

Recognition and Assessment of Sexual Dysfunction Associated With Depression

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Recognition of sexual dysfunction associated with depression or its treatment is critical for patient satisfaction and medication compliance. This report reviews relevant literature related to types of sexual problems, the etiology of sexual dysfunction, prevalence rates, barriers to assessment, and available instruments for evaluating sexual functioning in individuals with depression. Evaluation of sexual functioning should include examination of each phase of the sexual response cycle, with classification of sexual disorders as described in the DSM-IV. Sexual functioning requires both an adequate hormonal milieu and appropriate neurotransmitter functioning. Evaluation of sexual functioning should include a sexual history, current level of sexual functioning, history and current diagnoses of medical and psychiatric illnesses, evaluation of medications and/or other substances taken, indicated endocrine measures, and targeted physical examination. Appropriate evaluation of sexual functioning associated with depression could help reduce the enormous societal costs of this disorder.

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PHASES OF THE SEXUAL RESPONSE CYCLE

Appropriate assessment of sexual functioning begins with an understanding of the phases of the sexual response cycle. As described in DSM-IV, these phases include desire, arousal, orgasm, and resolution.¹ In addition, satisfaction is also important with regard to sexual functioning. The DSM-IV classification of sexual disorders includes disorders of desire, such as hypoactive sexual desire disorder and sexual aversion disorder; disorders of arousal, including female sexual arousal disorder and male erectile disorder; orgasmic disorders, specifically female and male orgasmic disorder; and pain disorders, which include dyspareunia and vaginismus. Each of these disorders can be subtyped as either lifelong or acquired and as generalized or situational. The pain disorders have not specifically been linked to major depression as yet, but problems with desire, arousal, and orgasmic function may all be associated with major depressive disorder.²

A number of sexual problems may be associated with depression or its treatment. These generally include problems with desire, arousal, and orgasm. The resolution

phase occurs passively following orgasm, and problems in this phase have not been identified. Specifically, decreased libido in the phase of desire is found in many depressed patients. Increased sexual desire has not been classified as a specific sexual problem associated with depression. Arousal problems may include inhibited sexual excitement, diminished genital sensation, or erectile dysfunction (defined as difficulty achieving or maintaining an erection) in men; in women, arousal problems typically involve failure to achieve or maintain vaginal lubrication. Delayed orgasm or ejaculation (i.e., taking much longer to achieve an orgasm or at times being unable to achieve orgasm) may occur with either depression or various antidepressant treatments. Premature ejaculation is seldom a problem associated with depression or with antidepressant medications. In fact, some of the antidepressants that delay orgasm may improve sexual functioning in men who experience premature ejaculation prior to treatment.² Sexual satisfaction may be affected by diminished function in a specific phase of the sexual response cycle or by the global decrease in pleasure associated with depression.

THE BIOLOGY OF THE SEXUAL RESPONSE

The current DSM-IV diagnostic classification of sexual dysfunction utilizes a motivational/psychophysiologic model based on 3 of the phases of the sexual response cycle: desire, arousal, and orgasm.¹ Sexual desire is manifested by sexual thoughts and fantasies and interest in participation in sexual activities, and it includes physiologic, cognitive, and behavioral components. Testosterone appears to be the primary sex steroid affecting desire, in

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combination with the neurotransmitters dopamine and serotonin, via the hypothalamus and associated limbic structures. Although testosterone levels have been delineated in men, measurements of circulating testosterone in relation to sexual desire in premenopausal women have been inconclusive.^{3,4} Thus, psychosocial context and conditioning may significantly influence desire.⁵

Sexual arousal is the phase of sexual excitement manifested by pelvic vasocongestion and swelling of the external genitalia. Vasoactive intestinal peptide may mediate autonomic effects on pelvic blood flow during arousal.⁶ Again, given adequate sex steroids, including testosterone in males and estrogen in females, other potential physiologic mechanisms mediating arousal include central dopamine stimulation, modulation of the cholinergic-adrenergic balance, peripheral α_1 -adrenergic agonism, and the presence of nitric oxide.^{7,8}

