

**New Focus on Women's Sex Disorders**

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**Course Objectives**

The goal of this module is to provide nurses with information about the identification, pathophysiology, treatment, and nursing management of women with sexual dysfunction. After studying the information presented here, you will be able to -

- Describe the incidence of female sexual dysfunction in the United States.
  - Identify the pharmacologic management of women with sexual dysfunction.
  - Identify the nonpharmacologic management of women with sexual dysfunction.
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Sexual dysfunction is no longer a taboo topic. Over the last decade, new therapies for male sexual dysfunction have become available, and today drug companies pitch Viagra, Levitra, and Cialis on prime-time TV. While no counterpart to Viagra yet exists for women, the healthcare community is taking female sexual dysfunction (FSD) more seriously and searching for effective treatment approaches.

FSD is a multifactorial disorder of sexual function that results in personal distress affecting a woman's quality of life and interpersonal relationships. FSD can encompass disorders of desire, arousal, or orgasm and can involve sexual pain. But it's not necessarily the symptoms but the personal distress that affects the woman's quality of life that contributes to the diagnosis.

Women are becoming more comfortable with turning to their healthcare provider for help with sexual problems. Nurses can play a key role in the identification, evaluation, and treatment of this increasingly prevalent (or increasingly acknowledged) problem.

Epidemiologic data about FSD are limited, but it has been reported that FSD affects 43% of U.S. women aged 18 to 59 and as many as 80% of postmenopausal women.<sup>1,2</sup> A survey of 1,749 women and 1,410 men reported that sexual dysfunction occurred more often in women (43% prevalence) than in men (31%).<sup>2</sup> Low libido has been reported as the most common problem associated with FSD (51%) followed by problems with arousal and pain disorders. Aging and menopause have been negatively associated with sexual activity, but increasing sexual dysfunction has been reported in women 18 to 39 years old, women with less education, unmarried women, and women reporting poor physical and emotional health.<sup>2,3</sup>

**A common language**

Until recently, a well-defined classification of FSD didn't exist. Then in 2000, the [International Consensus Development Conference on Female Sexual Dysfunction](#) developed a diagnostic and classification system based on physiologic as well as psychological factors and including a personal distress criterion for most of the diagnostic categories. Classification provides a common language for researchers, healthcare providers, and women to use to communicate with one another. It also provides a basis for further research on FSD prevalence, etiology, and therapies.<sup>4,5</sup>

FSD consists of four major categories of disorders: sexual desire, sexual arousal, orgasmic, and sexual pain. Sexual desire disorders include hypoactive sexual desire, a persistent or recurring absence of sexual thoughts, desires, or fantasies and a lack of receptivity for sexual activity that leads to personal distress. Sexual arousal disorder is a persistent or recurrent inability to reach or maintain a satisfactory sexual excitation, resulting in personal distress. Orgasmic disorder is defined as a recurrent or persistent difficulty in experiencing orgasm or a prolonged delay in reaching orgasm occurring in the presence of adequate stimulation and arousal. Sexual pain

disorders include [dyspareunia](#) (genital pain associated with sexual intercourse) and [vaginismus](#) (an involuntary spasm of the musculature of the outer third of the vagina that interferes with penetration). Other sexual pain disorders include genital pain induced by noncoital sexual stimulation.<sup>3,4,5</sup> The classification system allows each diagnosis to be subtyped as lifelong vs. acquired, as generalized vs. situational, as organic vs. psychogenic, or of mixed etiologic origin.

### **No distress, no FSD**

One woman's sexual dysfunction may be considered normal for another woman. So if a woman is not troubled by a symptom, she is not diagnosed with FSD. In addition, sexual disorders can coexist. For example, a woman experiencing dyspareunia may also have hypoactive desire disorder.

