized protocols are necessary to establish the effectiveness and safety of this method.

AUTHORSHIP

- Fabio Ricardo Dutra Lamego – Conception, design, data analysis, and interpretation; responsible for all aspects of the work, ensuring accuracy and integrity throughout the entire study.

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