Case report

Evaluation of the effect of fascial manipulation in the treatment of female dyspareunia: series of cases

Avaliação do efeito da manipulação fascial no tratamento da dispareunia feminina: série de casos

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ABSTRACT | INTRODUCTION: Pelvic pain affects approximately 30% of sexually active women, and among them, around 50% report experiencing dyspareunia. The goal of treatment is to monitor the progression of pain symptoms of musculoskeletal and myofascial origin, aiming to improve the patients' quality of life. **OBJECTIVE:** The aim of this study is to describe the effects of fascial manipulation according to the Stecco Method, combined with perineal massage, on pain intensity, sexual function, psychological risk levels for stress, depression, and anxiety, as well as on pain characteristics and pelvic floor muscle strength. **METHOD:** The sample consisted of seven women participating in a postpartum recovery program, all diagnosed with dyspareunia and undergoing a three-month intervention. The assessment instruments used were the Numeric Pain Rating Scale (NPRS), the McGill Pain Questionnaire, the FSFI-19, the DASS-21 scale, and the Modified Oxford Scale. Participants were evaluated at three distinct time points: M0 (before the intervention – at the time of diagnosis), M1 (one month after the start of the intervention), and M2 (three months after the start of the intervention). A descriptive statistical analysis was conducted using the absolute and relative frequencies of the data collected. To verify the normality of the data, the Shapiro-Wilk test was used. RESULTS: The results reported reductions in pain between time points M0–M1 and M0–M2. In the McGill Pain Questionnaire, a gradual decrease in pain was observed from M0 to M2. In the FSFI-19, the "pain" item showed improvement between M0 and M1, while the "satisfaction" item showed a decrease between M0 and M2. The "total" score of the scale showed a slight increase over the three time points. In the DASS-21 scale, the most notable reduction was in the "stress" item, decreasing from 8.3 at M0 to 5.0 at M2. Finally, in the Modified Oxford Scale, 71.4% of the participants presented low-intensity contractions at M0. At M1 and M2, there was a predominance of more satisfactory contraction intensity, with 42.9% of participants reaching grades 3 and 28.6% grade 4 at M1, and 42.9% reaching grade 3 and another 42.9% grade 4 at M2. **CONCLUSION:** The combination of fascial manipulation and perineal massage applied in the treatment of dyspareunia resulted in a decrease in pain intensity and characteristics, reduced stress levels, increased pelvic floor muscle strength, and improvements in the "satisfaction" and "pain" items, as well as a reduction in the total scale score.

KEYWORDS: Sexual Dysfunction. Pain Measurement. Musculoskeletal Manipulations. Dyspareunia.

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RESUMO | INTRODUÇÃO: A dor pélvica atinge cerca de 30% das mulheres com vida sexual ativa e, destas, aproximadamente 50% relatam distúrbios de dispareunia. O tratamento tem como objetivo acompanhar a evolução dos sintomas dolorosos de origem musculoesquelética e miofascial, promovendo a melhoria da qualidade de vida das pacientes. **OBJETIVO:** o objetivo deste estudo é descrever os efeitos da manipulação fascial segundo o Método Stecco, associada à massagem perineal, na intensidade da dor, na função sexual, nos níveis de risco psicológico para *stress*, depressão e ansiedade, bem como nas características da dor e força muscular dos músculos do assoalho pélvico. **MÉTODO:** A amostra foi constituída por sete mulheres participantes do curso de recuperação pós-parto, com diagnóstico de dispareunia, submetidas a uma intervenção com duração de três meses. Os instrumentos de avaliação utilizados foram a escala visual numérica da dor (EVND), o questionário McGill de dor, o FSFI-19, a escala DASS-21 e a Escala de Oxford modificada. As participantes foram avaliadas em três momentos distintos: M0 (antes da intervenção – momento de diagnóstico), M1 (um mês após o início da intervenção) e M2 (três meses após o início da intervenção). Foi realizada uma análise estatística descritiva, utilizando as frequências relativa e absoluta dos dados coletados. Para a verificação da normalidade dos dados foi utilizado o teste de Shapiro-Wilk. **RESULTADOS:** Os resultados indicaram reduções na dor, com diminuições entre os momentos M0–M1 e M0–M2. No Questionário de Dor de McGill, observou-se uma redução gradual da dor entre M0 e M2. No FSFI-19, o item "dor" apresentou melhora entre M0 e M1, enquanto o item "satisfação" mostrou uma diminuição entre M0 e M2; já o escore “total” da escala apresentou um leve aumento ao longo dos três momentos. Na escala DASS-21, a redução foi mais evidente no item "*stress*", passando de 8.3 em M0 para 5.0 em M2. Por fim, na Escala de Oxford Modificada, 71.4% das participantes apresentaram contrações de baixa intensidade no momento M0. Já nos momentos M1 e M2, observou-se uma predominância de contrações de intensidade mais satisfatória, com 42.9% das participantes atingindo grau 3 e 28.6% grau 4 em M1, e 42.9% alcançando grau 3 e outros 42.9% grau 4 em M2. **CONCLUSÃO:** A combinação da manipulação fascial com a massagem perineal aplicada no tratamento da dispareunia resultou na diminuição na intensidade e nas características da dor, redução dos níveis de *stress*, aumento da força muscular do assoalho pélvico e melhora nos itens 'satisfação' e 'dor', além de uma redução no escore total da escala.

