

The Role of Physical Therapy in Female Sexual Dysfunction

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Healthy sexual function requires physical, mental, and emotional well-being. Physical presentations that may limit sexual activity include decreased mobility, alterations in sensation, decreased genital circulation, and pain. Physical therapists play an important role in facilitating optimal sexual function by providing treatment to restore function, improve mobility, and relieve pain. This article summarizes the theory and practice of physical therapy in sexual health and considers potential new areas for physical therapy intervention.

Introduction

The promotion of sexual function with optimal satisfaction and minimal distress has become an objective of various disciplines within the field of medicine. Medical treatment of sexual problems includes a complete assessment of the many possible, multifactorial physiologic components involved and may include consultation, medication, surgical intervention, or referral to a mental health provider. In addition to recognizing and providing treatment for the psychosexual components involved in intimacy, comprehensive sexual medicine settings also recognize that lifestyle changes, such as diet and exercise, are vital, and medical alternatives such as herbs, botanicals, combination products, and topical formulations deserve further consideration [1]. Therefore, practitioners from a wide variety of medical and paramedical professions are involved in the promotion of sexual health.

The multidisciplinary approach to sexual health combines the professions of medicine, mental health, and complementary medical management. Physical therapy is among the disciplines involved in treating sexual problems. Physical therapists provide treatment to restore function, improve mobility, relieve pain, and prevent or limit perma-

nent physical disabilities of patients suffering from injuries or disease [2]. Sexual health is an integral component to overall wellness, and sexual relations are a valued human activity. Symptom presentations that limit optimal sexual function—such as joint, pelvic, or genital pain and possibly decreased genital arousal—frequently involve musculoskeletal components. Additional areas of current study include the efficacy of manual therapy and other physical therapy techniques such as biofeedback in enhancing sexual pleasure, decreasing pain, and addressing specific conditions such as sexual dysfunction related to urogenital disorders or surgical complications, vaginismus, generalized and localized vulvodynia, pudendal neuropathy, and persistent genital arousal disorder. The common denominator in these conditions is pelvic floor pathology, an area of specialization within physical therapy. In fact, most studies that have investigated physical therapy applications in sexual health have looked at the treatment of sexual pain disorders and specifically address pelvic floor muscle pathology.

The Pelvic Floor and Sexual Function

The pelvic floor muscles attach anteriorly to the pubic bone and posteriorly to the coccyx forming a bowl-like structure, along with ligaments and fascial tissue. The pelvic floor consists of superficial muscles (including the bulbocavernosus, ischiocavernosus, superficial transverse perineal, and external anal sphincter muscles), an intermediate layer consisting of the deep transverse muscles, and the deeper muscles known collectively as the “levator ani” (LA) muscles, which consist of the pubococcygeus and iliococcygeus. The LA muscles act to lift the pelvic organs and are active during defecation. The puborectalis muscles act together with the external anal and urethral sphincters to close the urinary and anal openings, contract the sphincters, and prevent urinary or fecal leakage.

In addition to its supportive and sphincteric functions, the pelvic floor is apparently involved in enhancing sexual pleasure. The ischiocavernosus attachment to the clitoral hood assists in clitoral engorgement together with the bulbocavernosus muscle, which when contracted, places pressure on the deep dorsal vein of the clitoris, preventing venous escape. The bulbocavernosus muscle, together with the puborectalis, also assists in vaginal closure, facilitating

vaginal friction during intercourse. Activation of the LA, including the pubococcygeus and iliococcygeus muscles, facilitates vaginal ballooning [3].

Pelvic Floor Physical Therapy

The traditional role of pelvic floor physical therapy in women's health has been to provide pelvic floor rehabilitation in order to strengthen the pelvic floor muscles in the treatment of conditions such as urinary incontinence and prolapse. Kegel [4] first introduced the concept of exercising the pelvic floor muscles in 1952 and suggested that women possessed little awareness of their existence. He maintained that becoming aware of and strengthening the pelvic floor muscles could cure incontinence and improve sexual response [4].

Since that time, several studies have provided evidence that rehabilitation of the pelvic floor is an effective treatment for stress urinary incontinence. The literature also supports the use of pelvic floor exercise to improve sexual function. Bo et al. [5] reported the results of a randomized, controlled study in which pelvic floor muscle training was shown to improve quality of life and sexual function in women with stress urinary incontinence (SUI). In a Turkish study, improvement in sexual desire, "performance during coitus," and achievement of orgasm were reported in women who received pelvic floor rehabilitation [6]. More recently, Guiseppe et al. [7] reported that pelvic floor muscle electrical stimulation, a form of strengthening used regularly in muscle rehabilitation, improved sexual function and urinary incontinence in women treated for SUI [7]. Finally, other studies have reported that physical therapy administered for pelvic pain enhanced sexual function in women [8].

