Diagnosis and Treatment of Female Sexual Dysfunction

JENNIFER E. FRANK, MD, *University of Wisconsin School of Medicine and Public Health, Appleton, Wisconsin*
PATRICIA MISTRETTA, MPAS, *Martin Army Community Hospital, Fort Benning, Georgia*
JOSHUA WILL, CPT, MC, USA, *Evans Army Community Hospital, Fort Carson, Colorado*

Female sexual complaints are common, occurring in approximately 40 percent of women. Decreased desire is the most common complaint. Normal versus abnormal sexual functioning in women is poorly understood, although the concept of normal female sexual function continues to develop. A complete history combined with a physical examination is warranted for the evaluation of women with sexual complaints or concerns. Although laboratory evaluation is rarely helpful in guiding diagnosis or treatment, it may be indicated in women with abnormal physical examination findings or suspected comorbidities. The PLISSIT (Permission, Limited Information, Specific Suggestions, Intensive Therapy) or ALLOW (Ask, Legitimize, Limitations, Open up, Work together) method can be used to facilitate discussions about sexual concerns and initiation of treatment. Developments in the treatment of male erectile dysfunction have led to investigation of pharmacotherapy for the treatment of female sexual dysfunction. Although sexual therapy and education (e.g., cognitive behavior therapy, individual and couple therapy, physiotherapy) form the basis of treatment, there is limited research demonstrating the benefit of hormonal and nonhormonal drugs. Testosterone improves sexual function in postmenopausal women with hypoactive sexual desire disorder, although data on its long-term safety and effectiveness are lacking. Estrogen improves dyspareunia associated with vulvovaginal atrophy in postmenopausal women. Phosphodiesterase inhibitors have been shown to have limited benefit in small subsets of women with sexual dysfunction. (Am Fam Physician 2008;77(5):635-642. Copyright © 2008 American Academy of Family Physicians.)

▶ **Patient information:** A handout on this topic is available at http://familydoctor.org/612.xml.

The online version of this article includes supplemental content at http://www.aafp.org/afp.

Female sexual dysfunction is a complex and poorly understood condition that affects women of all ages. Sexual function has been reconceptualized as a cyclic (rather than a linear) process that emphasizes social, psychological, hormonal, environmental, and biologic factors.[1] Sexual problems can be classified as sexual complaints, dysfunction, or disorders. Disorders encompass dysfunction associated with personal distress; therefore, abnormal function or sexual discontent can exist without a disorder being present.[2]

Prevalence

Female sexual complaints are common; the 1992 National Health and Social Life Survey showed a prevalence of 43 percent.[3] A more recent international survey of 27,500 men and women 40 to 80 years of age found that 39 percent of sexually active women reported a problem with sexual activity.[4] It is difficult to accurately determine prevalence because studies use different definitions of normal and abnormal sexual function and use heterogeneous populations.[5,6] The most common sexual complaint in women is decreased desire, followed by orgasmic dysfunction.[3,4] *Table 1* presents prevalence data for female sexual dysfunction disorders.[6,7]

Definition and Classification

Traditionally, female sexual dysfunction has been classified into four categories by the *Diagnostic and Statistical Manual of Mental Disorders,* 4th ed. (DSM-IV): sexual desire, sexual arousal, orgasmic, or sexual pain disorders.[7] However, the definition of normal female sexual functioning has been critically examined, and the accepted definition and classification of female sexual dysfunction have subsequently been revised.[1]

In 2004, the Second International Consensus of Sexual Medicine accepted revised definitions of female sexual dysfunction *(Table 2*[8]*)*. Noting whether symptoms, which may meet the definition for a sexual dysfunction, cause distress allows the physician to

SORT: KEY RECOMMENDATIONS FOR PRACTICE

Clinical recommendations	*Evidence rating*	*References*
Local estrogen therapy is recommended for the treatment of dyspareunia associated with vulvovaginal atrophy.	C	8
Testosterone added to hormone therapy improves sexual function in surgically or naturally menopausal women.	B	25-29
Sexual pain disorders should be treated with a multidimensional and multidisciplinary approach if the cause is unknown or not easily treated.	C	9