PALAVRAS-CHAVE: Disfunção Sexual. Intensidade da Dor. Terapia Manual. Dispareunia.

1. Introduction

The World Health Organization highlights sexual health as essential to overall quality of life, defining it as a state of physical, emotional, cultural, and social well-being in relation to sexuality. Sexual dysfunction (SD) is recognised as a significant public health concern due to its high prevalence and the considerable impact it exerts on quality of life and interpersonal relationships[1,2].

According to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)[3], SD is categorised into three groups, one of which is genito-pelvic pain/penetration disorder — a category that includes dyspareunia. Dyspareunia is characterised by pain experienced exclusively during sexual intercourse, which may occur during attempted or complete vaginal penetration. When the pain is localised at the entrance of the vagina or the vaginal introitus, it is classified as superficial dyspareunia — the most common and frequently most intense form — typically associated with musculoskeletal dysfunctions of the pelvic floor[4,5].

Studies suggest that between 10% and 20% of women of reproductive age may experience dyspareunia, with a particularly high prevalence during the postpartum period, especially following vaginal deliveries involving perineal trauma. Women who develop postpartum dyspareunia often report persistent discomfort lasting for one year or more[6].

Other intrinsically relevant factors associated with the development of SD include low levels of physical activity (PA), sedentary behaviour (SB), and poor sleep quality[7-9]. Previous studies[7,10] have shown that the incidence of SD among women with low levels of PA and SB can reach 78.9%. This spectrum of SD encompasses a range of issues such as reduced sexual desire and satisfaction, insufficient sexual arousal, lubrication difficulties, and dyspareunia.

Superficial dyspareunia not only compromises sexual function but can also have significant repercussions on mental and emotional health. This condition is often associated with a cycle of sexual avoidance, anxiety, depression, and chronic pelvic pain, which in turn can disrupt intimate relationships, adversely affecting family dynamics and women's overall well-being.

Several studies have highlighted the difficulties women face in obtaining adequate assessment and treatment for sexual health issues, with social stigma and embarrassment cited as major barriers[11-13]. The authors also note a lack of knowledge and health education among both women and healthcare professionals regarding available treatments. They conclude that practical solutions exist to overcome these barriers and to enhance communication between patients and healthcare providers.

Within the scope of advanced therapeutic approaches, fascial manipulation (FM) according to the Stecco Method represents a significant example of the integration of specialised techniques into health care for the treatment of specific conditions. This manual therapy technique focuses on the deep muscular fascia — a layer of connective tissue that surrounds muscles, bones, and organs — and conceptualises the myofascial system as a three-dimensional continuum. The fascia can become stiff and restrictive as a result of injury, inflammation, disease, or chronic pain conditions.

The Stecco Method aims to identify densified areas of fascia known as centres of coordination (CC) and centres of fusion (CF), which are considered the main contributors to musculoskeletal pain and dysfunction. Once identified, these points are treated using specific pressure techniques to elicit mechanical and chemical stimuli in the connective tissue — effects that have been well documented in the literature. Additionally, the local increase in temperature may affect the ground substance of the deep fascia, influencing Golgi corpuscles and collagen fibres. In this way, fascia elasticity and mobility are restored, thereby improving movement and reducing pain.