Specific Indications for Physiotherapy

Musculoskeletal pain conditions

Women with musculoskeletal pain report less sexual activity. A Brazilian study of fibromyalgia patients reported significant decreases in sexual frequency and interest in comparison with normal controls [9]. Ideally, engaging in enjoyable sexual activity requires the ability to feel, touch, and move comfortably. Musculoskeletal pain, physical disability, orthopedic injury, or neurologic impairments are all conditions that potentially affect sexual function. Physical therapy treatment is geared towards the restoration of the ability to function and perform activities of daily living independently and painlessly. Decreased mobility, inflammation, or dysfunction of the joints of the back, hips, sacroiliac, spine, or pubic symphysis or shortening of surrounding muscles—such as the iliopsoas, hamstrings, or hip adductors—may contribute to pain and affect visceral components, quality and depth of breathing, or ability to comfortably relax the LA to allow for painless sexual functioning. Specific exercises and positioning techniques are

designed to maximize the ability to enjoy sexual activity comfortably and painlessly [10].

Chronic pelvic pain

Chronic pelvic pain may have a higher association with sexual dysfunction than other types of chronic pain. Specific presentations, such as infertility associated with endometriosis [11], and lower urinary tract symptoms (LUTS), including urinary frequency and urgency common in interstitial cystitis, affect sexual function [12]. Gastroenterologic conditions, such as celiac disease and irritable bowel syndrome, affect sexual comfort [13]. Finally, physiologic correlates related to pelvic floor dysfunction affect both pain and sexual function. Manual physical therapy treatment of infertility and pelvic pain has been reported to yield positive results and improve sexual function [14]. Physical therapy treatment for pelvic pain affecting sexual function in both women and men is described in the literature [15]. Specific conditions contributing to pelvic and genital pain or diffuse presentations of vulvar or clitoral pain or burning may be due to pudendal neuropathy [16]. The role of physical therapy in the treatment of pudendal neuropathy and pudendal nerve entrapment has been described, but published studies demonstrating protocol and efficacy are needed [17].

Sexual pain disorders

Sexual pain disorders have been classically divided into dyspareunia and vaginismus. Dyspareunia includes genital pain disorders and a subset of vulvodynia known as localized provoked vulvodynia or vulvar vestibulitis syndrome (VVS), the most common cause of dyspareunia in the premenopausal population. Other causes of dyspareunia may include mechanical factors such as an episiotomy scar after childbirth, postmenopausal atrophy and dryness, or adhesions following a urogenital surgical procedure. There is a role for physical therapy intervention in all these cases. As the recognition of the musculoskeletal components of sexual pain disorders has increased, physical therapy has become a standard treatment intervention. Binik et al. [18•] first proposed that sexual pain disorders should be approached in the context of pain rather than sex, introducing new therapeutic possibilities including cognitive-behavioral pain management, physical therapy, surgery, and alternative pain medication. Physical therapy treatment of vulvar pain syndromes has been studied [19–21]. Physical therapists provide anatomic information, often using a mirror to teach patients about their anatomy. They provide suggestions and advice regarding pain management, functional activities to pursue or avoid, and home exercise. They may also suggest behavioral changes, such as removal of irritants; use of vaginal dilators, baths, or oils; or modifications in bicycle seating or sexual positions. The treatment itself is rehabilitative and includes manual therapy, pelvic floor muscle normalization, and relaxation with tools such as pelvic floor biofeedback and

electrical stimulation. Patients are instructed in various home exercises.

Vulvar pain syndromes

Reissing et al. [22•] found that 90% of women reporting pain as a result of VVS showed pelvic floor pathology. Glazer et al. [23] demonstrated the findings of pelvic floor hypertonus and decreased pelvic floor muscle stability in vulvar pain syndromes and demonstrated at least 50% effectiveness in reducing VVS pain with pelvic floor biofeedback. Subsequent studies produced similar results [24,25]. Danielsson et al. [26], comparing electromyogram biofeedback with topical lidocaine gel, reported that 12 (66%) of 18 patients with VVS showed improvement at 12-month follow-up.

The effectiveness of physical therapy in treating vulvar pain syndromes has been studied. Retrospective studies have reported a success rate of 77% [27,28]. Goetsch [29] recently reported that physical therapy may serve as an important adjunct to surgery for VVS. Pelvic floor electrical stimulation has been studied in the treatment of LA hypertonus and pelvic pain [30] and can successfully improve pelvic floor muscle strength and reduce pain in the treatment of VVS [31]. Use of pelvic floor electrical stimulation also has been associated with improvement in sexual function [32]. High-voltage galvanic stimulation in the treatment of LA syndrome has also been studied [33].

Postpartum dyspareunia

Fatigue, lactation, and a hormonal milieu contributing to vaginal dryness, decreased lubrication, and lowered libido may all combine to result in painful intercourse. In addition, painful and adhesive scar tissue secondary to spontaneous tearing or episiotomy may contribute to pain with intercourse. Although there is a paucity of literature demonstrating efficacy of physical therapy for postpartum dyspareunia, anecdotal experience has shown pain-free return to sexual intercourse after several sessions of physical therapy (Rosenbaum, unpublished observation). The use of perineal ultrasound, the application of deep heat produced by sound waves for the treatment of postpartum dyspareunia secondary to perineal laceration, has been reported in the literature [34].