A = consistent, good-quality patient-oriented evidence; B = inconsistent or limited-quality patient-oriented evidence; C = consensus, disease-oriented evidence, usual practice, expert opinion, or case series. For information about the SORT evidence rating system, see page 579 or http://www.aafp.org/afpsort.xml.

assess the clinical importance of the symptoms.[8] Female sexual dysfunction may be further defined as lifelong (primary) or acquired (secondary) and as situational (occurs only in certain circumstances or with certain partners) or generalized (occurs in all situations and with all partners).[8,9]

There have been some concerns that female sexual dysfunction, as defined by the DSM-IV and the Second International Consensus of Sexual Medicine, has been created by the pharmaceutical industry to introduce pharmacologic treatment into a nonmedical arena, namely sexual functioning.[10]

Table 1. Prevalence of DSM-IV Female Sexual Dysfunction Disorders

Disorder	*Estimated prevalence**
Sexual desire disorders	
Hypoactive sexual desire disorder	10 to 46 percent
Sexual aversion disorder	Rare
Female sexual arousal disorder	6 to 21 percent
Female orgasmic disorder	4 to 7 percent (general population) 5 to 42 percent (primary care setting)
Sexual pain disorders	
Dyspareunia	3 to 18 percent (general population) 3 to 46 percent (primary care setting) 9 to 21 percent (postmenopausal women)
Vaginismus	0.5 to 1 percent (general population) Up to 30 percent (primary care setting)

DSM-IV = Diagnostic and Statistical Manual of Mental Disorders, 4th ed.

**—Based on DSM-IV diagnostic categories.*

Information from references 6 and 7.

Biology and Pathophysiology

A number of potential causative and contributing factors to female sexual dysfunction have been identified *(Table 3*[11]*)*, reflecting the complex interplay of physiologic, psychological, emotional, and relational components. Normal sexual function is partially dependent on the effects of sex hormones and neurotransmitters on the central and peripheral nervous systems *(Table 4*[2,11,12]*)*.[2]

Sexual desire may be the traditional spontaneous desire from sexual thoughts, dreams, and fantasies; or it may be secondary to cognitive motivation.[8,13] In some women, particularly those in long-term relationships, nonsexual motivators (e.g., emotional closeness, feeling loved) may lead to sexual desire.[1]

With sexual arousal, the genitals experience vasocongestion, which promotes vaginal lubrication, engorgement, and lengthening; dilation of the vaginal wall; and engorgement of the clitoris and vestibulovaginal bulbs. The physiologic effects of arousal are poorly correlated with subjective arousal. Therefore, a woman with an arousal disorder may have genital vasocongestion in response to sexual stimuli but not experience a subjective sense of arousal.[1] Women can have physical satisfaction without experiencing an orgasm. A positive physical experience promotes future motivation and receptiveness.[1]

Evaluation and Diagnosis

Evaluation of sexual complaints may be limited by time constraints, physician or patient discomfort, difficulty with diagnosis, lack of available referral services, and limited treatment options.[14] If time precludes a thorough evaluation at first presentation, the

Table 2. Revised Definitions for Female Sexual Dysfunction from the Second International Consensus of Sexual Medicine

Sexual desire/interest disorder: absent or diminished feelings of sexual interest or desire, absent sexual thoughts or fantasies, and a lack of responsive desire; motivations for attempting to become sexually aroused are scarce or absent; lack of interest is considered to be beyond the normal decrease experienced with increasing age and relationship duration

Subjective sexual arousal disorder: absent or diminished feelings of sexual arousal from any type of sexual stimulation; however, vaginal lubrication or other signs of physical response occur

Genital sexual arousal disorder: complaints of impaired genital sexual arousal, which may include minimal vulvar swelling or vaginal lubrication from any type of sexual stimulation and reduced sexual sensations from caressing genitalia; however, subjective sexual excitement occurs with nongenital sexual stimuli

