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EFFICACY OF PHYSICAL THERAPY IN DYSPAREUNIA AND QUALITY OF LIFE OF WOMEN WITH ENDOMETRIOSIS: CASE SERIES

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ABSTRACT

Introduction: Endometriosis is a chronic disease that affects about 5% to 15% of women in Brazil during the reproductive period; The etiology of the disease has no concrete evidence, but studies indicate that immunological, hormonal, and genetic factors are associated. Dyspareunia is one of the symptoms, being a painful sexual dysfunction, being present before, during or after intercourse. Objective: To analyze the efficacy of physical therapy and its impact on the symptomatology of dyspareunia and quality of life in women with endometriosis. Methods: This is a case series study with a quantitative approach. The study was carried out in a Physical Therapy Clinic, and included women aged eighteen years or older, diagnosed with endometriosis, complaining of dyspareunia and active sexual life. The data were divided into three stages, as follows: evaluation, intervention and reevaluation; the tools used were an evaluation form, three questionnaires, namely the Short Form Health Survey 36-item (SF-36), Female Sexual Function Index (FSFI), Sexual Quotient – Female Version (QS-F), physiotherapeutic protocol composed of 10 sessions, twice a week lasting 60 minutes each, including physiotherapeutic exercises, manual therapy and pelvic instruments. Results: The study interviewed six women, but the sample consisted of two participants, who had endometriosis and dyspareunia. After performing the physical therapy exercise protocol, it was possible to observe a global discrepancy in all the questionnaires applied. In case 01, a score of (42.8) in the evaluation and (50.4) in the reevaluation; in case 02, the evaluation score (62.1) to (72.4) in the reassessment in the domains of the quality of life questionnaire (SF-36), while in the sexual function questionnaire (FSFI) case

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01 had (3.8) in the evaluation and (27.5) in the reevaluation; and case 02 obtained (30.9) in the evaluation and (33.4) in the reevaluation, finally in the sexual activity questionnaire (QS-F) case 01 presented (44) points in the evaluation and (68) in the reevaluation; Case 02 obtained (82) points in the evaluation and (90) in the reevaluation. Conclusion: In the present study, the two women with endometriosis and symptoms of dyspareunia, with the presence of pain during sexual intercourse, reported a significant improvement in the symptoms mentioned above, and we can conclude that physical therapy improved dyspareunia and the quality of life of these women.

Keywords: Dyspareunia. Endometriosis. Physiotherapy.

INTRODUCTION

Endometriosis is a chronic disease that affects about 5% to 15% of women in Brazil during the reproductive period. "It is characterized by functional tissue, similar to the endometrium, present from outside the uterine cavity, more frequent in the pelvic peritoneum, ovaries and vaginal rectum septum".[1]

Due to the increase in cases of women with endometriosis, especially with the presence of symptoms that are related to psychological and physical factors, it has significantly affected the quality of life of these women; thus, it is extremely important that studies are carried out that prove solutions to reduce these symptoms, especially those related to sexual intercourse.[2]

The etiology of the disease still has no concrete evidence, but it indicates that immunological, hormonal, and genetic factors may contribute to its formation and development. According to Sampson's theory made in 1927, the endometrial tissue that should pass through the fallopian tubes during the menstrual period, ends up taking the opposite path by implanting, growing and developing in the peritoneum and ovary.[3]

The most used classification for staging endometriosis is that of the *American Society of Reproductive Medicine* performed in 1996, which grades the disease as minimal, mild, moderate or severe due to the extension of the disease in the peritoneum and ovaries.[4; 1]

The symptoms and signs of endometriosis can vary according to each woman, and they can be asymptomatic or symptomatic, referring to dysmenorrhea, menorrhagia, dyspareunia (deep), chronic pelvic pain (CPD), ovulatory pain, pain that radiates to the thighs, urinary dysfunctions, intestinal dysfunctions, pelvic adhesions, pelvic mass, fatigue, depression, irritability, sleep disorder, and infertility.[5]

In order to find a definitive diagnosis for endometriosis, it is necessary to perform a laparoscopy; and if you find any atypical changes, the tissue is collected for a biopsy. As it is a complex disease, other tests can facilitate the evaluation, such as; transvaginal ultrasound; magnetic resonance imaging, and physical examination, in order to contribute to the prognosis. [6]; [1]

