

# Perineal Massage Improves the Dyspareunia Caused by Tenderness of the Pelvic Floor Muscles

## *Massagem perineal melhora a dispareunia causada por tensão dos músculos do assoalho pélvico*

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### Abstract

**Aim** To evaluate the long-term effectiveness of perineal Thiele massage in the treatment of women with dyspareunia caused by tenderness of the pelvic floor muscles.

**Methods** A total of 18 women with diagnoses of dyspareunia caused by tenderness of the pelvic floor muscles were included in the study. The women were divided in two groups: the dyspareunia (D) group – 8 women with dyspareunia caused by tenderness of the pelvic floor muscles; and the chronic pelvic pain group (CPP) group – 10 women with dyspareunia caused by tenderness of the pelvic floor muscles associated with CPP. Each patient filled out the Visual Analogue Scale (VAS), the McGill Pain Index, the Female Sexual Function Index (FSFI) and the Hospital Anxiety and Depression Scale (HADS). After an evaluation, the women underwent transvaginal massage using the Thiele technique over a period of 5 minutes, once a week for 4 weeks.

**Results** All women had significant improvements in their dyspareunia according the VAS and the McGill Pain Index ( $p < 0,001$ ), but the HADS scores did not show significant differences. Regarding sexual function, the D group showed improvements on all aspects of sexual function, while the CPP group showed differences only in the pain domain.

**Conclusion** Thiele massage is effective in the treatment of dyspareunia caused by tenderness of the pelvic floor muscles with a long-term pain relief.

### Keywords

- ▶ dyspareunia
- ▶ physical therapy
- ▶ pelvic pain
- ▶ pelvic floor
- ▶ women's health

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## Resumo

**Objetivo** Avaliar a eficácia em longo prazo da massagem perineal de Thiele no tratamento de mulheres com dispareunia provocada pela tensão dos músculos do assoalho pélvico.

**Métodos** Foram incluídos no estudo dezoito mulheres com diagnóstico de dispareunia provocada pela tensão dos músculos do assoalho pélvico. As mulheres foram divididas em dois grupos: o grupo dispareunia (D) – 8 mulheres com dispareunia causada pela tensão dos músculos do assoalho pélvico; e o grupo de dor pélvica crônica (DPC): 10 mulheres com dispareunia causada pela tensão dos músculos do assoalho pélvico associados à DPC. Cada paciente preencheu Escala Visual Analógica (EVA), Índice de Dor de McGill, Índice de Função Sexual Feminino (IFSF) e Escala Hospitalar de Ansiedade e Depressão (EHAD). Após a avaliação, as mulheres foram submetidas a massagem transvaginal utilizando a técnica de Thiele ao longo de um período de 5 minutos, 1 vez por semana durante 4 semanas.

**Resultados** Todas as mulheres tiveram melhora significativa da dispareunia de acordo com a EVA e o Índice de Dor de McGill ( $p < 0,001$ ), mas na pontuação do EHAD não mostraram diferenças significativas. Em relação à função sexual, o grupo D apresentou melhora de todos os aspectos da função sexual, enquanto o grupo DPC mostrou diferenças apenas no domínio dor.

**Conclusão** A massagem perineal de Thiele é eficaz no tratamento da dispareunia causada pela tensão dos músculos do assoalho pélvico, com alívio da dor a longo prazo.

### Palavras chaves

- ▶ dispareunia
- ▶ fisioterapia
- ▶ dor pélvica
- ▶ assoalho pélvico
- ▶ saúde da mulher

## Introduction

Dyspareunia is an important sexual dysfunction commonly encountered in the clinical practice that causes a negative impact in the quality of life of women.<sup>1</sup> Dyspareunia is usually associated with multifactorial conditions (organic, behavioral, or psychological factors) that make the diagnosis and early treatment difficult.<sup>2</sup> Most women regard dyspareunia as an ordinary symptom, very often not reporting pain during gynecological consultations,<sup>3</sup> and that over the time can aggravate the symptom and favor the emergence of chronic diseases. One of them is chronic pelvic pain (CPP), which is defined as continuous or recurrent pain in the lower abdomen or pelvis lasting at least 6 months and sufficiently intense to interfere in daily life activities.<sup>4,5</sup> Among women with CPP, dyspareunia is one of most common complaints. In a retrospective study evaluating the medical records of 955 women with CPP, it was observed that 64% of women had symptoms characteristic of dyspareunia and, among these, in 22% of cases they were potentially caused by tenderness of the pelvic floor muscles, mainly in the levator ani muscle.<sup>6</sup> Tenderness of the levator ani muscle is one of the most common causes of dyspareunia.