Combined genital and subjective arousal disorder: absent or diminished feelings of sexual arousal from any type of sexual stimuli plus complaints of absent or impaired genital sexual arousal

Persistent genital arousal disorder: spontaneous, intrusive, and unwanted genital arousal in the absence of sexual interest and desire; arousal is unrelieved by orgasms and persists for hours or days

Women's orgasmic disorder: despite self-report of high sexual arousal or excitement, there is lack of orgasm, markedly diminished intensity of orgasmic sensations, or marked delay of orgasm from any kind of stimulation

Dyspareunia: persistent or recurrent pain with attempted or completed vaginal entry and/or penile-vaginal intercourse

Vaginismus: persistent or recurrent difficulties with vaginal entry of a penis, finger, or other object, despite the woman's expressed desire to participate

Sexual aversion disorder: extreme anxiety or disgust at the anticipation of or attempt at any sexual activity

Information from reference 8.

Table 3. Causes of Female Sexual Dysfunction

Cause	*Examples*	*Sexual symptoms*
Hormonal/endocrine	Hypothalamic-pituitary axis dysfunction, surgical/medical castration, menopause, chronic oral contraceptive use, premature ovarian failure	Decreased libido/desire, vaginal dryness, lack of arousal
Musculogenic	Hyper- or hypotonicity of pelvic floor muscles	Hypertonicity: sexual pain disorders, including vaginismus Hypotonicity: vaginal hypoesthesia, coital anorgasmy, urinary incontinence associated with sexual activity
Neurogenic	Spinal cord injury; disorders of the central or peripheral nervous system (e.g., diabetes, upper motor neuron injury)	Anorgasmy
Psychogenic	Relationship problems, poor body image, decreased self-esteem, mood disorders, adverse effect of psychotropic medication use	Decreased libido/desire, decreased arousal, hypoesthesia, anorgasmy
Vasculogenic	Diminished blood flow to genitals secondary to atherosclerosis, hormonal influences, trauma	Vaginal dryness, dyspareunia

Information from reference 11.

Table 4. Sex Hormones and Neurotransmitters Involved in Sexual Functioning

Sex hormone or neurotransmitter	*Sexual functioning affected*	*Type of effect*	*Comments*
Dopamine	Desire, arousal	Positive	May promote willingness to continue sexual activity after it is initiated
Estrogen	Arousal, desire	Positive	Estrogen deficiency is associated with vaginal atrophy, decreased lubrication, vasocongestion, and sensation
Nitric oxide	Vasocongestion of clitoral tissue	Positive	Adequate levels of estrogen and testosterone may be needed for nitric oxide to initiate vasocongestion
Norepinephrine	Arousal	Positive	—
Oxytocin	Receptivity, orgasm	Positive	Associated with increased perineal contractions with orgasm
Progesterone	Receptivity	Positive	May be antiestrogenic
Prolactin	Arousal	Negative	—
Serotonin	Arousal, desire	Positive and negative	Inhibits norepinephrine and dopamine; may facilitate uterine contractions during orgasm, but also may inhibit orgasm by different mechanisms
Testosterone	Desire, initiation of sexual activity	Positive	Low circulating levels of testosterone are not clearly associated with decreased sexual desire[12]
Vasoactive intestinal peptide	Vasocongestion of clitoral tissue	Positive	—

Information from references 2, 11, and 12.

complaint should be acknowledged and the patient should receive follow-up.[15]

Physicians are often uncomfortable with and poorly educated about obtaining a comprehensive sexual history,[2] even though this is an important component of primary health care.[16] There are a number of validated self-report and interview-based tools for assessing female sexual dysfunction, but they are primarily used in research settings.[17] The Brief Sexual Symptom Checklist is a self-report tool that may be useful in the primary care setting[18] as an adjunct to a comprehensive sexual history.[13] The checklist includes four basic questions to determine the patient's satisfaction with her sexual function, details about specific sexual problems, and the willingness of the patient to discuss these problems with the physician.[18]

