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REVIEW

Physiotherapeutic resources in vaginismus

Recursos fisioterapêuticos no vaginismo

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Abstract

Vaginismus consists of involuntary spasms in the external musculature of the vagina, the etiology of which is still unknown, but there are cases of biopsychosocial factors such as sexual abuse, strict sex, education, emotional trauma, religious beliefs, low-quality sexual relations, fear of sex, or even changes of osteomioarticular origin, can lead to this condition, making vaginal penetration impossible during sexual intercourse, gynecological exams or use of tampons. Objective: To highlight as physical therapy practices, their validation for the treatment of vaginismus and to verify the effectiveness of the analyzed practices. Methods: Systematic literature review carried out through digital bibliographic research on scientific articles published in electronic and electronic journals, randomized clinical trials, with no period between the years 2010 to 2020, in the electronic databases PubMed, Bireme and PEDro. Results: There was no great variability in the resources used and the studies showed positive and similar results. Conclusion: Physical therapy proved to be beneficial for cases of vaginismus, with the use of functional electrical stimulation (FES) in an analogue way, pelvic floor muscle relaxation exercises, local desensitization performed with vaginal dilator and massage. However, more research is needed, considering the moderate methodological scores found in the studies analyzed.

Keywords: vaginismus, physical therapy, rehabilitation.

Resumo

Vaginismo consiste em espasmos involuntários na musculatura do terço externo da vagina, com etiologia ainda desconhecida, mas há evidências de que fatores biopsicossociais como abuso sexual, sexo estrito, educação, trauma emocional, crenças religiosas, relações sexuais de baixa qualidade, medo do sexo, ou mesmo alterações de origem osteomioarticular, podem acarretar nesta condição, impossibilitando a penetração vaginal em relações sexuais, exames ginecológicos ou no uso de absorventes internos. Objetivo: Evidenciar as práticas fisioterapêuticas, sua validação para o tratamento do vaginismo e verificar a eficácia das práticas analisadas. Material e métodos: Revisão sistemática de literatura realizada através de busca bibliográfica digital em artigos científicos publicados em revistas impressas e eletrônicas, ensaios clínicos randomizados, no período compreendido entre os anos de 2010 a março de 2020, nas bases de dados eletrônicas Pubmed, Bireme e Pedro. Resultados: Não houve grande variabilidade dos recursos utilizados e os estudos apresentaram resultados positivos e semelhantes. Conclusão: A fisioterapia mostrou-se benéfica para os casos de vaginismo, com a utilização de estimulação elétrica funcional (FES) de forma analgésica, exercícios de relaxamento da musculatura do assoalho pélvico, dessensibilização local realizada com dilatador vaginal e massagem. No entanto, mais pesquisas são necessárias, tendo em vista os escores metodológicos moderados encontrados nos estudos analisados.

Palavras-chave: vaginismo, fisioterapia, reabilitação.

Introduction

Female sexual dysfunctions (FSD) are conditions resulting from several biological, psychological, social and cultural factors and it is estimated that they are present in about 20 to 73% of women in the world. They encompass both disturbances of desire, as well as psychoanatomophysiological changes that characterize the sexual response, causing distress and interpersonal difficulties [1]. According to the expanded concept of health, they constitute a public health problem, an aggravation to the quality of life and need the attention of multidisciplinary teams [2].

Among FSD, vaginismus is classified as a painful sexual disorder, with a prevalence of 5 to 17% of the female population with an active sex life [3]. In Brazil, about 2 in every 1000 women have this condition [4]. The provided data may change, considering the profile of the accommodations, which may show shame and embarrassment due to the condition and, consequently, end up not seeking professional help or omitting their information [3,4].

Vaginismus consists of involuntary spasms of the pelvic muscles, which have no external effects of the vagina associated with fear and/or pain [5]. There are divergences in the literature regarding these spasms being chronic or whether they occur only in the presence of something considered as a threat. The etiology is still unknown [6], but there are factors that cause biopsychosocial that can be affected in this condition, such as sexual abuse, strict sex, education, physical or emotional trauma, low quality sexual, religious beliefs, or even fear of sexual intercourse for the first time [7]. In addition, a therapy for gynecological cancer may be involved in genetics, as it causes fibrosis and atrophy of the genital tract due to injury and chemotherapy, thus hindering lubrication and penetration [8].

