

Physiotherapy in Treating Sexual Pain Disorders in Women: A Systematic Review

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Received 2 June 2016; accepted 11 July 2016; published 14 July 2016

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Abstract

Importance: A lot of women suffer from sexual dysfunctions, which most of the times cause pain and discomfort. Many genito-pelvic pain disorders appear in the form of contractions or pelvic floor muscle tension, which makes any type of penetration (sexual, tampons, gynaecological examination tools) impossible. In this condition, a woman cannot control these muscle contractions and experiences moderate to intense pain. **Objectives:** To summarise published evidence on efficacy of physiotherapy for treating female sexual pain disorders, ways to evaluate the condition of a patient and to find the correct treatment. **Evidence review:** A literature search of Cochrane, PubMed, Journal of Sexual Medicine and Urogynecology Journal databases, SciELO, Google Scholar, Wiley Online Library and University of Barcelona Library was conducted. **Findings:** Physiotherapy techniques are used to strengthen pelvic floor muscles and relieve pain. Kegel exercises improve the symptoms of sexual pain disorders as they deal with weakened muscles. Vaginal cones exercises are used to strengthen the muscles by means of introduction of gradually increasing weights in the vagina. Biofeedback helps to increase muscle awareness and auto-evaluation of performed exercises. Thermotherapy relaxes muscles and increases elasticity of tissues which helps to reduce pain. Electro-stimulation improves the functionality of muscles. Myofascial therapy consists mainly in manual therapy and in liberating painful trigger points. **Conclusions:** The role of pelvic physiotherapy is to solve the problems related to sexual pain, recovering the pelvic floor by increasing muscle awareness and proprioception, improving muscle relaxation, toning the muscles and increasing the elasticity of the tissues in order to eliminate or reduce pain. Different exercise techniques, biofeedback, manual therapy and insertion techniques, as well as electro-stimulation and thermotherapy are used to achieve positive results.

Keywords

Genito-Pelvic Pain, Pelvic Floor Physiotherapy, Dyspareunia, Sexual Pain Dysfunctions

1. Introduction

The objective of this paper is to analyze the ways in which physiotherapy can help to treat sexual pain disorders.

According to the World Health Organisation, human sexuality can be defined as:

“A central aspect of being human throughout life encompasses sex, gender identities and roles, eroticism, pleasure, intimacy, reproduction and sexual orientation. Sexuality is experienced and expressed in thoughts, fantasies, desires, beliefs, attitudes, values, behaviours, practices, roles and relationships. While sexuality can include all of these dimensions, not all of them are always experienced or expressed. Sexuality is influenced by the interaction of biological, psychological, social, economic, political, cultural, legal, historical, religious and spiritual factors” [1].

From the humanistic perspective, the sexuality in our society was hidden by education and was full of taboos and prejudices, but it is of primary importance to value and accept it, in order to maintain or recover a healthy life.

Sexual health is the state of physical, emotional, mental and social well-being in relation to sexuality, it is not just the absence of illnesses or dysfunctions [2].

Current conflicts related to sexual values have a lot in common with religious disagreements and educational and political campaigns of the past centuries. Nowadays the consequences are still present in attitudes towards sex, in medical practice and in children’s education and they can lead to sexual dysfunctions in both men and women. The etiology of sexual dysfunctions is affected by many physical and emotional factors. The presence of pain, the inability to orgasm and the absence of arousal and sexual desire are problems that many people experience in their life.

2. Methods

Articles from the databases of PubMed, Urogynecology Journal, Cochrane, Journal of Sexual Medicine, University of Barcelona (UB), Google Scholar and the Scientific Electronic Library Online (SciELO), Wiley Online library were used to undertake this research in determining the physiotherapy techniques applied in the treatment of feminine sexual dysfunctions. Scientific papers published in both English and Spanish languages were used, references of identified articles were searched for additional relevant articles. The search was conducted mostly for studies published between 1 January, 1999 and 1 January, 2016.

References, articles and books containing such keywords as sexual pain disorders, pelvic floor physiotherapy, urinary incontinence, manual therapy, thermotherapy, etc. were searched.

The information relevant to sexual pain disorders and their possible treatment with the help of physiotherapy was studied. The data was studied and analysed, the conclusions were made upon researching several sources on each subject. This systematic review was elaborated in the period between January 2016 and May 2016.

The critical evaluation of the material was done after having read the complete works published on this subject.