Discussions about sexuality should begin with open-ended questions. If a sexual concern is elicited, a focused history includes menstrual, obstetric, reproductive, and sexual histories; status of current relationships and sexual activity; family and personal beliefs about sexuality; and history of sexual trauma or abuse.[2,8] Additional elements of the history include medical and surgical history; medication use, including over-the-counter medications and herbal supplements; alcohol, tobacco, and illicit drug use; family history; and birth control method. Several medical conditions and medications are associated with sexual dysfunction.[2,11,19]

The PLISSIT (Permission, Limited Information, Specific Suggestions, Intensive Therapy) model is used to initiate discussions about sexual dysfunction and its management.[15] The ALLOW (Ask, Legitimize, Limitations, Open up, Work together) model facilitates completion of the sexual history and initiation of treatment or further evaluation. *Table 5* summarizes these models.[15]

Although physical examination findings are often normal,[15] a complete examination, including a focused pelvic examination, can identify pathology and provide patient education about normal anatomy and reassurance that no abnormality is present.[1] The pelvic examination can detect evidence of low hormone levels, infection, hypo- or hypertonicity of pelvic floor muscles, adhesions, and tenderness. The remaining physical examination focuses on mental status; blood pressure and peripheral pulse measurements; and musculoskeletal, thyroid, breast, and neurologic abnormalities. *Table 6* presents an overview of abnormal examination findings.[2,13,15] Abnormal findings are more likely in older women, in women with known gynecologic pathology or chronic systemic disease, and in women who have not received regular medical care.[15]

Laboratory evaluation is rarely helpful in guiding the diagnosis or treatment of female sexual dysfunction. However, a focused evaluation is appropriate, particularly if the history or examination suggests a medical condition.[13] Although some experts advocate testing hormone levels in postmenopausal women or in women with decreased desire or arousal,[11] there is no reliable correlation between hormone levels and sexual function.[12,13,20]

Psychiatric Comorbidities

Sexual dysfunction may be the manifestation of psychiatric illness or an adverse effect of psychotropic medication use.[11] If a woman has sexual complaints while taking a psychotropic medication, a detailed history is necessary to identify the etiology.[21] Use of selective serotonin reuptake inhibitors (SSRIs) is a common cause of medication-induced female sexual dysfunction,

Table 5. Models for Initiating Discussion and Treatment of Female Sexual Dysfunction

ALLOW

Ask the patient about sexual function and activity

Legitimize problems, and acknowledge that dysfunction is a clinical issue

Identify limitations to the evaluation of sexual dysfunction

Open up the discussion, including potential referral

Work with the patient to develop goals and a management plan

PLISSIT[15]

Obtain permission from the patient to discuss sexuality (e.g., "I ask all my patients about their sexuality, is that okay to do with you now?")

Give limited information (e.g., inform the patient about normal sexual functioning)

Give specific suggestions about the patient's particular complaint (e.g., advise the patient to practice self-massage to discover what feels good to her)

Consider intensive therapy with a sexual health subspecialist

ALLOW = Ask, Legitimize, Limitations, Open up, Work together; PLISSIT = Permission, Limited Information, Specific Suggestions, Intensive Therapy.

Information from references 15 and Sadovsky R. The role of the primary care clinician in the management of erectile dysfunction. Rev Urol. 2002;4(suppl 3):S54-S63.