Orgasm, the process of physiologic release of sexual tension, is manifested by rhythmic contractions of perineal and reproductive organ structures with cardiovascular and respiratory changes. Women have the potential to experience multiple orgasms, since they do not have a postorgasmic refractory period. Understanding of the physiologic mechanism of orgasm is rudimentary and may be related to oxytocin.⁹ Inhibition of orgasm may occur with serotonergic activation postulated to be due to 5-HT₂ stimulation¹⁰ and with α -adrenergic antagonism.⁷

The illness of depression and antidepressant medications may have effects on hormonal functioning. Serotonin-active agents affect the hypothalamic-pituitary axis and therefore might influence gonadotropin-releasing hormone release and potentially estrogen, progesterone, and testosterone levels, subsequently affecting sexual functioning. In addition, antidepressant medications may specifically affect neurotransmitter function. Thus, this complex behavior may be influenced by biological changes; psychological, social, and emotional circumstances; cognitive function; and cultural experiences.

ETIOLOGY OF SEXUAL DYSFUNCTION

The etiology of sexual disorders may be medical, substance induced, or psychosocial/situational or due to a combination of these factors. Primary sexual disorders are quite common in the population. Epidemiologic data from the 1992 National Health and Social Life Survey of 1749 women and 1410 men in the United States who reported having at least one sexual partner in the prior 12-month period indicate sexual dysfunction in 43% of women and 31% of men, with different patterns of sexual dysfunction between genders.¹¹ Women reported that the prevalence of sexual problems decreased with increasing age, except for problems with lubrication and arousal associated with menopause. Younger women described problems with sexual desire and difficulty achieving orgasm.

Men described problems with arousal associated with aging and, to a lesser degree, low desire. In this study, sexual dysfunction was associated with poor physical and emotional health, negative sexual relationship experiences, and a negative sense of overall well-being. Hispanic women reported lower rates of sexual problems than either African American women, who reported lower sexual desire and satisfaction, or white women, who described more sexual pain.¹¹ However, Hispanic women may be less likely to report sexual problems than other ethnic groups, since female college students in a Spanish study to establish the validity and the reliability of the Spanish version of the Changes in Sexual Functioning Questionnaire (CSFQ) reported fewer sexual experiences and less pleasure than U.S. cohorts.¹² A history of sexual trauma also negatively affects sexual functioning. Similar findings were obtained in a postal questionnaire in England^{13,14} and a survey in Denmark.¹⁵ Fifty-two percent of the respondents in the British survey indicated that they would like to receive professional help for sexual problems, but only 10% had received such assistance.

Sexual dysfunction may also be related to psychiatric conditions such as major depression, for which 70% of those affected report diminished libido.¹⁶ Comorbid psychiatric conditions such as eating disorders¹⁷ and histrionic personality disorder¹⁸ may also affect sexual functioning. Women with complaints of premenstrual symptoms reported lower sexual desire, less frequent sexual activity, fewer orgasms, and less satisfaction with orgasms during the late luteal phase than during other phases of the menstrual cycle.¹⁹ Other medical conditions may also affect sexual functioning, including neurologic illness, endocrine disorders, genitourinary conditions, infectious processes, cardiovascular disease, and autoimmune disorders.

A variety of substances may also affect sexual functioning, including psychotropics, nonpsychotropic medications, and drugs of abuse. More than 100 nonpsychotropic medications have been reported to cause sexual dysfunction. The most commonly used include antihypertensives, steroids, and histamine-2 blockers.²⁰ Alcohol and other drugs of abuse may also negatively impact sexual functioning. Antidepressants, particularly selective serotonin reuptake inhibitors, tricyclic antidepressants, monoamine oxidase inhibitors, trazodone, and venlafaxine, have been reported to impair sexual functioning in all sexual phases.¹⁹ The mechanism of these effects may be linked to the mechanism of action of the drugs, including potential hormonal changes, disturbance of the adrenergic-cholinergic balance, peripheral α -adrenergic antagonism, inhibition of nitric oxide, and serotonergic activation.² Three new antidepressants appear to have minimal negative effects on sexual functioning, possibly owing to the unique mechanism of action of each: bupropion,²¹ mirtazapine,²² and nefazodone.²³

Psychological factors such as interpersonal relationships, body image, sexual self-esteem, and prior psycho-

social adjustment may also influence sexual functioning. In combination, the above factors may lead to sexual problems in multiple phases of the response cycle.