The continuous fascial network throughout the body allows for tension adaptation in regions distant from the treated area when CC and CF points are stimulated, promoting a global restoration of physiological tension balance. This approach is grounded in a detailed understanding of fascial anatomy and requires thorough examination to map fascial tension areas and dysfunctions[14,15].

A systematic review[16] included studies applying FM either in isolation or in combination with exercises and other physiotherapeutic modalities. Thirteen studies were analysed, totalling 349 participants (172 men and 177 women), investigating the efficacy of FM in various painful musculoskeletal conditions. Results indicated that FM, whether applied alone or in conjunction with other physiotherapy regimes, contributed to pain reduction and improved functionality.

In addition to FM, perineal massage (PM), which involves stretching and massaging the pelvic floor muscles and perineal tissue, has therapeutic applications for conditions such as superficial dyspareunia. PM, as demonstrated in some studies, may help to alleviate muscle tension, increase local blood circulation, promote tissue healing, and improve elasticity, thus offering benefits in reducing discomfort and pain during sexual activity[17-19].

The efficacy of both FM and PM as standalone techniques has already been widely demonstrated in clinical studies. However, to date, no studies have specifically investigated the use of fascial manipulation according to the Stecco Method in the treatment of dyspareunia.

The aim of this study was to report the effects of the combined application of FM and PM over five consecutive weeks in women with complaints of superficial dyspareunia. Specifically, the study sought to thoroughly assess pain intensity and characteristics during sexual activity, various domains of sexual function, pelvic floor muscle strength, and psychological factors, including levels of stress, anxiety, and depression. To the best of our knowledge, this pilot study represents the first investigation to describe the impact of this therapeutic combination on multiple dimensions of health-related quality of life.

2. Materials and methods

This study was reviewed and approved by the Ethics Committee and the Data Protection Officer of the *Unidade Local de Saúde do Alto Ave* – ULSAA (Alto Ave Local Health Unit) ensuring compliance with all necessary ethical and legal standards.

A case series study was conducted with a sample comprising seven women aged between 24 and 32 years, all diagnosed with superficial dyspareunia. The inclusion criteria were: a) adult women over the age of 18, presenting symptoms of penetration-related dyspareunia attributed to pelvic floor muscle spasms, with a history of pain during sexual intercourse lasting at least six months; b) sexually active; c) positive screening for sexual dysfunction using the short-form Female Sexual Function Index (FSFI-6).

The FSFI-6 is a validated, self-administered questionnaire that addresses the main domains of female sexual function, namely desire, arousal, lubrication, orgasm, satisfaction, and pain. Scores range from 2 to 30, with scores of 19 or below indicating the presence of sexual dysfunction.

Exclusion criteria included: I) diagnosis of endometriosis; II) deep dyspareunia; III) women in perimenopause or menopause; IV) pregnancy; V) untreated vaginal infection; VI) previous participation in pelvic physiotherapy; VII) absence from two consecutive intervention sessions; VIII) cognitive difficulties preventing comprehension of the questionnaires; IX) diagnosis of painful bladder syndrome; X) stage III or higher pelvic organ prolapse; XI) interstitial cystitis; XII) previous pelvic organ surgery.

The McGill Pain Questionnaire adapted into Portuguese was used for pain assessment[20], alongside the Numeric Pain Rating Scale (NPRS). The McGill Pain Questionnaire allows a maximum score of 78 points, with higher values indicating greater pain intensity and severity. The NPRS ranges from 0 to 10, with the following classifications: 0 – no pain; 1 to 3 – mild pain; 4 to 6 – moderate pain; 7 to 9 – severe pain; and 10 – worst imaginable pain.

Female sexual function was assessed using the full version of the FSFI-19, validated in Portuguese[21]. This self-administered questionnaire evaluates several domains of sexual function, with total scores ranging from 2 to 36. Higher scores indicate satisfactory sexual function, while scores below 26.55 suggest the presence of sexual dysfunction.

Psychological factors — specifically stress, anxiety, and depression — were measured using the Depression, Anxiety and Stress Scales (DASS-21), in the Portuguese version[22], his instrument includes 21 items, divided into three subscales (depression, anxiety, and stress), each with seven items. Scores range from 0 (absence of symptoms) to 21 (severe symptoms), with higher scores reflecting greater severity of negative affective states.