Table 6. Abnormal Physical Examination Findings Related to Female Sexual Dysfunction

Finding	*Potential cause*	*Sexual symptoms*
Genitourinary		
Cystocele, rectocele, or uterine prolapse	—	Decreased desire (from embarrassment), dyspareunia
Fixed, retroverted uterus; nodules; tenderness along uterosacral ligaments	Endometriosis	Deep dyspareunia
Hypertonicity of pelvic muscles	Vaginismus, vestibulitis	Dyspareunia
Sparse pubic hair	Low androgen level	Decreased desire
Tender points along vulvar vestibule	Vestibulitis	Dyspareunia
Vaginal discharge	Infection	Dyspareunia
Vaginal or labial atrophy	Low estrogen level	Dyspareunia, decreased arousal
Vulvar skin abnormalities	Lichen sclerosus, chronic candidal vaginitis	Dyspareunia
Other		
Abnormal blood pressure or peripheral pulses	Atherosclerotic peripheral vascular disease	Decreased arousal
Galactorrhea	Prolactinoma	Decreased desire
Musculoskeletal abnormalities	Osteoarthritis, rheumatoid arthritis, other musculoskeletal conditions	Decreased desire, decreased arousal secondary to difficulty with sexual activity or embarrassment
Neuropathy	Neurologic disorder, diabetes	Decreased desire or arousal, anorgasmy
Pallor	Anemia	Decreased desire or arousal
Thyroid enlargement	Hypothyroidism	Decreased desire or arousal

Information from references 2, 13, and 15.

although all antidepressant classes can cause dysfunction.[22] SSRIs most commonly cause delayed or absent orgasm and decreased libido.[22] The incidence of SSRI-induced sexual dysfunction is estimated to be 30 to 50 percent.[23]

Treatment of medication-induced sexual dysfunction includes dosage reduction; drug holidays; switching to or adding a medication with a lower incidence of sexual adverse effects (e.g., bupropion [Wellbutrin], mirtazapine [Remeron]); behavior strategies; waiting for tolerance to the medication to develop; delaying medication administration until after sexual activity; and individual and couple therapy.[21,22]

Treatment

Treatment of female sexual dysfunction is complicated by the lack of a single causative factor, limited proven treatment options, physician unfamiliarity with available treatments, overlap of different types of dysfunction, limited availability of treatment, and limited expertise in the treatment of female sexual dysfunction.[14] Although patient education and therapy are the foundation of treatment, limited research has demonstrated the benefit of pharmacotherapy *(see online Table A)*.

PATIENT EDUCATION

Many women consider normal sexual function to be the traditional desire-arousal-orgasm process. Physicians can alleviate sexual concerns by educating patients about what is "normal." For example, women who expect to feel desire for sexual stimulation may be reassured that desire can encompass a need for emotional intimacy through sexual activity rather than a need for sexual activity itself.[1] Education about normal anatomy is another important component in addressing sexual concerns. Use of a handheld mirror during a gynecologic examination can demonstrate to the patient normal and abnormal physical findings and facilitate a discussion about the physiologic basis of sexual functioning.[24] Women may be reassured that normal sexual functioning is widely variable.[13]

HYPOACTIVE SEXUAL DESIRE DISORDER

Hypoactive sexual desire disorder is the most common type of female sexual dysfunction[3,4,15,19] and often has a psychological or physiologic cause. Nonpharmacologic treatment is aimed at education, therapy, and treatment of contributing factors. As understanding about normal female sexual function develops, it is important to educate women about how desire may change with increasing age or relationship duration.[8] Therapy emphasizes lifestyle changes such as stress management, adequate rest, and regular exercise.[15]

Pharmacologic treatment is limited. One of the most commonly studied medications is testosterone. Although decreased androgen levels do not correlate well with hypoactive sexual desire disorder,[12] testosterone (usually 300 mcg daily applied transdermally; transdermal application is not approved by the U.S. Food and Drug Administration [FDA] for use in women) has been shown to benefit sexual desire in postmenopausal women receiving hormone therapy.[25-29] Topical and systemic estrogen improves vaginal lubrication in postmenopausal women with vaginal atrophy, but the therapy has not been shown to consistently increase desire or arousal.[9,13,30] Phosphodiesterase inhibitors have not been shown to improve diminished desire.[31] One small, poor-quality study demonstrated improved desire with bupropion treatment.[32]

SEXUAL AROUSAL DISORDER

Because physiologic and subjective arousal may be unrelated,[8] education is a key component in the treatment of female sexual arousal disorder.[15] Another treatment option is the Eros Clitoral Therapy Device, made by UroMetric. The device is FDA-approved and is designed to improve arousal by increasing blood flow to the clitoris with gentle suction.[11,33] Two small, short-term studies have shown that the device benefits women with sexual arousal disorder.[33,34] Lubrication may decrease dyspareunia associated with diminished desire.[15]

Phosphodiesterase inhibitors have been shown to have limited benefit in subgroups of women with sexual arousal disorder[31]; however, most women do not appear to benefit from the treatment.