12 articles were considered of major importance and were used as a background to write this systematic report together with 4 reports, 6 books and 4 randomised trials.

3. Results

The pelvic floor is formed by a group of muscles that support the inferior abdominal part of the body and maintain the bladder, the uterus and a part of the intestine in place.

Genito-pelvic pain can be due to an injury caused by: pregnancy (both the weight of the uterus and the relaxing effect of hormones can debilitate the pelvic floor), labour (labour causes muscle-aponeurotic and neurologic perineal injuries during the expulsive period), surgical interventions on the perineal area, lack of estrogen in post-menopausal women (causing loss of tone and weakness of the perineal muscles), obesity, constipation, chronic smoker’s cough and high risk professions (athletes, singers, wind instrument musicians).

Physiotherapy treatments will be different and depend on the patient’s and therapist’s objectives.

The most common therapies to strengthen, relax and tone pelvic floor muscles are the active therapy techniques.

3.1. Kegel Exercises

Pelvic floor recovery techniques have become popular since 1950 when the gynaecologist Arnold Kegel proved

the relationship between pelvic floor dysfunctions and hypotonia or perineal muscle weakness and that there was a noticeable improvement or complete disappearance of symptoms when strengthening exercises of this group of muscles were performed. Kegel was the first to create Pelvic Floor Muscle Training (PFMT). His method includes exercises that increase the strength of perineal muscle contractions. Its efficacy has been clearly demonstrated [3].

There are different ways to perform Kegel exercises, but they are all based on repetitive contraction and relaxation of the muscles in order to increase muscle strength and resistance, improve the symptoms of dyspareunia and to prevent or avoid urinary incontinence and other related problems.

3.2. Vaginal Cones (Weights) Exercises

Exercises with vaginal cones are a pelvic floor muscle training. By contraction of muscle fibres, they help patients to become aware of the perineal muscle action and to strengthen this area. Cone shaped weights are used in these exercises and they are inserted trans-vaginally. Every cone has a gradually different weight (even though they are all of the same size), and they have to be maintained in the vagina like a small tampon during several minutes while standing up or walking.

After introducing the cone into the vagina it usually descends and slightly falls down pushed by its own weight. The feeling of “losing” the weight causes a light pelvic floor muscle contraction and therefore helps to maintain the cone inside. This simple contraction and the gradual increase of the weight of the cones effectively strengthen pelvic floor muscles. Women start to notice improvements in muscle tone after 2 or 3 weeks, the complete course usually lasts 2 to 3 months [4].

3.3. Biofeedback

With the biofeedback technique, pelvic floor muscle exercises are performed with the help of a machine that shows muscle contractions in the form of a graphic or acoustic signal, so that the patient and physiotherapist receive training feedback [5].

The advantages of biofeedback when used for pelvic floor rehabilitation are the following: it helps to increase awareness of muscle structure, enables auto-evaluation of performed exercises, motivates the patients and it can be personalised according to the needs of each person [6].

Biofeedback focuses mainly on slow-twitch fibres in order to achieve an adequate perineal tone and eliminate pain.

The introduction of biofeedback in perineal rehabilitation techniques has noticeably improved the results of the therapy, becoming the most effective perineal recovery technique [7].

3.4. Thermotherapy

Thermotherapy consists of the local application of heat above physiological levels of body temperature in order to treat muscle tissues. This therapy is based on the fundamental thermodynamics law, that states that heat is the energy that moves material body molecules [8]. For a proper use of thermotherapy we should take into account that body temperature is not consistent. On the surface, the cutaneous temperature can vary between 29°C and 34°C depending on a part of the body, but at a deeper level the body temperature becomes uniform, around 37°C [9]. The thermal agents used in this therapy have a higher temperature than a human body, in other words, higher than 37°C. This therapy, when applied, makes the connective tissues more elastic. To increase tissue elasticity, thermotherapy would be more beneficial if pulling tension was applied in the affected area together with heat, especially if the pulling tension was prolonged and persistent. Muscle relaxation caused by the heat decreases stretching resistance of the tissues and facilitates the stretching and collagen flexibility. The heat and the stretching affect the connective tissue in a way that accelerates the synthesis of collagen [10] If thermotherapy was used together with electric current we would be able to relieve the pain, to relax and strengthen muscles, to decrease inflammation and to regenerate damaged tissues, etc. Ultrasound, infrared light and short waves are some of the most common therapies.