Human sexuality is an important indicator of quality of life (QoL), according to the World Health Organization (WHO). Endometriosis carriers have a certain frequency of impact of dyspareunia in life and relationships, according to the Brazilian Association of Endometriosis and Minimally Invasive Gynecology (SBE) approximately 30% of women with endometriosis will report pain during sexual intercourse. Dyspareunia is a painful sexual

dysfunction, being present before, during or after intercourse, causing sexual discouragement.[6]

Physical therapy intervention can be an ally in reducing the symptoms of dyspareunia, where it acts in a non-invasive or invasive way; and seeks to control pain through neuromuscular techniques, since it is a low-cost treatment in relation to the pharmacological industry, and which presents positive results.[7] This study aims to analyze the efficacy of physical therapy and its impact on the symptoms of dyspareunia and on the quality of life of women with endometriosis. Thus, regardless of the result of the article, the research seeks to contribute with other professionals the relevant information for the elaboration of specific physiotherapeutic protocols that aim to improve the symptoms of these patients with endometriosis.

METHODOLOGY

The research is a case series study, which has the characteristics of intervening and describing new treatments in a group of individuals who present endometriosis with evidence of dyspareunia, presenting a quantitative approach.[8] The study incorporates the research project called "Efficacy of physiotherapy in dyspareunia and quality of life of women with endometriosis", linked to the Research Group on Pelvic Floor Dysfunctions (GPEDAP).

The sample is characterized as non-probabilistic, convenient and intentional, the women were selected through social media dissemination, and the inclusion criteria were women diagnosed with endometriosis aged 18 years or older, who have dyspareunia, who have not undergone pelvic physiotherapy in the last six months, with an active sexual life, and who agreed to participate in the study. The following were excluded from the study: pelvic pathologies (urinary tract infection, gynecological cancers), those with heart disease, women who use antidepressants, pregnant women, postmenopausal women, those who underwent childbirth with episiotomy, the presence of difficulty in interpreting the questionnaires, and consequently difficulty in carrying out the evaluation and/or intervention.

The collection was carried out in person, in the city of Londrina, Paraná. With the use of questionnaires referring to quality of life, and evaluation of the various domains of women's sexual activity. Also applying a physiotherapeutic intervention protocol.

The following evaluation instruments were used:

1. Evaluation sheet

The evaluation form includes identification containing personal data, such as name, date of birth, age, chronic diseases, use of medications, surgical history, as well as questions about personal habits such as smoking, alcoholism and physical activity. It also consisted of the physical examination, in which data on height, weight and a gynecological evaluation were collected from an inspection and palpation of the vaginal canal (color, secretion, sensitivity to touch, hypertonia of the muscles, presence of pain, scars, lubrication and good perception of the female genital organ).

2. Quality of Life Questionnaire (SF-36)

   Quality of life was analyzed using the Quality of Life questionnaire (SF-36) which was developed by Ware and Sherbourne in 1992 and validated in Brazil by Ciconelli et al9 (1999), it evaluates eight domains, namely: functional capacity, physical aspects, pain, general health status, vitality, social aspects, emotional aspects and mental health, the results for the functional capacity domain are 55, On a scale ranging from 0 to 100, where zero is the worst state and one hundred is the best, to arrive at the result, a formula was applied containing the value obtained in the corresponding questions minus the lower limit multiplied by 100 and all this result divided by the variation.[10]

3. Questionnaires regarding sexual activity (*Female Sexual Function Index* (FSFI) and Sexual Quotient – Female Version (QS-F)