These physiological reactions cause distressed recurrent and inability to perform any vaginal penetration [9], whether in sexual relations, gynecological exams or in the use of tampons. The manifestations occur with variations in severity and, thus, vaginismus can be classified as primary, when the woman has never had sexual intercourse without pain and secondary, when the woman has had any previous pain-free experience. It can also be classified as global, when contractions occur regardless of partner and/or circumstances, and situational, when contractions occur only with certain partners and/or specific circumstances [7].

Among the forms of diagnosis found in the literature, the gynecological exam is the most used, but due to the peculiarity of the condition, care in the performance must be judicious and the exam should only be performed after the patient is reassured so as not to raise the level of trauma of this woman [10]. Tools such as biofeedback, which enable the analysis of muscle contractions, and the application of the Female Sexual Function Index (FSFI) questionnaire can also be used as an aid to diagnosis [6]. In contrast, the diagnostic approach is based on persistent or recurrent difficulties in vaginal penetration during sexual intercourse, marked pelvic pain during intercourse or attempts at penetration and fear in anticipation, and allows assessment as a disorder not only sexual, but also as a behavioral problem [11].

Physical therapy applied in cases of vaginismus has as its main objectives to develop awareness, control of the pelvic floor muscles (PFM), restoration of function and mobility, as well as pain relief [10]. The approaches consist of techniques such as biofeedback associated with surface electromyography and PFM relaxation to help identify contractions and, thus, promote greater muscle control [9]. Vaginal dilators for stretching the PFM [12], gradual desensitization [13] for pain relief and myofascial release of trigger points [14] have also been reported in the literature [12].

Considering the information provided, a physiotherapeutic approach is essential for this dysfunction, due to the importance of the plurality of techniques used for greater treatment effectiveness. In counterpart, the literature has shown that there are no studies that validate these techniques. Thus, this systematic review aims to highlight physical therapy practices found in the literature for the treatment of vaginismus and to verify the practical practices analyzed.

Methods

This study deals with a systematic literature review carried out from March to June 2020, through digital bibliographic research in scientific articles published in magazines and electronics, with no period between 2010 and 2020, in the databases Pubmed, Bireme and PEDro. Studies with the language of publication in Portuguese and English were selected in different strategies to protect a comprehensive search (Table I). Manual searches were also performed based on the references of the included studies. The guiding question of this study was to discover the

effectiveness of physiotherapeutic resources in the treatment of vaginismus. This question was able to generate descriptors related to the population, type of intervention of interest, comparisons and outcomes.

Table I - Boolean descriptors and operators used to search databases.

Databases	Equations of search
Pubmed	(vaginismus) AND (physiotherapy OR physical therapy OR rehabilitation)
Bireme	(vaginismus) AND (physiotherapy OR physical therapy OR rehabilitation)
PeDro	(vaginismus) AND (physiotherapy OR physical therapy OR rehabilitation)

The searches were carried out by two independent evaluators who selected the potentially relevant studies from the titles and summaries of the results obtained in the databases. When these sections did not provide enough information to be included, the full text was verified. Subsequently, the same reviewers independently evaluated the complete studies and made the selection according to the eligibility criteria, that is, the use of a publication that involved the performance of physical therapy in cases of vaginismus in the research. Disagreeing cases were resolved by consensus. Authors, year of publication, participants, type of intervention and results of the variables of interest were obtained independently by the two reviewers, using a standardized form. Data analysis was performed in a descriptive manner, proceeding to categorize the data extracted into thematic groups based on the variables of interest.