Despite its high prevalence, to this date there are few studies addressing the evaluation<sup>7</sup> and treatment of dyspareunia<sup>8</sup> caused by tenderness of the pelvic floor muscles in the literature. Recently, a research group developed a study proposing the use of Thiele massage in the treatment of women with CPP caused by tenderness of the pelvic floor muscles. The results were promising, with great relief of pain during the treatment and after a month of follow-up.<sup>9</sup>

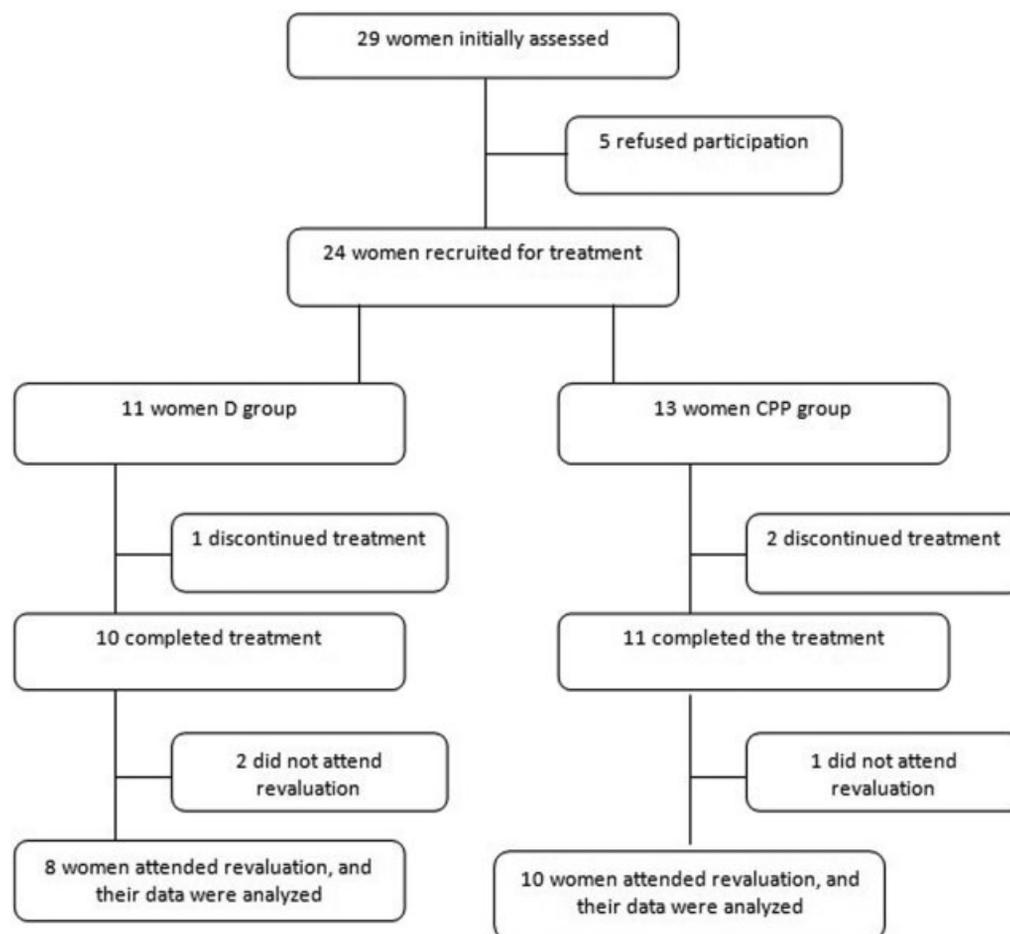
Therefore, the objective of this study is to evaluate the long-term effectiveness of Thiele massage in the treatment of women with dyspareunia caused by tenderness of the pelvic floor muscles associated or not with CPP.

## Methods

An open, parallel, nonrandomized clinical assay was performed with women who consecutively attended at a university hospital. The study was approved by the Research Ethics Committee, and all participants gave written informed consent. A total of 29 women were initially recruited, and 18 of them completed the entire protocol (► Fig. 1). Women in reproductive age, sexually active, with diagnosis of dyspareunia caused by tenderness of the pelvic floor muscles associated or not with CPP were included in study. Subjects with cognitive disorders, diabetes mellitus, neuropathy, vasculopathy, genital prolapses and who were using antidepressants were excluded.

Before the clinical examination, each patient filled out a detailed form containing information about the characteristics of the pain and their personal history, and completed the Visual Analogue Scale (VAS),<sup>10</sup> McGill Pain Index,<sup>11</sup> Female Sexual Function Index (FSFI)<sup>12,13</sup> and Hospital Anxiety and Depression Scale (HADS).<sup>14</sup>

The physical examination consisted of a general evaluation, an investigation of the trigger points, an inspection of the external genitalia, a traditional bimanual pelvic examination and a unidigital vaginal palpation. The unidigital palpation was performed to identify the tenderness of the muscles. All women included in the study always received



**Fig. 1** Patient enrollment flowchart.

clinical care from the same professionals, who were blinded to all study data. The subjects were divided into two groups: the dyspareunia (D) group, which was composed of 8 women with a mean age of  $31.3 \pm 6.4$  years with isolated dyspareunia, that is, women with dyspareunia caused exclusively by tenderness of the pelvic floor muscles; and the CPP group, which was composed of 10 women with a mean age of  $35.0 \pm 6.2$  years with dyspareunia caused by tenderness of the pelvic floor muscles associated with CPP.