The etiology of sexual dysfunction includes biologic, psychological, and social factors. Illness can interfere with a woman's sexuality directly or can interfere by altering her body image. Often, the factors that affect FSD are interrelated. Biologic factors include the following:

**Hormonal factors:** Androgens and estrogens play a role in the normal physiology, structure, and function of the genital tissues. Androgens are essential for the development of sexual function in women and are precursors for the biosynthesis of estrogens. Androgens affect desire, mood, and well-being. Estrogens are critical in the physiologic function of genital tissues and vaginal lubrication.<sup>6</sup> Hormone depletion in postmenopausal women is associated with vaginal dryness and [urogenital atrophy](#) that can result in dyspareunia. The loss of androgens can lead to loss of libido, orgasm, and genital sensation.<sup>5,6</sup>

**Vascular deficiencies:** Women who have coronary artery disease, hypertension, or dyslipidemia and those who smoke may develop vasoconstriction of blood vessels, resulting in reduced blood flow to the pelvis, vagina, and clitoris. Artherosclerosis of the pelvic arteries can be associated with decreased sensation and lubrication, affecting arousal.<sup>5</sup>

**Diabetes:** Women with diabetes often experience reduced vaginal lubrication secondary to vaginal fibrosis. Women who are experiencing neurogenic or vascular complications of diabetes may exhibit arousal or orgasmic dysfunction.<sup>5</sup>

**Neurologic:** Stroke, particularly left hemispheric infarction, results in reduced libido and a decline in frequency of intercourse and orgasm. Decreased mobility secondary to the stroke, poststroke depression, and fear of another stroke have been cited as reasons for FSD.<sup>7</sup>

**Medications:** While data related to medication and sexual function in women are lacking, some of the same classes of medication associated with male sexual dysfunction are reported to be associated with FSD. Antihypertensives, antipsychotics, benzodiazepines, and antihistamines can reduce vaginal lubrication and orgasm. Many of these medications alter vaginal smooth muscle relaxation and blood flow to the pelvis.<sup>3,7</sup> Agents associated with decreased arousal include anticholinergics, monoamine oxidase inhibitors, selective serotonin reuptake inhibitors, and tricyclic antidepressants. Medications contributing to a disorder of desire include antipsychotics, barbiturates, MAO inhibitors, SSRIs, antihypertensives, oral contraceptives, and anticonvulsants.

**Chronic disease:** Women with chronic disease have an increased incidence of FSD. The physical problems and stress associated with chronic illness contribute to a less active and enjoyable sex life. Chronic pain and fatigue and the adverse effects of medications for chronic disease may all contribute to FSD.<sup>8</sup> Pain and joint stiffness associated with arthritis and hip replacement or other surgery can limit intercourse, leading to the need for pain medication and special positioning aids, such as cushions or wedges.<sup>7</sup>

**Pelvic surgery:** Hysterectomy with removal of the ovaries may contribute to FSD secondary to estrogen or androgen loss. Although the effects of pelvic surgery on sexual function are controversial, some women report diminished sensation, impaired lubrication, and vaginal changes postoperatively.<sup>9</sup> Damage to the neurovascular bundle from blunt perianal trauma can contribute to arousal and orgasmic disorders. Neurogenic or vascular changes in the perineum can result in decreased perianal sensation and decreased blood flow.<sup>5</sup>

Disorders of the pelvic floor: Urinary incontinence, pelvic relaxation, and the loss of pelvic muscle support of the pelvic organs may result in the development of a [cystocele](#) (bulging of the posterior wall of the bladder into the anterior vaginal wall), a [rectocele](#) (bulging of the anterior wall of the rectum into the posterior vaginal wall), an [enterocele](#) (bulging of the bowel into the posterior cul-de-sac and vaginal wall), or vaginal or uterine prolapse, which all can affect FSD.

A strong relationship exists between FSD and incontinence — and a woman's fear that incontinence may occur during intercourse. Often a reduction in sexual activity is secondary to embarrassment about or discomfort from the pelvic organ prolapse or incontinence.<sup>10</sup>

### **The psychological component**

Along with biological factors, psychiatric disorders, such as depression and anxiety, are important comorbidities of FSD. Partner and relationship problems, which are stressors, may contribute to FSD. A history of sexual assault or trauma can contribute to sexual dysfunction. A high correlation exists between childhood sexual abuse and FSD in adulthood. Women who have been abused at any point in their lives may experience any or all of the FSD classifications.<sup>3,5</sup>

### **Exploring all angles**

An open discussion between the woman and her healthcare provider followed by thorough history, physical examination, and laboratory testing are important in managing FSD. The nurse can help prepare the client by reviewing the steps in determining the diagnosis and therapeutic approaches best for her.