Pelvic floor muscle strength was evaluated using the Modified Oxford Scale, which rates muscular contractions on a scale from 0 to 5:

Grade 0 – no muscle contraction;

Grade 1 – flicker of contraction, not sustained;

Grade 2 – weak, sustained contraction perceptible to touch;

Grade 3 – moderate contraction, with increased pressure on the examiner's finger and slight cranial lift of the vaginal wall;

Grade 4 – good contraction, firm pressure with slight pull towards the pubic symphysis;

Grade 5 – strong contraction, vigorous pressure and clear movement towards the pubic symphysis.

The assessment was conducted through vaginal palpation using two fingers, with the participant instructed to contract her pelvic floor muscles. In addition, a clinical assessment form specific to the Stecco Method of Fascial Manipulation was used to record relevant clinical findings and guide therapeutic intervention.

Participants were recruited through a postpartum recovery course held at the lead author's workplace. Selection was based on a single-choice screening questionnaire specifically developed by the author. This instrument collected data on the duration and location of sexual pain, previous professional assessment of sexual health, and sexual function (using the FSFI-6). The FSFI-6, Portuguese version[23], was used exclusively for participant selection, as part of the screening questionnaire administered at the time of recruitment.

Before completing the screening questionnaire, participants were informed about the study's nature, purpose, and data handling protocols through an informed consent form. Only individuals who met the pre-established inclusion criteria were selected for the study.

Out of the 10 women enrolled in the postpartum recovery course, seven completed the questionnaire and were eligible. They were subsequently contacted and, upon agreeing to participate voluntarily, signed an informed consent form.

Next, participants underwent a specific evaluation confirming pelvic floor muscle tension via unidigital vaginal palpation. Afterwards, all assessment instruments were applied to collect baseline data.

The evaluation process was carried out by a qualified healthcare professional involved in the study's development, who had received specialised training to ensure strict adherence to the defined protocols. This professional was responsible for administering all assessment tools and ensuring the accuracy and reliability of the data collection process.

All participants were assessed at three time points:

- Moment 0 (M0): initial diagnostic assessment;
- Moment 1 (M1): one month after the first intervention;
- Moment 2 (M2): three months after the start of the intervention.

In addition, participants received visual materials and informational leaflets on sexual health, including pelvic-perineal anatomy, stages of the female sexual response cycle, and the importance of foreplay and lubrication. Practical instruction on diaphragmatic breathing and body alignment was also provided.

During the first individual session, the Stecco Method assessment form was used to identify pain points through a detailed history. This form was employed exclusively at baseline and not used in subsequent sessions.

All participants received five weekly sessions (45–60 minutes each) of FM focused on the lumbar, pelvic, and thigh segments. Treatment positions were adjusted according to the target muscle and covered sagittal, horizontal, and frontal planes of movement. The technique involved deep friction on specific dysfunctional CC and CF points, identified through clinical examination in line with FM guidelines[14]. The location of these points varied according to each case.

The therapist applied friction using the elbow at each specific point for 3 to 5 minutes. Between four and eight points were treated per session, following the anatomical guidelines detailed in the Stecco Method book[14].

Following FM, participants received weekly perineal massage (PM), employing a specific technique[24] involving massage along the muscle fibres for five minutes per side in the lithotomy position. The treatment lasted five weeks and was performed by the same experienced therapist for both techniques.

Data analysis was conducted using Microsoft Office Excel (version 2503, Microsoft Corporation, Redmond, WA, USA) and IBM SPSS (version 28, Chicago, IL, USA). Descriptive statistical analysis included presentation of absolute (n) and relative (%) frequencies for qualitative variables, as well as means (M), standard deviations (SD), and ranges for quantitative variables. The Shapiro–Wilk test was used to assess the normality of the sample data. No missing data were identified in the sample.

3. Results

The majority of participants were in a common-law marriage, had completed secondary education (71.4%), and were classified as overweight (57.1%). Additionally, 71.4% did not engage in regular physical activity, and 85.7% had only one child (Table 1). Regarding delivery type, vaginal deliveries with episiotomy were the most prevalent (42.9%).