3.5. Electro-Stimulation

Electro-stimulation is the application of electric current to stimulate the contraction of muscles. The main objective

of this electro-stimulation is to improve pelvic floor functionality. It has been used for over 50 years to treat pain and urinary incontinence, nevertheless, there is no clear biological evidence that explains how it functions. It has been proven that a good pelvic floor muscle contraction can be achieved if the nerve is stimulated by a vaginal electrode. On the other hand, in theory, its fundamental feature is the ability to inhibit the detrusor muscle by means of voluntary pelvic floor muscle contraction [11].

TENS (Transcutaneous Electrical Nerve Stimulation) is a device used for the cutaneous application of electrical current in order to control pain. It contains a battery to modulate the scale, the frequency and the intensity of the pulse. It is connected to the skin with two or more electrodes [9].

Generally TENS applies high frequency (>50 Hz) with an intensity lower than motor contraction (sensory intensity) and low frequency (<10 Hz) with an intensity which produces motor contraction.

Transcutaneous electrical nerve stimulation (TENS) is a technique that allows stimulation of the nerves by means of an electric current. It has been shown that TENS can be highly effective in treating genital pain, but it is essential to use adequate and validated stimulation criteria. Additionally, low frequency electric stimulation induces the local release of analgesic agents that help to improve the pain threshold [12].

3.6. Myofascial Therapy

The fascial system is a connective tissue system composed of collagen, elastine and extracellular matrix. Fascias support and protect muscle structures. Tension in soft tissue often causes pain and myofascial tension in a muscle will impede its contraction and mobility [13]. Myofascial induction is a therapy that maintains the balance of the myofascial system by means of manual contact.

This therapy mainly consists in liberating myofascial trigger points, which are the most painful points in the area. These focal points are situated inside the so called “tense muscle band”, which is a group of muscle fibres much more contracted than the rest of the muscle they belong to. Trigger points are usually between 2 - 5 mm and can be unblocked with therapeutic exercises that release persistent spasms. Physical therapy to release trigger points usually consists of such techniques as: massage, stretching, unblocking trigger points by pressing and massaging them, the use of dry needling and improving poor mobility in fascias (myofascial induction) [14].

4. Discussion

The scientific knowledge regarding sexual dysfunction is constantly evolving, which shows the effort undertaken to improve our understanding of the complexity of the sexual cycle, especially in women.

According to the latest Diagnostic and Statistic Manual of Mental Disorders of the American Psychiatric Association [15] female sexual dysfunctions could be classified in three groups:

- Orgasm disorders
- Sexual interest or arousal disorders
- Genito-pelvic pain and penetration disorders

In DSM-IV (1994) sexual dysfunctions referred to sexual pain or to a disturbance in one or more phases of the sexual response cycle. The response cycle according to Masters and Johnson consists in: 1) The excitement phase, 2) The plateau phase, 3) The orgasmic phase and 4) The resolution phase. Nevertheless, sexual response is not always a linear, uniform process and the distinction between certain phases may be artificial [16].

Genito-pelvic pain and penetration disorder in DSM-V is a new group that combined vaginismus and dyspareunia which were comorbid and hard to distinguish in DSM-IV [17].

In our study, out of all the sexual disorders the attention will be focused on genito-pelvic pain disorders, because they are more likely to be treated with physiotherapy. Many genito-pelvic pain disorders appear in a form of contractions or pelvic floor muscle tensions around the vagina, which makes any type of penetration (sexual, tampons, gynaecological tools) impossible. A painful muscular tension reaction occurs when a penetration is performed. In this condition a woman cannot control the muscle contraction and experiences moderate to intense pain.

The degree of these disorders can also vary and is different in every case. Some women can not tolerate penetration pain at all, some can introduce a tampon, for example, but having a sexual relationship is very painful for them.

Women can have different symptoms of sexual disorders. Various symptoms of genito-pelvic pain disorders are included in DSM-V [15].

- Tightening of the vaginal muscle resulting in the inability to penetrate.
- A sensation of tension, pain or a burning sensation felt when penetration is attempted.
- A decrease in, or no desire to have intercourse.
- An intense phobia or fear of pain.
- Voluntary avoidance of sexual activity.

In many cases genito-pelvic pain disorders include dyspareunia and vaginismus. Vaginismus is a difficulty to have intercourse due to involuntary contractions of inferior vaginal muscles. It can also be defined as a persistent or recurrent appearance of involuntary spasms of the vagina muscles with any type of penetration [18].