   Sexual activity was evaluated through two questionnaires, the *Female Sexual Function Index* (FSFI) questionnaire, which was authorized by Dr. Raymond Rosen, in the year 2000, in the United States, where he evaluates six domains, such as sexual desire, sexual arousal, vaginal lubrication, orgasm, sexual satisfaction and pain, the results of the same, with the presence of nineteen questions that qualify the sexual function in the last four weeks, In order to build the FSFI, to perform the calculation it is necessary to sum the questions that correspond to each domain, then they will be multiplied by the correction factor. From the sum of the scores of the domains, we have the results of the total score, with minimum values of 2 and maximum of 36, where the highest values are associated with better sexual function; and the second was the Sexual Quotient – Female Version (QS-F) questionnaire, which was developed and validated specifically for the Brazilian female population by the Sexuality Studies Program of the Institute of Psychiatry of the Hospital das Clínicas of the Medical School of the University of São Paulo11, which is an instrument that evaluates

the various domains of women's sexual activity (desire, arousal, orgasm and their respective psychophysical correlates), the result of this questionnaire is made from answers where a value from 0 to 5 is assigned, in which 0 means "never" and 5 "always" and then a mathematical calculation is performed that shows a final index, where the score score can vary from 0 to 100 points, where 0 is the worst score considered "null" and 100 is the best score is considered "excellent".

4. Informed Consent Form

   After scheduling with the participants, the Free and Informed Consent Form (ICF) was read, the evaluation was carried out, containing important points of history, main complaint, history, life habits, surgical history and sexual history, and at the end the sessions were scheduled to introduce the physiotherapeutic protocol.

5. Physiotherapy Protocol

   The Physical Therapy Protocol consisted of 10 sessions, performed twice a week, lasting 60 minutes per session: lubricating gel and condom were used in all intracavitary procedures, consisting of the use of peridell, a therapeutic massaging device that uses vibration and tips, which allow access to various areas of the vaginal canal for treatment, and pelvic dilators, which are instruments made of rubber, with an anatomical shape and differentiated by colors (yellow, orange, pink, light blue and green) that match their size, respectively, going from the smallest to the largest. In addition to performing kinesiotherapeutic mobility and stretching exercises of the pelvic floor and release of the abductor, gluteal and tensor fascia latae muscles. All sessions followed safety standards - the vital signs of each woman were monitored at the beginning and end of the sessions, use of lab coats, masks, gloves by the therapists, and hygiene of the place and instruments with 70% alcohol.

The reassessment was done at the end of the 10 sessions, reapplying the questionnaires: SF-36, FSFI, QS-F. In addition to the physical examination, including general inspection of the abdomen; palpation of the muscles (adductor longus, tensor fascia latae and glutes), scars, intestinal transit, bladder and ovaries; examination of the external genitalia, including inspection, palpation of the vaginal walls, pelvic floor muscle strength (perineometer), and the *PERFECT scale*.

The data were collected and analyzed by the researchers and were presented in a descriptive manner, with absolute and relative frequencies, mean and standard deviation.

The study was submitted to and approved by the Research Ethics Committee under CAAE 67115023.3.0000.5217.

RESULTS

The study interviewed six women with a mean age of 26.67 years (SD=4.03), ranging from 21 to 31 years, among them, only two women met the inclusion criteria of the study. Below is the description of the cases, as well as the results of the instruments used.

- Case 01: R.F.G, 24 years old, married, with a clinical diagnosis of endometriosis (2021). During her adolescence, she reported that she always had cramps and a high flow in the menarche phase, using contraceptives and the mirena IUD, but she was unsuccessful in resolving her pain. After getting married, she went to the doctor, where an MRI was requested that identified the presence of foci mainly in the intestine. A year after the diagnosis, she began to use contraceptives to control menstrual cramps. Regarding lifestyle habits, the patient reported that he performs physical activity five times a week, being weight training, denies alcoholism and smoking, has a good diet, eating four to five meals a day; Regarding surgical history, the patient underwent a cholecystectomy and silicone implant, she was unable to report the year; his gynecological history shows menarche at 13 years of age; In the sexual history, he has an active sex life, has the presence of dyspareunia, a frequency of twice a week, does not feel that it is satisfactory and presents the absence of orgasm.
    - The patient arrived with a little active sex life. In the first sessions of perineal massage, there was a marked presence of pain and trigger points, especially in the vaginal wall on the left side; when using Peridell, he reports burning only at the time of introduction; The same happened with the pelvic dilator, in addition to a pain reported in the cervix fundus, the initial dilator was the blue one, in which it was tolerant. From the seventh session on, there was an evolution to the green dilator, which was the last level of dilators, in addition to no longer manifesting the presence of pain and burning at the introduction of the devices, during the evolution of the sessions on palpation it was possible to gradually reduce a significant decrease in the trigger points. At the end of the tenth session, the patient was satisfied with her sex life, exposing that it was a pleasurable act, and an improvement in the relationship with her husband and with herself.
- Case 02: N.L.M, 31 years old, married, has been clinically diagnosed with endometriosis since January 2023. It was reported by the same that in 2018 she