ORGASMIC DISORDER

Anorgasmy has been successfully treated with directed masturbation, cognitive behavior therapy, and sensate focus.[35] Cognitive behavior therapy focuses on decreasing anxiety and promoting changes in attitudes and sexual thoughts, which increase the ability to achieve orgasm and to gain satisfaction from orgasm.[35] Sensate focus is a form of sexual therapy that guides a woman and her partner through a series of exercises, moving from nonsexual to sexual touching.[35]

Although a few small studies and case reports have suggested that phosphodiesterase inhibitors have a role in the treatment of orgasmic disorder, most studies have not shown a benefit. A pilot study of men and women showed that bupropion was effective for orgasm achievement.[36]

SEXUAL PAIN DISORDERS

Dyspareunia has many potential etiologies, including infection, vaginal atrophy, and endometriosis.[24] Addressing the underlying cause is the first step in treatment. If the cause is unknown or not easily treated, treatment is multidimensional and multidisciplinary and reflects the interplay of physiologic, emotional, and relational factors.[9,24,37]

Physiotherapy (e.g., hands-on techniques, biofeedback, pelvic floor electrical stimulation, perineal ultrasonography, use of vaginal dilators) is a treatment option for sexual pain disorders such as vulvar vestibulitis and vaginismus.[9,37] Psychotherapy is tailored to the patient's individual issues, and inclusion of her sex partner should be encouraged.[9]

In the treatment of vaginismus, psychotherapy addresses the patient's fears about vaginal penetration and allows her to gain increasing comfort with her genitals and, eventually, vaginal penetration.[9] Cognitive behavior therapy (provided in a group setting over six months) that focuses on pain's relationship to anxiety, muscle contractions' relationship to pain perception, and general sexual education has been shown to decrease pain with intercourse and improve sexual satisfaction in women with vulvar vestibulitis.[38]

An educational pelvic examination may be particularly beneficial in patients with sexual pain disorders. During the examination, the physician gains permission from the patient to continue with each step of the pelvic examination, maintaining a willingness to stop at any point. The physician explains the process of the examination, offers the speculum for the patient to hold or look at, and teaches the patient how to relax her pelvic floor muscles.[24] With systematic desensitization, a woman is taught relaxation exercises and is gradually exposed to insertion of a finger or vaginal dilator.[9,38] A Cochrane review of vaginismus treatment determined that there is limited evidence from uncontrolled studies demonstrating the effectiveness of systematic desensitization with vaginal dilators or hypnotherapy.[39]

Pharmacologic therapy of sexual pain disorders includes treatment of the underlying cause, such as estrogen for vaginal atrophy[8,25] or medication for vulvovaginal candidiasis. Vulvar vestibulitis is treated with tricyclic and other antidepressants, anticonvulsants, and topical agents; however, there are limited data to support pharmacologic treatment of sexual pain disorders.[26]

The opinions and assertions contained herein are the private views of the authors and are not to be construed as official or as reflecting the views of the U.S. Army Medical Department or the U.S. Army Service at large.

The Authors

JENNIFER E. FRANK, MD, is an assistant professor in the Department of Family Medicine at the University of Wisconsin School of Medicine and Public Health and is a faculty member at the Fox Valley Family Medicine Residency Program, Appleton, Wis. She received her medical degree from Boston (Mass.) University School of Medicine and completed a family medicine residency at DeWitt Army Hospital, Fort Belvoir, Va.