Dyspareunia is as persistent or recurrent pain during vaginal penetration. Women can experience it at the opening of the vagina or deep within the pelvis upon deeper penetration [19].

It is difficult to define the exact etiology of genito-pelvic pain and penetration disorders, nevertheless, vaginal muscle inflammation, vulva injuries, vaginal prolapses, injuries during labour (episiotomies), perineal tears and muscle stiffness in menopause could all be factors in the cause of these problems. The causes can be psychological as well as physiological, and can be caused by the traumatic past experiences such as: painful labour, previous sexual abuse, extreme nervous sensitivity and even the fear of becoming pregnant [20].

Pelvic floor physiotherapy can solve pain related problems quite effectively. This approach is not very common but can be highly efficient. The main objectives of physiotherapy are: the rehabilitation of the pelvic floor increasing the awareness and proprioception of the muscles, the improvement of muscle relaxation, the tonification of muscles, the increase of muscle elasticity and vagina opening and the treatment of pain in the area. These objectives can be reached through education, biofeedback, manual therapy and insertion techniques, as well as electro and thermotherapies [21].

Physiotherapy includes: evaluation, diagnosis, therapy planning, intervention and evaluation of chosen strategies.

5. Evaluation

Comprehensive evaluation in physiotherapy includes: anamnesis, posture and muscle evaluation, stride and movement patterns observation, evaluation of muscular strength and resistance and evaluation of articulation and soft tissue mobility. Pelvic floor evaluation is based on functionality, balance, mobility and integrity of the components of muscle and connective tissues.

Pelvic floor muscles are palpated in order to evaluate perineal muscles contraction and relaxation, also, to examine if painful trigger points are present. Pelvic floor muscle strength tests are performed by measuring the force of contractions around the palpating finger, seeing if there is a noticeable ascent of a palpating finger, counting the number and the duration of contractions. This information is usually evaluated according to the Oxford scale, which includes six degrees of muscle strength, where 0-absence of muscle, 1- very weak or fluctuating contractions, 2-light increase of tension, 3-moderate tension can be maintained, 4-good tension with resistance, 5-strong tension with good resistance [22].

Within muscle contraction evaluation, besides muscle strength, we need to consider other factors such as resistance, fatigability and speed of the contractions. For this reason, Laycock has developed and validated a new evaluation protocol which can be defined by the acronym PERFECT (P = power, E = endurance, R = repetitions, F = fast, ECT = every contraction timed). This protocol permits the design of a specific, personalised physiotherapy programme for every patient [23].

5.1. Diagnosis

Physiotherapists need to obtain additional information from other medical specialists to complete the diagnostic process, and to evaluate the results of magnetic resonance, ultrasound or other tests.

5.2. Planning

Planning an intervention includes negotiation of final objectives with the patient and her family. It is very important to know the patient's final expectations. For some women it will be the goal will be to reduce unpleasant sensations caused by prolapses, for others, it will be to tone the pelvic floor muscles [24].

5.3. Intervention

In general, physiotherapeutic interventions are performed in order to achieve established goals, and could include: manual therapy; functional training (muscle coordination, strength and resistance; flexibility and relaxation); mechanical, physical or electrotherapeutic agents; documentation and coordination.

Knowledge of sexual dysfunctions is fundamental in pelvic floor physiotherapy. A physiotherapist must choose appropriate treatments for different patients in each case. When deciding on a treatment or a physiotherapeutic intervention, a specialist should be aware of “the quality of the treatment” especially of the intensity and possible consequences of such [25].

5.4. Evaluation of Strategies

It is essential to evaluate the chosen strategies and results obtained. It is also necessary to utilise the “*International Classification of Functioning, Disability, and Health (ICF)*” standards to be able to evaluate an intervention [26].

6. Conclusion

Treatment of pain related with sexual dysfunctions is of great importance, it has become a multidisciplinary topic, where physiotherapists are focusing on motivating their patients to prepare them to deal with this problem and also, to provide a solution in each particular case. Physiotherapy to reduce or to completely eliminate pain in the pelvic floor area caused by sexual dysfunctions includes a combination of practical techniques, exercises, manual therapies, electrotherapy and different thermotherapies. The work of the pelvic physiotherapist consists of: interventions, such as psychotherapeutic diagnostic; educating and informing their patients; pelvic muscle training; vaginal weights training; electrical stimulation; biofeedback; thermotherapy, etc. Pelvic floor physiotherapy could be considered of vital importance in treatment of feminine sexual dysfunctions.

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