ASSESSMENT OF SEXUAL FUNCTIONING

Discussion of sexual functioning with patients is important because sexual functioning may impact their quality of life through relationships and self-esteem. Sexual functioning may also affect compliance with treatment, preventing relapse or recurrence of illness. Increasing problems with sexual functioning may indicate progression or inadequate treatment of underlying medical conditions.

Barriers to Assessment

Patients often do not spontaneously report sexual dysfunction to their physicians because of the very personal nature of sexual behavior or because of shame, fear, or ignorance. Effects of depressive illness on sexual functioning may include negative ruminations, loss of interest or pleasure, or lack of interest in or absence of an ongoing relationship due to social isolation. Attribution of sexual dysfunction to other factors, such as stressors or problems in interpersonal relationships, and the presence of Axis II disorders may also serve to limit reporting of sexual dysfunction. The gender of the patient may also influence spontaneous reporting of sexual dysfunction, with men more likely to report sexual problems than women. Physicians may also hesitate to address the issue of sexual dysfunction with their patients because of discomfort with the topic, failure to ask phase- and gender-specific questions, and lack of knowledge about sexual dysfunction associated with specific illnesses and medications. Interpersonal effects may also influence physicians, such as wishing to avoid appearing intrusive or seductive, assuming infrequent sexual activity is related to advancing age, or fears that such questions will require time not available in a busy practice.²⁴

Another barrier to assessment of sexual functioning is failure to use an adequate and appropriate assessment tool. An assessment instrument for sexual functioning should be gender specific. It should address phase-specific function, be brief, be perceived as nonintrusive by the patient, have the ability to separate illness from medication effects, and monitor changes over time. It is also important to assess premorbid and lifelong sexual function compared with current state of functioning.²⁴

A review of the available instruments for assessing sexual functioning shows that 4 meet most of the criteria listed above. These tools are the Arizona Sexual Experiences Scale (ASEX),^{25,26} the Changes in Sexual Functioning Questionnaire Clinical version (CSFQ-C),^{27,28} the Derogatis Interview for Sexual Functioning-Short Report (DISF-SR),²⁹ and the Rush Sexual Inventory (RSI)^{30,31} (Table 1).

Table 1. Comparison of Assessment Instruments for Sexual Function^a

Scale	ASEX	CFSQ-C	DISF-SR	RSI
No. of questions	5	14	25	29 M/18 F
< 10 min	Yes	Yes	No	Yes
Validated	Moderate	Good	Good	In progress
Measures change	Yes	Yes	No	Yes
Explicit/intrusive	No	No	Yes	Yes
Likert scale	Yes	Yes	Yes	Only 5 items

^aAbbreviations: ASEX = Arizona Sexual Experiences Scale, CSFQ-C = Changes in Sexual Functioning Questionnaire, DISF-SR = Derogatis Interview for Sexual Functioning-Short Report, RSI = Rush Sexual Inventory.