Table 1. Distribution of sociodemographic, clinical, and physical activity characteristics of the study participants (n = 7)

Variables / Categories	n	%
Marital Status		
Married	3	42.9
Common-law marriage	4	57.1
Education Level		
Completed secondary education	5	71.4
Master's degree	2	28.6
BMI		
Overweight	4	57.1
Normal weight	3	42.9
Occupation		
Cleaner	1	14.3
Administrative assistant	1	14.3
Teaching assistant	1	14.3
Textile cutter	1	14.3
Unemployed	1	14.3
Nurse	1	14.3
Shop assistant	1	14.3
Physical Activity?		
No	5	71.4
Yes	2	28.6
• Type (if yes)		
Walking and cycling	1	14.3
Fitbox	1	14.3
• Frequency (if yes)		
3 times/week	1	14.3
5 times/week	1	14.3
Parity		
1 child	6	85.7
2 children	1	14.3
Type of Delivery		
Caesarean section	2	28.6
Vaginal with episiotomy	3	42.9
Vaginal with laceration	2	28.6

Source: the authors (2024).

Regarding pain intensity, measured by the Numeric Pain Rating Scale (NPRS), the average score was 5.1 at M0 and decreased to 1.3 at M1, indicating a significant reduction in pain. Between M0 and M2, pain reduction was more modest (Table 2).

Similarly, scores from the McGill Pain Questionnaire showed a progressive decrease in pain intensity across the three assessment points.

Sexual function, assessed using the FSFI-19, remained below the 26.55 cut-off score at all time points, indicating low sexual functionality. Although the "pain" domain showed improvement from M0 to M1, the "satisfaction" item declined, and the total FSFI score increased only slightly — results that continue to reflect an overall picture of sexual dysfunction.

As for psychological factors measured by the DASS-21, reductions were observed in stress, anxiety, and depression levels over time, with the most notable decline recorded in the stress dimension. Full variable details are presented in Table 2.

Table 2. Pain, sexual function, and psychological indicators across three observation points

Moments of Observation	**M0**				**M1**				**M2**			
Variable	**M**	**SD**	**Min**	**Max**	**M**	**SD**	**Min**	**Max**	**M**	**SD**	**Min**	**Max**
Age	29.3	2.7	24	32	---	---	---	---	---	---	---	---
Weight	68.4	11.4	53.0	80.0	---	---	---	---	---	---	---	---
Height	1.7	0.5	1.6	1.7	---	---	---	---	---	---	---	---
BMI	24.7	4.1	19.9	30.0	---	---	---	---	---	---	---	---
NPRS	5.1	0.7	4	6	1.3	0.1	0	3	2.0	1.6	0	5
McGill	38.0	4.9	28	43	10.1	14.3	0	42	6.7	5.4	1	13
+ FSFI												
Desire	2.6	0.8	1.2	3.6	3.1	0.9	1.2	3.6	2.9	0.9	1.2	3.6
Arousal	3.6	1.0	2.4	5.1	3.8	1.8	0.0	5.1	3.9	1.9	0.0	5.4
Lubrification	3.5	0.6	3.0	4.8	3.7	2.0	0.0	6.0	4.2	1.9	0.0	6.0
Orgasm	3.2	1.8	1.2	5.2	4.0	2.1	1.2	6.0	4.9	1.4	2.0	6.0
Satisfaction	3.5	1.4	1.2	5.2	4.3	1.2	0.0	5.6	4.3	2.2	0.0	6.0
Pain	2.3	0.7	1.6	3.6	3.8	2.1	0.0	6.0	3.7	2.1	0.0	6.0
FSFI (total)	18.9 [(1)]	3.2	13.8	22.8	22.8 [(2)]	7.5	7.6	29.1	24.1 [(3)]	8.2	7.6	31.7
+ DASS-21												
Stress	8.3	4.7	3	16	6.1	3.2	2	12	5.0	5.3	1	14
Anxiety	4.1	5.2	0	14	1.7	2.3	0	8	2.5	3.5	0	10
Depression	3.4	3.8	0	11	3.0	2.9	0	9	3.4	4.2	0	10

Source: the authors (2024).
Abbreviations: SD – Standard Deviation; M – Mean; BMI – Body Mass Index; NPRS – Numeric Pain Rating Scale; McGill – McGill Pain Questionnaire; DASS-21 – Depression, Anxiety and Stress Scale.
[(1)] All participants scored below 26.55.
[(2)] Three participants scored below 26.55.
[(3)] Three participants scored below 26.55.

Regarding the qualitative characterisation of pain, at M0 most participants classified their pain as "uncomfortable". In later assessments (M1 and M2), "mild" pain predominated, suggesting a progressive — albeit modest — improvement in pain (Table 3).