The primary healthcare provider will obtain a thorough, detailed medical history, including a detailed medication history. The medication history should include prescription drugs, OTC medications, vitamins, and herbal supplements.

A thorough sexual history is also needed. Information including past sexual activity and a description of the current sexual dysfunction, including onset, duration, and degree of distress, should be obtained. Questions about the woman's current sexual relationship and her partner's health, sexual functioning, and reactions to the woman's sexual problems are also essential to the history.<sup>1,5,6</sup>

Several sexual function questionnaires are available for women, including the Brief Index of Sexual Functioning for Women (22 questions taking five to 20 minutes to complete) and the [Female Sexual Function Index](#) (19 items taking about 25 minutes to complete.)<sup>7,11</sup> The FSFI is available at [www.fsfi-questionnaire.com](http://www.fsfi-questionnaire.com).

The provider then conducts a physical exam, including a genitourinary evaluation, to assess for trauma, physiologic etiologies, and pain. The provider assesses the external genitalia, including the clitoris and vestibular glands, and examines the pelvic floor musculature and tone, noting any signs of infection or atrophy. Episiotomy scars and previous surgical incisions are evaluated because they may be sites of tenderness as a result of vaginal narrowing, scarring, or nerve entrapment.

Serum laboratories may include estrogen, free testosterone, and dihydroepiandrosterone (DHEA) and thyroid levels to help evaluate for possible endocrine etiologies for FSD. Testing to help diagnose physiologic causes of FSD may also include Doppler ultrasonography of clitoral artery and vaginal blood flow.<sup>3</sup>

### **Calling all disciplines**

In caring for a client with FSD, a collaborative multidisciplinary approach is often necessary. Often a referral to a psychologist specializing in sexuality is needed to make a diagnosis. A psychological evaluation may discover a history of abuse or emotional or partner issues that affects sexual response. The client also should be screened for depression or mitigating social factors. Social service referrals may be warranted if further resources are needed.

Once the work-up is completed, the healthcare provider and the woman can discuss the therapeutic options.

Both hormonal and nonhormonal therapies are available for FSD.

### **Another look at hormones**

Hormonal therapies: Historically, the mainstay of pharmacology therapy for FSD has been hormone replacement therapy. But hormone therapy is a controversial and constantly changing landscape for both providers and patients. Clinical practice has changed dramatically since 2002, when the Women's Health Initiative found that hormone replacement therapy had more risks and fewer protective benefits than previously thought. Now, many fewer women are using hormone therapy. Nevertheless, it has been well documented that estrogen therapy replacement is useful in treating postmenopausal women with FSD.<sup>12,13</sup>

Estrogen therapy may be administered orally, transdermally, and vaginally. It's commercially available in a variety of dosages and preparations. Systemic (oral) estrogen alone is insufficient to resolve the symptoms of FSD.<sup>3</sup> Estrogen works indirectly on enhancing desire by improving urogenital atrophy, decreasing vasomotor symptoms, and improving menopausal mood disorders.<sup>14</sup> But estrogen therapy may increase levels of sex hormone binding globulin (SHBG), which depletes levels of bioavailable testosterone and exacerbates androgen insufficiency. The effects of estrogen therapy are variable and are more likely to be favorable in women with very low levels of circulating estrogens.

In patients with an intact uterus, progesterone therapy must be used in conjunction with estrogen therapy to protect the uterine lining from hyperplasia. The effect of progesterone on sexuality has not been widely studied, but it has been suggested that progesterone exerts a negative impact by dampening mood and decreasing available androgens.<sup>15</sup> Progesterones are available in a variety of individual and combination (with estrogen) dosages and delivery systems.

Androgen replacement therapy in women with FSD is another controversial topic. The major androgens in women include testosterone, dihydrotestosterone (DHT), DHEA, dehydroepiandrosterone sulfate (DHEAS), and androstenedione (A). DHEA, DHEAS, and A are considered proandrogens because they require conversion to testosterone to express their effects.