started taking contraception and stopped in 2022, for two consecutive years (2020 and 2021) she had amenorrhea. In October 2022 she had a menstrual cycle again, where she started to have a lot of cramps, she went to a doctor in December to evaluate these strong cramps, in January 2023 she was diagnosed with closed endometriosis. Since then, in sexual intercourse, she has had pain in some positions, but they do not persist. He currently does not use any contraceptive medication. Regarding lifestyle habits, the patient reported that he performs physical activity by going to the gym at least five times a week, does not report smoking or alcoholism and considers his diet good, eating four meals a day; in the surgical history, she underwent a septoplasty, but she was unable to report the correct year in which the surgery took place; in the gynecological history, she reported that menarche happened when she was 11 years old and she denied undergoing hormone therapy; In the sexual history, he has an active sexual life, with the presence of dyspareunia in some positions during the sexual act, performs the same three times a week, considers it satisfactory and has the presence of orgasms during intercourse.

Even though the patient had an active sexual life, he reported fear of the act due to pain. During palpation, he presented trigger points and pain in the vaginal wall on the left side, in relation to the dilator, it started with blue and in the second session evolved to green, being the last level of dilators, with which the patient reported feeling discomfort in the bottom of the cervix. From the seventh session on, the absence of pain and trigger points and the report of discomfort in the cervix were exposed. At the end of the tenth session, she declared that she had better pelvic mobility and was more confident in the sexual act, in addition to the desire to get pregnant since she no longer felt pain.

Table 1 presents the results of each participant. In case 01 (R.F.G, 24 years old) it is possible to observe that according to the SF-36 questionnaire, Functional Capacity was reduced by five points from the evaluation to the reevaluation, being 75 and 70, respectively; Pain, which showed a significant improvement in the evaluation for reevaluation, being more than half of the value, where the evaluation score was 20 and in the reevaluation it was 52, observing then that it was the function where there was the greatest gain, being 32 points, in Vitality we had an increase of more than 20 points from the evaluation for reevaluation, being 30 and 60 points, Social Aspects: an improvement was observed, where in the evaluation the result was 62.5 points and in the reevaluation, 75 points.

It can also be observed that in Case 02 (N.L.M, 31 years old) according to the SF-36 questionnaire, Functional Capacity obtained an increase of 10 points from the evaluation for the reevaluation, being respectively 90 and 100, reaching the maximum value of the questionnaire for this topic, in Vitality it is possible to observe an increase of more than 20 points from the evaluation for the reevaluation, being 30 and 60 points, Social Aspects a significant improvement was observed where in the evaluation the result was 87.5 points and in the reevaluation 100 points, reaching the maximum score of the questionnaire again, the Emotional Aspects had an increase of more than 30 points from the evaluation for reevaluation where in the evaluation the score was zero and in the reevaluation 33.3 and Mental Health had an improvement of more than 15 points where 56 points were obtained in the evaluation and 72 in the reevaluation.

Table 1 - Brazilian version of the Quality of Life Questionnaire - SF-36

	Case 01			Case 02		
	Evaluation	Revaluation	D	Evaluation	Revaluation	D
Functional capacity	75	70	-5	90	100	+10
Limitation due to physical aspects	0	0	0	100	75	-25
Dor	20	52	+32	62	62	0
General health status	62	57	-5	72	77	+5
Vitality	30	60	+30	30	60	+30
Social aspects	62.5	75	+12.5	87.5	100	+12.5
Limitation due to emotional aspects	33.3	33.3	0	0	33.3	+33.3
Mental health	60	56	- 4	56	72	+16

Score	42.8	50.4	+ 7.6	62.1	72,4	+10.3

Source: authorship.