Table 3. Pain intensity classification across the three assessment moments

Moments of Observation	M0		M1		M2	
	N	%	N	%	N	%
No pain	---	---	1	14.3	1	14.3
Mild	1	14.3	5	71.4	5	71.4
Uncomfortable	6	85.7	1	14.3	1	14.3

Source: the authors (2024).

Regarding psychological aspects, the majority of participants fell within the "normal/mild" category at all time points, with no participant reaching the "very severe" level in any DASS-21 subscale (Table 4).

Table 4. Psychological evaluation across the three assessment points

DASS-21	Stress			Anxiety			Depression		
	M0	M1	M2	M0	M1	M2	M0	M1	M2
Normal/Mild	85.7	85.7	85.7	57.1	57.1	57.1	85.7	85.7	85.7
Minimum	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3
Moderate	---	---	---	28.6	14.3	14.3	---	---	---
Severe	---	---	---	---	14.3	14.3	---	---	---

Source: the authors (2024).
DASS-21 – Depression, Anxiety and Stress Scale.

Pelvic floor muscle strength, measured using the Modified Oxford Scale, showed that most participants initially scored grade 2 at M0 (71.4%), grade 3 at M1 and transitioning to grades 3 and 4 by M2. These results, summarised in Table 5, indicate an evolution from weak to satisfactory contraction strength over the intervention period.

Table 5. Pelvic floor muscle strength across the three assessment points

Moments of Observation	M0		M1		M2	
Grade	N	%	N	%	N	%
Grade 0	---	---	---	---	---	---
Grade 1	---	---	---	---	---	---
Grade 2	5	71.4	2	28.6	1	14.3
Grade 3	1	14.3	3	42.9	3	42.9
Grade 4	1	14.3	2	28.6	3	42.9
Grade 5	---	---	---	---	---	---

Source: the authors (2024).
Grade 0 – no contraction; Grade 1 – flicker only; Grade 2 – weak contraction; Grade 3 – moderate contraction; Grade 4 – good contraction; Grade 5 – strong contraction.

4. Discussion

The effects of fascial manipulation (FM) combined with perineal massage (PM) yielded positive outcomes across the variables examined. A decrease in average pain levels was observed between M0 and M1, although this reduction was not sustained between M0 and M2. Pain characteristics also improved between M0 and M1 and from M0 to M2. The most pronounced reduction was noted in stress levels between M0 and M2. Regarding the FSFI-19, the domains showing the greatest improvement were "satisfaction" and the “total” score for sexual function.

A recent systematic review[25] analysed various physiotherapeutic approaches to female dyspareunia, including education, use of dilators, electrostimulation, and myofascial release. Although all techniques proved effective in reducing pain, no consensus has yet been reached regarding the most effective method or ideal treatment parameters. These findings, as well as those from other studies[17,26], align with the present results in supporting manual therapy as a promising intervention for alleviating dyspareunia-related pain and enhancing quality of life.

Studies employing multimodal physiotherapeutic approaches — combining clinical interventions with patient education — reported better outcomes in pain reduction, dyspareunia relief, and improvements in sexual function and quality of life[25-27]. Manual therapy was a component in all these studies and was associated with pain relief. Its effectiveness appeared more pronounced when interventions also included health literacy measures. In this regard, the educational component of the present study, supported by visual aids and pamphlets, is consistent with recommendations in the literature and reinforces the role of knowledge as part of the therapeutic process.

A recent literature review (2013–2023) demonstrated positive responses to pelvic floor muscle training and perineal massage in the treatment of dyspareunia. However, the current evidence base is insufficient to confirm their clinical efficacy[18]. Although this study did not include a specific training programme for pelvic floor muscle function, a modest improvement was observed, with most participants progressing from weak muscle contraction at M0 to satisfactory levels at M1 and M2.

Our findings corroborate previous studies reporting pain reduction in patients with dyspareunia[17,19], attributed to the physiological effects of the interventions. Furthermore, the literature highlights the relevance of myofascial release and thorough musculoskeletal evaluation as fundamental strategies in the management of dyspareunia[28,29]. Techniques such as PM and muscle stretching have been shown to relieve pain by stimulating neurotransmitter release and increasing local blood flow[30].