PATRICIA MISTRETTA, MPAS, is a physician assistant in the Family Medicine Clinic at Martin Army Community Hospital, Fort Benning, Ga. She completed the Emory University School of Medicine Physician Assistant Program, Atlanta, Ga., and received her master's degree in physician assistant studies from the University of Nebraska Medical Center, Omaha.

JOSHUA WILL, CPT, MC, USA, is a family physician at Evans Army Community Hospital, Fort Carson, Colo. He received his doctorate degree in osteopathic medicine at the Kansas City (Mo.) University of Medicine and Biosciences and completed a family medicine residency at Martin Army Community Hospital.

Address correspondence to Jennifer E. Frank, MD, University of Wisconsin Health Fox Valley Family Medicine

Clinic, 229 S. Morrison St., Appleton, WI 54911 (e-mail: jennifer.frank@fammed.wisc.edu). Reprints are not available from the authors.

Author disclosure: Dr. Frank owns stock in Pfizer, manufacturer of Viagra.

REFERENCES

1. Basson R. Women's sexual dysfunction: revised and expanded definitions. *CMAJ.* 2005;172(10):1327-1333.
2. Clayton AH. Sexual function and dysfunction in women. *Psychiatr Clin North Am.* 2003;26(3):673-682.
3. Laumann EO, Paik A, Rosen RC. Sexual dysfunction in the United States. *JAMA*. 1999;281(6):537-544.
4. Nicolosi A, Laumann EO, Glasser DB, Moreira ED, Paik A, Gingell C. Sexual behavior and sexual dysfunctions after age 40: the global study of sexual attitudes and behaviors. *Urology.* 2004;64(5):991-997.
5. Lewis RW, Fugl-Meyer KS, Bosch R, et al. Epidemiology/risk factors of sexual dysfunction. *J Sex Med.* 2004;1(1):35-39.
6. Simons JS, Carey MP. Prevalence of sexual dysfunctions: results from a decade of research. *Arch Sex Behav.* 2001;30(2):177-219.
7. Sexual and gender identity disorders. In: American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders.* 4th ed. Washington, DC: American Psychiatric Association; 2000:493-538.
8. Basson R, Althof S, Davis S, et al. Summary of the recommendations on sexual dysfunctions in women. *J Sex Med.* 2004;1(1):24-34.
9. Crowley T, Richardson D, Goldmeier D. Recommendations for the management of vaginismus: BASHH Special Interest Group for Sexual Dysfunction. *Int J STD AIDS.* 2006;17(1):14-18.
10. Moynihan R. The making of a disease: female sexual dysfunction. *BMJ.* 2003;326(7379):45-47.
11. Berman JR. Physiology of female sexual function and dysfunction. *Int J Impot Res.* 2005;(17 suppl 1):S44-S51.
12. Davis SR, Davison SL, Donath S, Bell RJ. Circulating androgen levels and self-reported sexual function in women. *JAMA.* 2005;294(1):91-96.
13. Potter JE. A 60-year-old woman with sexual difficulties. *JAMA.* 2007;297(6):620-633.
14. Bachmann G. Female sexuality and sexual dysfunction: are we stuck on the learning curve? *J Sex Med.* 2006;3(4):639-645.
15. Feldman J, Striepe M. Women's sexual health. *Clin Fam Pract.* 2004;6(4):839-861.
16. Nusbaum MRH, Hamilton CD. The proactive sexual health history. *Am Fam Physician.* 2002;66(9):1705-1712.
17. Meston CM, Derogatis LR. Validated instruments for assessing female sexual function. *J Sex Marital Ther.* 2002;(28 suppl 1):155-164.
18. Sadovsky R. The role of the primary care clinician in the management of erectile dysfunction. *Rev Urol.* 2002;4(suppl 3):S54-S63.
19. Ragucci KR, Culhane NS. Treatment of female sexual dysfunction. *Ann Pharmacother.* 2003;37(4):546-555.