Postmenopausal dyspareunia

Although postmenopausal dyspareunia is traditionally attributed to vulvovaginal atrophy, it may result from multisystemic causes, and the sources of pain must be identified. Management of postmenopausal dyspareunia, as in all cases of dyspareunia, requires a detailed history to determine possible contributors and direct the physical examination and treatment approach. The physical examination should include evaluation of the mobility and integrity of the pelvic and vulvar musculature, fascia, and connective tissue. Treatment should be multidisciplinary and include pelvic floor physical therapy and sexual counseling [35].

Vaginismus

Muscle spasm of the outer third of the vaginal muscles in response to attempted penetration is the *DSM-IV* definition of vaginismus, a sexual pain disorder associated with pelvic floor muscle dysfunction [36]. Whether the specific finding of spasm has been substantiated has been questioned [37], and current definitions of vaginismus refer to variable pelvic muscle contraction and emphasize the experience of pain and anxiety rather than muscle spasm [38]. Furthermore, the usefulness of considering vaginismus and VVS as separate clinical entities has been questioned [39]. Therefore, the treatment techniques used for vaginismus—including breathing and relaxation techniques to reduce anxiety, local tissue desensitization, use of manual dilators, and manual therapy techniques—are similar to those employed in the treatment of dyspareunia. Reports of the efficacy of physical therapy techniques in treating vaginismus are scarce. When biofeedback was combined with electrical stimulation in the treatment of 12 patients with vaginismus, all patients achieved successful sexual intercourse during and after the treatment [40].

Urogenital conditions: LUTS and postsurgical sexual problems

An additional area of physical therapy intervention is in LUTS that affect sexual function. In a recent meta-analysis of studies correlating LUTS with sexual dysfunction, most studies showed that LUTS can have a negative impact on the sexual health of women, with sexual pain disorder being the most frequent complaint among patients with bladder dysfunctions [41•]. Patients with pelvic floor hypertonus, a condition contributing to painful intercourse, often also suffer from urinary frequency and urgency [42]. Pelvic floor hypotonus and SUI may have a significant impact on sexual function when there is leakage during sexual activity. Urinary leakage can occur during penetration, during orgasm, or both. Another critical aspect of pelvic floor function and rehabilitation with regard to sexual health relates to surgical conditions. There are few randomized, controlled studies comparing the effect of different surgical techniques on sexual function. Studies differ in regard to reporting of sexual function improvement or decline after surgery, although the risk of postoperative dyspareunia and decreased sexual function is recognized. Pain, restricted mobility, and decreased sensation are common adverse effects of all surgery. Physical therapists offer the modalities and skills required to facilitate enhanced circulation, improve soft-tissue mobility, and increase muscle strength and stability to improve the overall surgical outcome.

Genital arousal and orgasm disorder

One may argue that traditional sex therapy techniques that encourage self-awareness, body-awareness, fantasy, masturbation, and the use of vibrators are actually a form of physical therapy. In fact, early studies investigating and promoting pelvic floor muscle exercises in the treat-

ment of anorgasmia were performed by sex therapists and educators. Graber and Kline-Graber [43] found a positive correlation between the strength of a woman's pelvic muscles and the intensity of her orgasmic response. Chambless et al. [44] later suggested that strong pelvic floor muscles were crucial for the attainment of orgasm. Although other studies reported improvement in sexual arousal and orgasm domains in women receiving pelvic floor physical therapy [5,6,8], more evidence-based, randomized, controlled studies are necessary to support the claim that pelvic floor exercise alone can improve sexual arousal and orgasm. A single case report describing successful outcome in the treatment of a woman with anorgasmia using pelvic floor muscle exercises was recently published by Dorey [45]. Because of the various contextual and psychosexual factors involved in sexual arousal and orgasm, including the dyadic component, treatment of this condition, as for other sexual problems, should be multidisciplinary.

Areas Requiring Further Study

Several conditions have been reported to respond to physical therapy intervention; however, further studies are warranted in order to demonstrate efficacy of treatment. These include treatment of clitoral phimosis with manual therapy [46], the treatment of vaginal dryness with pelvic floor exercise and manual therapy [47], and the role of the pelvic floor and the potential role of physical therapy in persistent genital arousal disorder.

Conclusions

Healthy sexuality is a positive and life-affirming part of being human. Sexual expression requires cognitive and emotional abilities including self awareness, self knowledge, and comfort with intimacy, sensuality, and intimate relationships. The capacity to experience optimal comfort and satisfaction in sexual expression also requires basic physical abilities. Essentially, these include intact sensory and motor processes and the ability to move with ease. Rehabilitation and enhancement of these processes when they are challenged are part of how physical therapists facilitate optimal sexual function. Rather than view the physical therapy as technical—as simply opening the vagina while the sex therapy opens the mind—treatment assists sexuality in a sphere beyond the physical, including the development of a therapeutic relationship between patient and therapist. Successful treatment facilitates greater self-awareness, self-confidence, improved body image, lowered anxiety, and feelings of empowerment—all of which encourage and affirm optimal sexual health.

Disclosure

No potential conflict of interest relevant to this article was reported.

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