The application of the Stecco Method reinforces this perspective by acknowledging the complexity of fascial structures involved in musculoskeletal pain[28,29,31]. Studies show that fascial densification may compromise neuromuscular function within the pelvic septum and its connections to the fascia of the lower limbs and trunk, negatively affecting pelvic floor performance[32]. In this context, data from the present study suggest that fascial manipulation contributed to early-stage pain reduction in dyspareunia treatment. This effect may result from the deep friction technique, which generates tissue warming, improves gliding between layers, reduces fascial stiffness, and relieves muscle tension, thereby promoting functional improvement[33].

Our results support the theoretical framework of the Stecco Method's myofascial continuity, particularly regarding the lumbar, pelvic, and thigh segments. This highlights the importance of individualised assessment and the identification of multiple treatment points[14,34]. Clinical trials have shown that fascial manipulation, by addressing tissues integratively rather than focussing solely on the painful area, can improve pain, mobility, and muscle strength[34,35]. It may therefore serve as an effective adjunct to other physiotherapeutic strategies, amplifying therapeutic outcomes in the management of dyspareunia[25-27].

Pelvic floor hyperactivity is also linked to psychosocial factors such as stress, trauma, and emotional disorders, which may lead to trigger points and dyspareunia[27]. In our study, stress levels decreased and a tendency towards improvement in anxiety and depression was obese between M0 and M2, even in the absence of psychological intervention. The literature supports the effectiveness of physiotherapy and relaxation techniques in modulating the sympathetic nervous system and reducing muscle tension and stress[36,37].

However, external factors such as maternal overload and sleep deprivation may have contributed to the persistence of pain symptoms.

Only the subdomains "satisfaction" and the FSFI-19 "total" score exhibited slight increases. Given that sexual dysfunction tends to worsen over time, negatively impacting sexual function[27], it is possible that this trend influenced the results, which did not show significant improvements in this domain. Moreover, the absence of psychological support and participants' difficulty in recognising subjective changes may have limited the perceived effects.

The literature emphasises the importance of a multidisciplinary and multimodal approach in the treatment of dyspareunia, combining physiotherapy, psychotherapy, physical exercise, and mindfulness to address both physical and emotional factors[4,36]. Including these elements in the present study could have enhanced the observed outcomes. Prior research[11,37,38], as shown that multimodal programmes involving therapeutic exercise improve pain, catastrophising, dyspareunia, and quality of life in women with endometriosis.

Our study demonstrated a reduction in pain and muscle tension between M0 and M1, with no further improvement thereafter. Despite the absence of a control group, these results are consistent with existing literature[35] and suggest the potential effectiveness of fascial manipulation as part of an integrated treatment strategy. Although there is still a lack of research specifically addressing the use of the Stecco Method in the treatment of superficial dyspareunia and its combination with PM, both approaches show initial promise. Nonetheless, further studies with greater methodological rigour are needed to confirm their clinical efficacy[17,18].

The main limitations of this study include the small sample size and the absence of a control group, which restrict the generalisability of the findings. Nonetheless, the educational component of the intervention appears to have exerted a positive influence on outcomes — particularly pain reduction — by fostering greater understanding of the dysfunction and encouraging participants' active engagement in the therapeutic process.

For future research on dyspareunia, an interdisciplinary approach is recommended, as well as the inclusion of qualitative analyses to deepen the understanding of affected women lived experiences. Despite its limitations, this study offers relevant contributions and points towards promising avenues for future investigations with larger and more rigorously designed samples.

5. Conclusion

The combined application of fascial manipulation and perineal massage in the management of dyspareunia produced positive outcomes, including reductions in pain intensity and stress levels, improvements in pelvic floor muscle contraction strength, and advances in the "satisfaction" and "total" scores of sexual functions. It is important to highlight that psychological factors exert a significant influence on the perception of chronic pain, underscoring the necessity of an interdisciplinary approach in the treatment of dyspareunia — one that integrates physical interventions with psychological support.

Future studies are recommended with more representative samples, greater methodological rigour, and the inclusion of a control group, in order to deepen the analysis of observed effects and strengthen the scientific evidence base in this field.

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Authors' contributions

The authors declare having made substantial contributions to the work in terms of the study's conception or design, acquisition, analysis or interpretation of data, and drafting or critical revision of relevant intellectual content. All authors approved the final version for publication and agreed to be accountable for all aspects of the work.

Competing interests

No financial, legal, or political conflicts of interest involving third parties (e.g., government, companies, private foundations) were declared in relation to any aspect of the submitted work (including but not limited to grants and funding, advisory board participation, study design, manuscript preparation, statistical analysis, etc.).

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