20. Dennerstein L, Randolph J, Taffe J, Dudley E, Burger H. Hormones, mood, sexuality, and the menopausal transition. *Fertil Steril.* 2002;(77 suppl 4):S42-S48.
21. Baldwin D, Mayers A. Sexual side-effects of antidepressant and antipsychotic drugs. *Adv Psychiatr Treat.* 2003;9:202-210.
22. Werneke U, Northey S, Bhugra D. Antidepressants and sexual dysfunction. *Acta Psychiatr Scand.* 2006;114(6):384-397.
23. Balon R. SSRI-associated sexual dysfunction. *Am J Psychiatry.* 2006;163(9):1504-1509.
24. Weijmar Schultz W, Basson R, Binik Y, et al. Women's sexual pain and its management. *J Sex Med.* 2005;2(3):301-316.
25. Shifren JL, Braunstein GD, Simon JA, et al. Transdermal testosterone treatment in women with impaired sexual function after oophorectomy. *N Engl J Med.* 2000;343(10):682-688.
26. Braunstein GD, Sundwall DA, Katz M, et al. Safety and efficacy of a testosterone patch for the treatment of hypoactive sexual desire disorder in surgically menopausal women: a randomized, placebo-controlled trial. *Arch Intern Med.* 2005;165(14):1582-1589.
27. Simon J, Braunstein G, Nachtigall L, et al. Testosterone patch increases sexual activity and desire in surgically menopausal women with hypoactive sexual desire disorder. *J Clin Endocrinol Metab.* 2005;90(9):5226-5233.
28. Davis SR, van der Mooren MJ, van Lunsen RHW, et al. Efficacy and safety of a testosterone patch for the treatment of hypoactive sexual desire disorder in surgically menopausal women: a randomized, placebo-controlled trial. *Menopause.* 2006;13(3):387-396.
29. Buster JE, Kingsberg SA, Aguirre O, et al. Testosterone patch for low sexual desire in surgically menopausal women: a randomized trial. *Obstet Gynecol.* 2005;105(5 pt 1):944-952.
30. Basson R. Sexual desire and arousal disorders in women. *N Engl J Med.* 2006;354(14):1497-1506.
31. Berman JR, Berman LA, Toler SM, Gill J, Haughie S. Safety and efficacy of sildenafil citrate for the treatment of female sexual arousal disorder: a double blind, placebo controlled study. *J Urol.* 2003;170(6 pt 1):2333-2338.
32. Segraves RT, Clayton A, Croft H, Wolf A, Warnock J. Bupropion sustained release for the treatment of hypoactive sexual desire disorder in premenopausal women. *J Clin Psychopharmacol.* 2004;24(3):339-342.
33. Billups KL, Berman L, Berman J, Metz ME, Glennon ME, Goldstein I. A new non-pharmacological vacuum therapy for female sexual dysfunction. *J Sex Marital Ther.* 2001;27(5):435-441.
34. Wilson SK, Delk JR II, Billups KL. Treating symptoms of female sexual arousal disorder with the Eros-Clitoral Therapy Device. *J Gend Specif Med.* 2001;4(2):54-58.
35. Meston CM, Hull E, Levin RJ, Sipski M. Disorders of orgasm in women. *J Sex Med.* 2004;1(1):66-68.
36. Modell JG, May RS, Kathou CR. Effect of bupropion SR on orgasmic dysfunction in nondepressed subjects: a pilot study. *J Sex Marital Ther.* 2000;26(3):231-240.
37. Rosenbaum TY. Physiotherapy treatment of sexual pain disorders. *J Sex Marital Ther.* 2005;31(4):329-340.
38. Ter Kuile MM, Weijenborg PTM. A cognitive-behavioral group program for women with vulvar vestibulitis syndrome (VVS): factors associated with treatment success. *J Sex Marital Ther.* 2006;32(3):199-213.
39. McGuire H, Hawton K. Interventions for vaginismus. *Cochrane Database Syst Rev.* 2003;(1):CD001760.