After the evaluation, the women underwent a transvaginal massage using the Thiele technique, which consists of a massage from the origin to the insertion of the muscle with an amount of pressure tolerable by the patients, over a period of 5 minutes.<sup>15</sup> Thiele massage was repeated once a week for 4 weeks. During this period, the patients were informed about the characteristics of the pelvic floor, and advised not to have intercourse. All women were re-evaluated after 1, 4, 12 and 24 weeks.

### Statistical Analysis

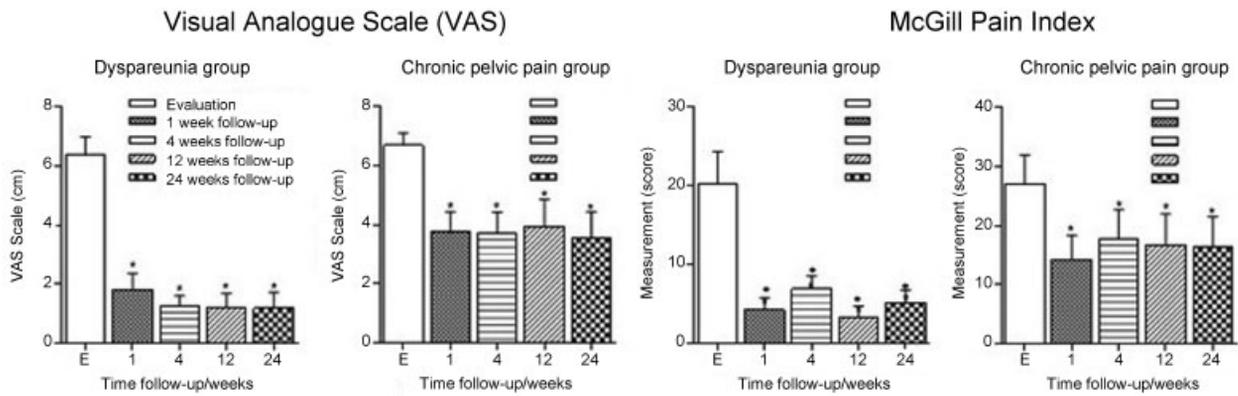
Considering that the standard deviation obtained using the VAS in the women with CPP was 20 mm, and considering  $p < 0.05$  as the level of statistical significance, 10 partici-

pants from each group would be required to obtain an 80% power of the test and to identify a difference of 30 mm in the pain VAS, which is considered the minimum relevant clinical change for pain, using the JMP software (SAS Campus Drive, building T, Cary, NC, USA) for the calculation.

The continuous variables were expressed as mean and standard deviation values, and the statistical analysis was conducted using the GraphPad Prism 5.0 software (GraphPad Software, University of California San Diego, San Diego, CA, USA). The presence of normal distribution was determined using the Kolmogorov-Smirnov test. Multiple variables were analyzed using the ANOVA test, with the Bonferroni post test. We considered a significance level of 5%.

### Results

At the end of 4 weeks of treatment, all groups showed a significant improvement of the dyspareunia, describing no pain or little discomfort during intercourse. The VAS and McGill pain index scores showed significant improvement during all periods of follow-up (► Fig. 2). The HADS scores did not show significant differences throughout the periods of follow-up (data not shown). Regarding sexual function, in the D group we observed improvements of all aspects of



**Fig. 2** Assessment of pain in all groups during the study's follow-up periods. Multiple variables were analyzed using the ANOVA test, with the Bonferroni post hoc test. We considered a significance level of 5%.

**Table 1** Sexual function scores of the dyspareunia group during the study's follow-up periods

FSFI	Evaluation	1 week	4 weeks	12 weeks	24 weeks	p
TOTAL	18.8 (5.9)	27.5 (3.2)*	28.9 (3.6)*	28.4 (3.7)*	26.0 (4.3)*	< 0.0001
Desire	2.6 (1.0)	4.1 (0.7)*	3.9 (1.1)*	4.1 (0.9)*	3.9 (1.1)*	0.0003
Arousal	3.0 (1.4)	4.4 (0.7)*	4.2 (1.1)*	4.1 (0.8)	3.8 (0.8)	0.005
Lubrication	3.1 (1.2)	4.3 (1.1)*	4.9 (0.9)*	4.6 (1.0)*	4.4 (1.0)*	0.0003
Orgasm	3.5 (1.4)	4.4 (1.3)	4.9 (1.0)*	4.8 (0.6)*	4.4 (0.9)	0.007
Satisfaction	4.2 (1.5)	5.2 (0.5)	5.5 (0.4)*	5.6 (0.5)*	4.9 (1.0)	0.005
Pain	2.2 (1.2)	4.8 (1.1)*	5.2 (0.6)*	4.9 (0.7)*	4.5 (1.2)*	< 0.0001

Abbreviation: FSFI, Female Sexual Function Index.