Table 2 shows the scores of each domain of the FSFI questionnaire of the participants. In case 01 (R.F.G, 24 years old), comparing the results of the evaluation and the reassessment carried out after the 10 sessions of the physical therapy protocol, it is possible to observe an improvement in all domains between one evaluation and another. The mean total score ranged from 3.8 in the initial assessment to 27.5 in the reassessment. It is of great importance to highlight that in the evaluation the domains of Arousal, Orgasm and Pain had a score of zero in the evaluation and in the reevaluation we had an improvement of 4.8; 4.8 and 5.2 respectively in each domain, emphasizing that each of these attributes reached a maximum score of six.

By analyzing the results of Case 02 (N.L.M, 31 years old), it is possible to identify the scores of each domain of the FSFI questionnaire, comparing the results of the evaluation to those of the reassessment made after the 10 sessions of the physical therapy protocol, it is possible to identify a great improvement in relation to the domains between the evaluation and the reevaluation. The mean total score changed from 30.9 in the initial assessment to 33.4 in the reassessment. The greatest variation was the domains, Orgasm, which went from 5.2 to 6.0 and Pain, which went from 4.4 to 5.2, and it is important to highlight that the maximum score for each of these domains is six points.

Tabela 2 - Female Sexual Function Index (FSFI)

	Case 01			Case 02		
	Evaluation	Revaluation	D	Evaluation	Revaluation	D
I wish	1.8	3.6	+1.8	4.8	4.8	0
Excitement	0	4.8	+4.8	5.4	5.7	+0.3
Lubrication	0	3.9	+3.9	5.1	5.7	+0.6
Orgasm	0	4.8	+4.8	5.2	6	+0.8

Satisfaction	2	5.2	+3.2	6	6	0
Dor	0	5.2	+5.2	4.4	5.2	+0.8
Score	3.8	27.5	+ 23.7	30.9	33.4	+2.5

Source: authorship.

Table 3 shows the variables in relation to the general quality of sexual satisfaction/performance of the participants in the pre and post intervention of the physical therapy protocol. He was evaluated using the QS-F questionnaire.

Among the aspects analyzed are: sexual desire and interest; foreplay; the woman's arousal and attunement with her partner; comfort in sexual intercourse and orgasm and sexual satisfaction. In case 01 (R.F.G, 24 years old), her sexual performance was evaluated as unfavorable and regular (42-60 points), in which she obtained a score of 44. Subsequently, in the post-intervention period, it evolved to fair to good (62-80 points), reaching a score of 68, showing an evolution in all aspects analyzed.

In case 02 (N.L.M, 31 years old), her sexual performance was evaluated as good excellent Fa (82-100 points), in which she obtained a score of 82. Subsequently, in the post-intervention, it remained good to excellent (82-100 points), reaching a score of 90. Even maintaining the pattern of sexual performance, his final score increased, in view of the aspects involving foreplay, arousal and attunement with the partner, and orgasm and sexual satisfaction.

Table 3 - Sex quotient – female version (QS-F)

Case 01			Case 02		
Evaluation	Revaluation	D	Evaluation	Revaluation	D
44 42-60 points: Unfavorable and fair	68 62-80 points: Regular to good	+24	82 82-100 points: Good to excellent	90 82-100 points: Good to excellent	+8

Source: authorship.

DISCUSSION

In the present study, it was possible to observe a great improvement in the sexual function and activity of women with endometriosis who present dyspareunia, in addition to the quality of life, considering the values obtained in the evaluation and reassessment of them after the physical therapy protocol, and these domains related to sexual function and evaluation were exposed from the FSFI questionnaire and QS-F and SF-36.

In the study by Piassarolli et al12, 26 women with a mean age of 30.5 years with the presence of sexual dysfunction, who participated in a physical therapy intervention, obtained a relevant improvement in all domains of the FSFI questionnaire, the mean total score ranged from 18.5 in the initial evaluation, and 30.3 in the final evaluation.

According to Pereira et al13, in their study composed of 13 sexually active women with clinical symptoms of dyspareunia divided into an intervention group and a control group (n=6 and n=7 respectively), after a protocol of 16 sessions involving the training of the pelvic floor muscles, where the FSFI questionnaire was used to assess the sexual function of each of the participants before and after physical therapy training, From the results, it was possible to observe that there was an improvement in all domains of the questionnaire, with the PAIN domain being relevant, which directly interferes with dyspareunia.