An evaluation of the quality of the studies was performed using the Downs & Black scale [15] which was developed in order to fill gaps in the evaluation of studies that are not randomized clinical trials. This scale includes 5 sub-items related to: 1) how to report the results (if the information presented in the study allows the reader to interpret the data and results without bias), 2) external validity, 3) the cases, 4) the factors of confusion, and 5) power of the study. To correspond to these sub-items, 27 are listed, which, if the appraiser identifies them, will be scored with "one" value. The absence of criteria corresponds to the evaluation of "zero". It is allowed to apply aspects such as: if the hypotheses and objectives are applied, if the measures are considered measures in the introduction and methods section, if the individuals lost in the follow-up are not reported, if the randomness of the sample is guaranteed, or anonymity of the subjects, there is reference to statistical procedures, among others.

This scale is recognized as "methodologically strong" and is more flexible than others, since it allows to evaluate in a credible way, a greater range of types of study. It also has the advantage that it is possible to evaluate and highlight potential strengths and weaknesses of the studies under evaluation. Studies were considered methodologically strong with scores equal to or greater than 80% of the maximum score, scores between 60 and 80% as moderate, and those below 60% were considered methodologically unsatisfactory (weak) [16].

Results

In the initial search, 124 references were found in total, of which 1 was found through manual search in the studies included through the initial selection. Of these, 97 articles were found in the Bireme database, with 93 articles not being applied to the object of analysis. In Pubmed, 25 articles were found, where 22 did not apply to the object under analysis and 3 were duplicated. Only one article was found in the PEDro database, but it was duplicated. Finally, 7 studies, after reading the titles, abstracts and analytical reading of the articles, were selected as the object of analysis, as they presented aspects that answered the guiding question. Upon reading in full, four studies were removed, as they did not address the subject in the desired manner, thus leaving 3 selected articles. Figure 1 represents the reported research flowchart and the 3 selected studies, which consist of randomized clinical trials.

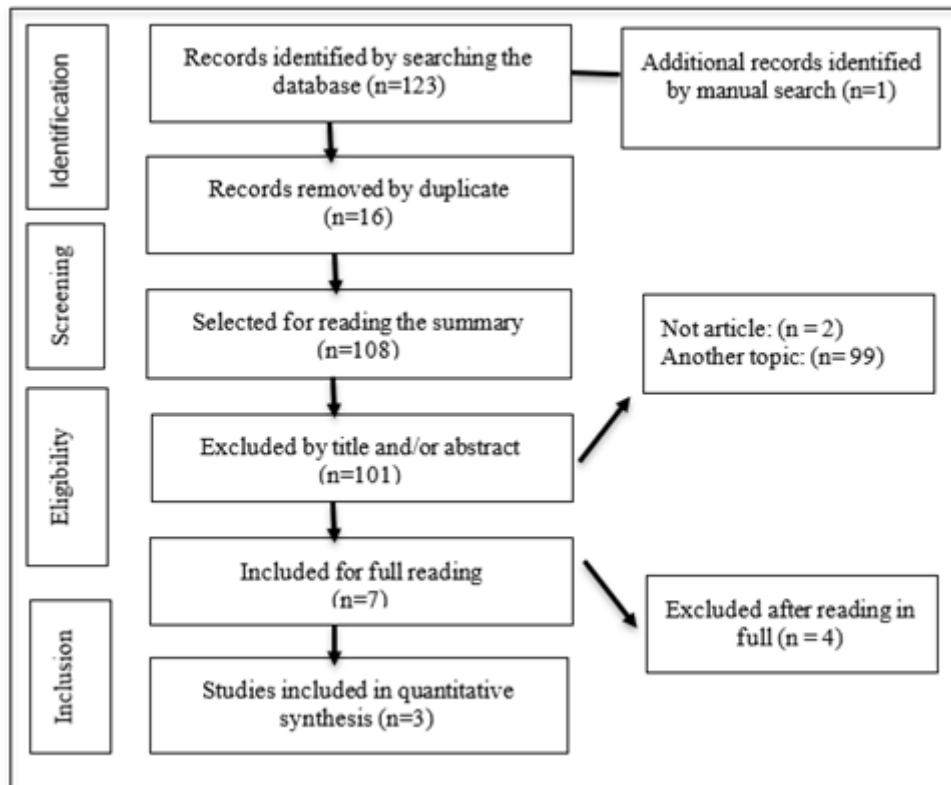


Figure 1 - Flowchart of study selection. *Prisma, 2009* [17].