Data in means (standard deviation) (n = 8). \*p < 0.001; Evaluation: first evaluation before treatments; 1 week: one week of follow-up after treatment; 4 weeks: four weeks of follow-up after treatment; 12 weeks: twelve weeks of follow-up after treatment; 24 weeks: twenty-four weeks of follow-up after treatment.

**Table 2** Sexual function scores of chronic pelvic pain group during the study's follow-up periods

FSFI	Evaluation	1 week	4 weeks	12 weeks	24 weeks	p
TOTAL	17.6 (5.9)	22.8 (5.7)	22.7 (5.3)	21.2 (5.3)	22.1 (5.9)	0.058
Desire	2.9 (1.3)	3.3 (1.1)	3.4 (0.8)	2.8 (0.8)	3.6 (1.2)	0.18
Arousal	3.0 (1.4)	3.5 (0.8)	3.4 (1.1)	3.3 (1.2)	3.5 (0.9)	0.39
Lubrication	3.1 (1.2)	4.3 (0.8)	4.2 (1.1)	3.9 (1.2)	4.0 (1.3)	0.07
Orgasm	2.8 (1.6)	3.7 (1.1)	4.1 (1.2)*	3.7 (1.0)	3.7 (1.1)	0.06
Satisfaction	3.8 (1.4)	4.3 (0.8)	4.1 (0.8)	3.9 (1.5)	4.2 (1.5)	0.77
Pain	1.8 (0.4)	3.5 (1.5)*	3.5 (1.2)*	3.5 (1.1)*	3.0 (0.8)*	0.003

Abbreviation: FSFI, Female Sexual Function Index.

Data in means (standard deviation) (n = 10). \*p < 0.05; Evaluation: first evaluation before treatments; 1 week: one week of follow-up after treatment; 4 weeks: four weeks of follow-up after treatment; 12 weeks: twelve weeks of follow-up after treatment; 24 weeks: twenty-four weeks of follow-up after treatment.

sexual function (► **Table 1**). The CPP group only had a significant improvement in the pain domain, with no improvement of general sexual function (► **Table 2**).

### Discussion

According to our results, Thiele Massage is an effective approach in the treatment of dyspareunia caused by tenderness of the pelvic floor muscles, with a long-term pain relief.

In both groups, at first evaluation, the pain scores were high enough to interrupt intercourse. After treatment and during follow-up, these scores decreased significantly, mainly in the D group. The same could be observed about the FSFI scores. A low FSFI score is a potential risk for the development of serious sexual dysfunctions and compromising of sexual response cycle.<sup>16,17</sup> The improvement of these scores clearly reflects an important increase in the sexual satisfaction and in the quality of life of women.

Despite the fact that the CPP group had important improvements in the pain and sexual aspects, those changes were not as significant as in the D group. This can be explained by the multifactorial aspects of the physiopathology of CPP.<sup>18,19</sup>

Sexual function is highly complex, depending on biological, psychological and sociocultural factors, as well as interpersonal experiences. Therefore, more studies are necessary to assess the sexual needs of women with CPP. In order to be effective in this population, therapeutic interventions should take into account all the experiences of women.<sup>20,21</sup>

During the study, data regarding the frequency of intercourse before and after the treatment, as well as information about changes in the quality of the sexual relationship of the women were not collected. These data would be important, once repeated pain episodes during intercourse may generate anguish, anxiety and interpersonal issues, leading women to anticipate a previous negative experience and avoid sex.<sup>22</sup> In addition, women who know their own bodies and better understand their sexuality tend to develop higher quality relationships.

Finally, our study showed for the first time that Thiele massage is a successful long-term therapy for dyspareunia caused by tenderness of the pelvic floor muscles.

## Conclusion

Thiele massage is an effective long-term method for the treatment of dyspareunia caused by tenderness of the pelvic floor muscles. It is a simple technique, easy to learn, and women or their partners could perform it without risk. Therefore, Thiele massage may be accessible even to the women who cannot afford to attend a regular physical therapy rehabilitation program. Thus, the welfare of women could be long lasting, with the improvement of their sexual satisfaction and, consequently, their quality of life.

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