Testosterone is the most potent androgen. Some research suggests an association between androgen replacement therapy and an improvement in sexual desire, but large placebo-controlled trials with long-term follow-up are needed.<sup>12</sup> The FDA has approved products with combinations of estrogen and androgens for the treatment of menopausal vasomotor symptoms not improved by estrogens alone. Most androgen replacement therapy is "off label," i.e., prescribed for women with FSD although the FDA has not approved it for this purpose, because long-term safety and efficacy data are lacking. Androgen/testosterone therapy is not without risk. Recently, an examination of the data from the [Nurse's Health Study](#) revealed that participants taking combined estrogen and testosterone therapy to boost libido and ease menopausal symptoms experienced a higher risk of invasive breast cancer.<sup>16</sup>

Most nonhormonal therapies are not FDA-approved and are available without a prescription. An example is L-arginine, a precursor in the formation of nitrous oxide. L-arginine, an amino acid, works to promote vaginal and clitoral vasodilatation and smooth muscle relaxation. It is available in several OTC topical and oral preparations. A product available online and in health food stores called ArginMax contains L-arginine, ginseng, ginkgo, damiana, calcium, iron, and several vitamins. In a small short-term study of ArginMax, women experienced improved sexual desire and satisfaction, increased frequency of orgasm, and enhanced clitoral sensation. But questions exist about the study's vague protocol and methodology.<sup>17</sup>

Zestra, another nonhormonal OTC product, is a topical agent that includes borage seed oil, evening primrose oil, extracts of angelica and coleus, and vitamins C and E. Zestra is applied to the vulva before sexual activity and has been shown in a study to be superior to placebo in women with FSD. However, the study was very small, and one of the researchers was the owner of the company supplying the Zestra. The results of this study must be interpreted cautiously because of the possibility of researcher bias.<sup>18</sup>

Avlimil, also available OTC, is a once-daily tablet marketed in women's magazines and on television. This nonhormonal product contains soy isoflavones, black cohosh, sage leaf, red raspberry leaf, and a variety of other herbs and extracts. Avlimil is purported to improve arousal and desire. But scientific evidence is lacking, and the

results of a study on Avlimil have not been published in peer-reviewed journals. Care must be taken when advising women on this and other OTC preparations since rigorous scientific studies have not been done to determine their efficacy and adverse effects, and interactions with other medications may exist.

### **What about Viagra?**

Sildenafil (Viagra) is a selective Type 5 phosphodiesterase inhibitor approved to treat erectile dysfunction. It has also been used off-label for the treatment of FSD. However, research suggests that it has no significant effect on lubrication, sensation, or sexual enjoyment in women.<sup>19</sup> The female arousal response is complex, and the genital engorgement sildenafil provides may be insufficient to improve overall sexual function in women.

### **Beyond drugs**

The complexity of the female sexual response necessitates a multidimensional treatment plan. Women must be educated about female anatomy and sexual response. A woman's open dialogue with her partner and healthcare providers may help allay fears and anxieties and clarify nonpharmacological approaches to improve FSD. For some patients, for example, erotic books or videos, autoarousal, or vibrators may help. Warm baths before intercourse, vaginal lubricants, and varying sexual positions may alleviate discomfort and enhance sexual pleasure in women who experience vaginal dryness and discomfort.

The FDA has approved a nonpharmacological device for treatment of FSD, the [Eros Clitoral Therapy Device](#). Available by prescription, the device is a battery-operated handheld unit, designed to be placed directly over the clitoris. It works by providing a gentle vacuum suction and low-level vibratory sensation and is recommended to be used at least three times a week for five minutes at a time. Researchers and developers of this device postulate that it causes engorgement of the clitoris and consequent stimulation of the genital sensory nerve endings, therefore providing an effective treatment for FSD. These results have been achieved in several small nonblinded studies.<sup>20,21</sup>

Sexual function is an important quality-of-life indicator for many patients, and today healthcare professionals and women are increasingly aware of FSD and its relationship to quality of life.

Nurses can play a key role in helping identify, evaluate, and treat women with FSD. Nursing care to this increasing population of patients ranges from providing prescriptions for pharmacologic therapies in advanced practice settings to providing referrals to counselors and sex therapists.

Careful listening and questioning using a nonjudgmental and caring attitude are essential in evaluating FSD. Addressing FSD in health settings should begin with an open discussion, followed by a thorough physical examination and laboratory testing. Providing education about female sexual functioning and pathophysiology can help reduce anxiety and enhance communication between the woman, her partner, and her healthcare provider.

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