Characteristics of included studies

Studies on the performance of physical therapy in vaginismus have been found only in international publications. Treatments such as functional electrical stimulation (FES) at analgesic frequencies, pelvic floor relaxation exercises associated and not associated with infrared light and desensitization [18], digital relaxation and vaginal dilators [19,20] were addressed. Table II presents the selected studies characterized by author, year and country, type of study, sample size, age and treatments.

Table II - Bibliographic sources identified, type of study, sample size, sample characteristic (age) and treatment addressed.

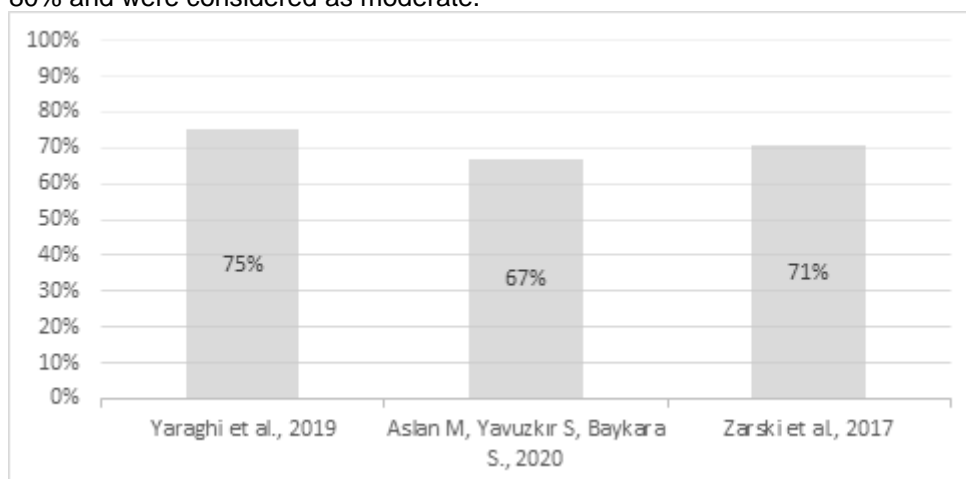
Author/Year/ Country	Kind of study	Sample (n)	Age (years)	Treatments
Yaraghi et al. Iran, 2019	RCT	58	30 ± 10	FES in analgesic frequency, PFM relaxation exercises, IR associated massages and desensitization.
Aslan; Yavuzkır Baykara. Turkey, 2020	RCT	62	31 ± 13	Digital relaxation (fingers) and vaginal dilators.
Zarski et al. Germany, 2017	RCT	77	38 ± 20	PFM relaxation exercises and vaginal dilator.

FES = Functional Electrical Stimulation; IF = Light Infra-Red; PFM = Pelvic Floor Muscles; RCT = Randomized Clinical Trials.

Study bias risk assessment

About the scores obtained using the Downs and Black Methodological Scale, studies obtained an average of 20 points (71%) considering the maximum score of 28 possible. Among the methodological criteria that most failed, alluded to is the absence of a control group, not description of the random variability of the data of the main findings and not the attempt to blind

participants and measurers. Among the studies analyzed, all obtained scores between 60 and 80% and were considered as moderate.



Graphic 1 - Percentage obtained through the Downs and Black scale for the selected works.

Outcome analysis

The results obtained in relation to the evaluation methods, intervention groups, results and main conclusions are shown in Table III.

Chart 1 - Results obtained in relation to the evaluation methods, groups, results and main conclusions. (see PDF annexed)

Discussion

Three randomized controlled trials were the object of this systematic review, which, in at least one evaluated item, showed improvement in some parameter evaluated after the use of some physical therapy resource. When physical therapy intervention was compared with standard therapy or non-intervention, it showed superior results. The studies reported the physiotherapeutic performance with FES in analgesic frequency, PFM relaxation exercises, massages associated with IR light and use of vaginal dilators. In terms of evaluation, the FSFI sexual function evaluation questionnaire was used in all studies. Personal reports, questionnaires about fear of sexual relations and satisfaction questionnaire appeared on time in only one study.