In the present study, both women in relation to the reapplication of the FSFI showed an increase in all domains, as well as the study revealed by Piassarolli et al.[12] Denoting a relevant improvement in the pain domain even with 6 sessions less, coinciding with the study by Pereira et al.[13]

According to Correia et al14, in a study carried out with 375 women aged at least between 18 and 60 years with an active sexual life, in the assessment of quality of life with the SF-36 questionnaire, it was observed that women with sexual dysfunction had lower average scores, mainly involving mental, physical, emotional and social health domains; ratifying the existing literature, in which general well-being is associated with sexual satisfaction. The present study differs in the number of women, in this case two women analyzed, in which they improve their general well-being, mainly involving the domains of mental health, social aspects, vitality, emotional aspects and pain.

Vaz et al15 reported in their study of four women aged between 22 and 53 years that after 10 sessions of physical therapy treatment it was possible to observe an overall improvement in quality of life based on the SF-36 questionnaire, comparing the evaluation with the reevaluation. The same study also observed a general improvement in women in relation to sexual quality through the QS-F questionnaire.

Aquinol16, performed an analysis with a 24-year-old woman, in which she reported pain during sexual intercourse, and without desire to perform the act, based on the physical therapy intervention using kinesiotherapy and intracavitary procedures; it was possible through the QS-F questionnaire to obtain a positive answer, because before the treatment she scored her sexual quality as poor to unfavorable, and after the intervention she answered as regular to good.

Lucheti et al17, observed through five participants, aged between 18 and 45 years with an active sexual life and complaints of pain during sexual intercourse, in a protocol of 15 physiotherapeutic sessions, a significant improvement in sexual performance evaluated by the QS-F questionnaire, where in the evaluation the response of the participants was measured as regular and poor, And in the reevaluation, this performance became good and excellent.

In the present study, the protocol was also proposed for 10 sessions, as presented by Vaz et al15, observing a general improvement in both women. Case 01 is similar to Aquino's analysis16, in view of age and symptomatology, with a positive evolution to the use of intracavitary procedures and kinesiotherapy, because before the treatment she scored her sexual quality as poor to unfavorable, and after the intervention she answered as regular to good. In the score of Lucheti et al17, the study differs in terms of the number of sessions with five more, the response of the participants was measured as regular and poor, and in the reassessment this performance became good and excellent, in our case the evidence was given through regular and bad to regulate to good in case 01, however, even with 10 sessions, a valid result was achieved for sexual performance.

There are few studies that associate the worsening in quality of life, function and sexual activity with women with endometriosis presenting symptoms of dyspareunia, so it is relevant to emphasize the importance of conducting research and studies on the subject of endometriosis and that also address more about the symptoms mentioned above, since this disease has been gaining more and more significance in our society so that we have an even wider range of information.

CONCLUSION

In the present study, two women with endometriosis and symptoms of dyspareunia, with the presence of pain during sexual intercourse, complaints of lack of desire, interest, foreplay, arousal, lubrication, orgasm, and absence of sexual satisfaction and attunement with the partner, validated through the use of FSFI and QS-F questionnaires, reported a significant improvement in the symptoms mentioned above.

In the evaluation of quality of life, with the SF-36 questionnaire, the correlation of how much emotional and physical aspects interfere in sexual satisfaction and performance was identified, and this is directly linked to the person's ability to live their life satisfactorily.

Physiotherapy exceeds a role beyond the cure of physical pain, using physiotherapeutic protocols that include kinesiotherapeutic, intracavitary, electrotherapeutic exercises, which will end up treating and preventing various comorbidities, this profession treats people, with dreams and goals, so it is possible to help women with the symptoms of endometriosis, thus promoting mental and physical well-being for it.

A range of knowledge was obtained on the subject of endometriosis and especially the symptomatology being dyspareunia, since it does not have a relevant presence of information in literary databases. It is evident that the project sample did not have a large number of participants, which further reinforces the need to increase research on this topic, since it is currently being increasingly seen by society, consequently the importance of more information and interventions is relevant so that more women can benefit, and thus have a positive improvement in their quality of life.

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