The ASEX consists of 5 questions focusing on specific elements of sexual activity: sexual interest, arousal, lubrication/erection, orgasm, and satisfaction. It may be used in heterosexual or homosexual populations, regardless of the availability of a sexual partner. Global scores ≥ 19 or individual question responses of ≥ 5 indicate sexual dysfunction, and may be used to monitor change in function over time.^{25,26}

The CSFQ-C version utilizes 14 questions to measure sexual activity in 5 domains: sexual pleasure, sexual desire/frequency, sexual desire/interest, arousal, and orgasm. Sexual activity is defined initially, including intercourse, masturbation, and sexual fantasy, so that the patient is not required to report specific sexual behaviors, since preference in sexual activity is not related to function. Global scores for men of ≤ 47 and for women of ≤ 41 are indicative of sexual dysfunction. Cutoff scores for the subscales indicate the affected phases of the sexual response cycle.^{27,28} Measurement of change in sexual functioning over time associated with change in treatment³² and across the menstrual cycle¹⁸ has been demonstrated. The instrument has also been translated into Spanish and has been found to have good validity in a Spanish population.¹²

The DISF-SR was designed to measure quality of sexual functioning via 25 questions in 5 constructs: sexual cognition, arousal, sexual behavior and experiences, orgasm, and sexual drive. While the DISF-SR is a useful tool, questions that refer to frequency of specific sexual behaviors may be perceived as intrusive by patients.²⁹

The RSI measures sexual functioning over time, utilizing 29 questions in men and 18 questions in women.^{30,31} Questions about the frequency of specific sexual behaviors, again, may be perceived as intrusive, and validity studies have not yet been published. Five items utilize a visual analogue scale; the remainder require yes-no responses, which limit reporting of dysfunction that is not clear-cut to the patient.

Strategies to overcome barriers to discussion of sexual functioning include normalizing the issue for the patient by the physician. This can be initiated by the clinician's broaching the subject with a discussion of the frequency of

Table 2. Evaluation of Sexual Dysfunction

1. Sexual history
2. Psychiatric/medical history and current conditions
3. Evaluation of current level of sexual functioning
4. Notation of medications and drugs of abuse
5. Indicated laboratory measures
6. Targeted physical examination

sexual disorders in the population or associated with specific treatments. Discussion should follow a medical model and evaluate each phase of the sexual response cycle. Baseline measures of sexual functioning should be obtained when the diagnosis of major depression is made. In addition, it is important to note prior psychosexual adjustment and whether the current level of sexual functioning represents a change from baseline. Assessment of sexual functioning associated with any changes in the illness, treatment, or psychosocial situation should also be obtained over time. Use of a screening tool to identify problem areas requiring further discussion may also serve as an introduction of the topic to the patient. Discussions may refer generally to sexual activity, rather than seeking details of specific behaviors in a way that a patient might view as intrusive.

Evaluation of sexual dysfunction should include elements of the following: (1) sexual history and evaluation of the present level of sexual functioning; (2) documentation of medical and psychiatric history and current diagnoses; (3) identification of all substances that might contribute to sexual dysfunction (medications, alcohol, illicit substances); (4) endocrine measures as indicated, including free and total testosterone, thyroid function tests, hemoglobin A_{1C}, and prolactin levels, and, in women, estradiol, follicle-stimulating hormone, and luteinizing hormone levels; and (5) a targeted physical examination that may include a neurologic or genitourinary examination as appropriate (Table 2).

CONCLUSIONS

Sexual disorders are common in the population. They may be primary or secondary to psychiatric or medical conditions, substances, or psychosocial changes. Depression is associated with negative effects on sexual functioning. Antidepressant medications may cause sexual dysfunction affecting specific phases of the sexual response cycle. As a result, workup of sexual dysfunction must be individualized and should include a sexual, psychiatric, and medical history as well as an evaluation of the current level of sexual functioning. Assessment of potential substances contributing to sexual dysfunction, laboratory studies, physical examination, and evaluation across time as the illness and treatment change is advised. Direct but nonjudgmental evaluation of sexual function associated with depressive illness or its treatment can only serve to

enhance the patient's quality of life and the potential for continuing compliance with indicated treatment.

Drug names: bupropion (Wellbutrin), mirtazapine (Remeron), nefazodone (Serzone), trazodone (Desyrel and others), venlafaxine (Effexor).

Disclosure of off-label usage: The author has determined that, to the best of her knowledge, no investigational information about pharmaceutical agents has been presented in this article that is outside U.S. Food and Drug Administration–approved labeling.

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