In methodological terms, according to the Check list Downs and Black, the evaluated articles presented results with moderate scores. Essential criteria for the scientific request for studies have not been widely met, which may put the reliability of studies in doubt. Among the missing quality indicators, there is unanimous emphasis on the non-attempt to blind participants and measurers and, in the majority, the absence of a control group and the lack of description of the random variability of the data.

Among the studies presented, all used techniques to promote desensitization of the pelvic region. Yaraghi *et al.* [18], however, did not specify which technique was used and two authors of this review [19,20] used the vaginal dilator. Aslan *et al.* [19] compared the effectiveness of the instrument with the technique performed manually. Generally, treatment begins with genital observation using a mirror, progressing to genital touch [21] and the use of a dilator in a progressive manner guided by a physiotherapist to ensure a safe and effective treatment [12]. These studies have shown the effectiveness of this method and, when compared with the manual technique, it has proved to be advantageous in relation to the outcome of desire and orgasm. Ratifying these findings, this technique was considered effective for sexual satisfaction in the study conducted by Franceschini, Scarlato, Cisi [22]. However, it is worth emphasizing the importance of understanding the etiology of the case before the treatment is performed, given the nature of a psychological bias, this technique may lose its purpose if used inappropriately [23]. In counterpart, Melnik *et al.* [24] reported that desensitization performed systematically, that is, with PFM relaxation techniques and gradual desensitization with dilators, was not as effective as cognitive therapy and drug use.

Since PFM and sexual function are interconnected, since the muscles must exercise their function in a healthy way for there to be a normal function [25]. Yaraghi *et al.* [18], as well as Zarski *et al.* [20] used PFM relaxation exercises in order to promote the reduction of muscle spasms present in the dysfunction and presented positive results in relation to penetrative sexual intercourse. The continuous contraction of the pelvic floor muscles often results in pain and makes sexual intercourse impossible. It is essential to treat vaginismus techniques that aim to reduce this condition and not only treat pain exclusively, since they are the result of these spasms. However, for the use of exercises with the objective of desensitization, this treatment does not have as effective results as other techniques [24] and demonstrate the need for association with analgesic techniques.

In the results of the Aslan study, Aslan *et al.* [19] showed success in the treatment of vaginismus with electrostimulation (FES) used in analgesic frequency, producing a defensive reflex as a mechanism against nociception [26]. In this way, tolerance to touch was potentiated and, subsequently, there was an improvement in sexual function allowing for a satisfactory sexual relationship [27]. However, the relaxation techniques of PFM and massage must be associated, as the mobilization of tissues causes heat and helps in the organization of collagen and reduction of adhesions and can relieve local pain [28]. This study, despite a moderate score, was the only one to demonstrate a greater association of techniques in the treatment of vaginismus with physical therapy techniques. With a focus on the complexity of chronic pain within a biopsychosocial context, in 2018, a study conducted by Kaiser *et al.* [29] showed positive results generating the recommendation of multimodal therapies with the presence of physiotherapeutic techniques for the treatment of chronic pain, with the aim of improvements in physical, mental and social factors and having as parameters the intensity and frequency of pain, physical activity, emotional well-being, satisfaction with social activities, productivity, health-related quality of life and the patient's perception of the achievement of the goals of the treatment.

Therefore, according to the results obtained in the present review, it was possible to observe that there was a consensus on the physiotherapeutic techniques used in the treatment of vaginismus, considering that the study approaches are similar or complement each other and presented positive outcomes. It was possible to verify the scarcity of investigations about this dysfunction in the general field of health, as well as physical therapy and its possible treatments, limiting this work and highlighting the need for further research to identify the most appropriate physiotherapeutic treatments.

Conclusion

The main findings of the present study were the consensus of the studies on physical therapy techniques used in the treatment of vaginismus and greater effectiveness when the techniques were associated, showing improvements in sexual function with the use of FES in analgesia parameters, PFM relaxation exercises, local desensitization performed with vaginal dilator and massage. Even if the present studies show positive and consensual results, there is still a need for more studies in the area, in view of the moderate methodological scores, the current scarcity of the literature in relation to vaginismus and treatment methods.

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