

14

Evaluation of Female Orgasmic Disorder

Stuart Brody

Epidemiology (Incidence/Prevalence)

An important review paper on disorders of orgasm in women noted that orgasm disorder is second only to hypoactive sexual desire disorder in women's sexual disorder prevalence [1]. A recent meta-analysis of studies (limited to English language publications published between 2000 and 2014) on the prevalence of female sexual dysfunction among premenopausal women reported an overall female orgasmic disorder prevalence of 20.9%, increasing to 25.7% when a statistical model meant to adjust for the quality of studies was applied to the analysis [2]. That meta-analysis noted substantial variability in the diagnostic criteria used for ascertaining female orgasmic disorder (including variability in the qualifying period for prevalence) and also reported that prevalence of female orgasmic disorder in Africa was highest, followed by Asia and the Middle East, with the lowest nominal prevalence in Europe and the non-European West. Optimal nationally representative sampling was used in only a minority of studies included in the meta-analyses, which raises issues of selection bias and participation bias in many studies in the review, as well as other studies pertaining to sexual function and sexual dysfunction that were not part of the review. Interestingly, the authors of the meta-analysis concluded that studies of the prevalence of orgasmic dysfunction funded by pharmaceutical companies tended to be of higher quality than other studies [2].

The meta-analysis did not differentiate between orgasm triggers (specifics of the sexual behavior intended to induce orgasm; see discussion of the Sexual Behavior Questionnaire in the Scales section for a list of major orgasm triggers), and unfortunately many, perhaps most, studies also fail to differentiate between orgasm triggers. As should become clear in this chapter, there are substantial psychological, interpersonal, and physiological differences between women's various sexual behaviors and corresponding orgasm triggers [3]. To be optimally supportive of women's health in sexual and

other health and interpersonal realms requires respect for these differences and support for the specific sexual behaviors and orgasm triggers most associated with optimal health and intimate relationship quality [4].

One study that did differentiate the orgasm trigger was a large nationally representative survey of Czech women over age 15 [5]. That survey found that only 21.9% of the women had never had a vaginal orgasm (women's orgasm triggered directly by penile–vaginal intercourse, without concomitant clitoral masturbation by either partner for the orgasm), 29.7% of the women had vaginal orgasm consistency (percentage of penile–vaginal intercourse occasions resulting in vaginal orgasm) of 1–25%, 21.7% of the women had vaginal orgasm consistency of 26–50%, 15% of the women had vaginal orgasm consistency of 50–75%, and 11.7% of the women had vaginal orgasm consistency of 75–100% [5]. In another study of a nationally representative sample of Czech women aged 35–65 years, the vaginal orgasm consistency rates were somewhat greater: only 17.0% of the women had never had a vaginal orgasm, 22.3% of the women had vaginal orgasm consistency of 1–25%, 24.4% of the women had vaginal orgasm consistency of 26–50%, 21.1% of the women had vaginal orgasm consistency of 50–75%, and 15.0% of the women had vaginal orgasm consistency of 75–100% [6]. The greater vaginal orgasm consistency rates observed in the older group might reflect some combination of experience, maturity, and cohort effects. Such cohort effects can be due to changes over time in the culture or other aspects of the environment, education, modal experience, nutrition, and other factors (examples of changes over time in the information that is received regarding sex include the widespread availability of pornography over the Internet and promotion of masturbation in many forms of sex education). In the American sample of women with intact marriages collected by Kinsey and colleagues in earlier decades of the twentieth century [7], penile–vaginal intercourse lasting 1–15 min resulted in women's orgasm always or nearly always

(90–100% consistency) for the majority of the women. For the women who usually had penile–vaginal intercourse lasting 16 min or longer, two-thirds of the women reported penile–vaginal intercourse orgasms always or nearly always (and only 5.1% of the women in that group reported never having had a penile–vaginal intercourse orgasm) [7]. The issues of the duration of both penile–vaginal intercourse and foreplay will be discussed later in this chapter, but the limiting factor in adequate duration of penile–vaginal intercourse might often be the functioning of the male partner.

Etiology

Genetic and Prenatal Factors

There are indications of genetic and other prenatal contributions to likelihood of female orgasmic disorder [1, 8], as well as to specifically the likelihood of impaired vaginal orgasm [9]. The heritability of women's orgasm from penile–vaginal intercourse has been estimated at 34%, and the heritability of women's orgasm from masturbation has been estimated at 45% [10]. Of note, the latter study found no difference in the proportion of women (monozygotic and dizygotic twins that constituted their research sample) who infrequently or never reached orgasm triggered by penile–vaginal intercourse as compared to orgasm triggered by masturbation [10].

One study of potential prenatal influences on vaginal orgasm [9], as differentiated from other orgasm triggers, relied upon a novel anatomical marker: the tubercle of the upper lip. The presence and shape of the tubercle of the upper lip is likely largely determined during the fetal period and might be associated with more complete prenatal brain development. The presence of a clearly defined tubercle of the upper lip was found to be positively related to vaginal orgasm but was not associated with other orgasm triggers [9].

Family and Other Experiential Factors

In a large sample of Czech women, the majority of women were normally coitally orgasmic (in at least 70% of coital encounters). In statistical analyses, the normally coitally orgasmic majority of women were compared with the women who were rarely (fewer than 30% of encounters) coitally orgasmic, and the latter group was divided into those with and without the presence of sexual distress [11]. Compared with the rarely orgasmic group, the normally coitally orgasmic women were more educated, less likely to have three or more siblings, more likely to be a first-born child, more likely to report a happy childhood, more likely to have had an earlier menarche, more likely to have had an earlier first penile–vaginal intercourse (albeit with a mean age of 18.7 years), more likely to have had more premarital sex partners (albeit with a mean of only 1.3 premarital sex part-

ners), more likely to be having penile–vaginal intercourse at least twice weekly, and less likely to have penile–vaginal intercourse initiated solely by the husband (i.e., they were more likely to either initiate penile–vaginal intercourse themselves or to jointly initiate penile–vaginal intercourse with the husband). The sexually distressed group was more likely to have lost their mother before age six, more likely to have lost their father before age six, more likely to have a higher number of somatic and psychological symptoms, more likely to report a decline in coital orgasm over time, more likely to report that their husband had lower levels of sexual desire, more likely to report that their husband had problems with sexual potency, and less likely to report a happy marriage. The authors of this important study [11] inferred that biological as well as developmental and psychological factors play a role in difficulties in being coitally orgasmic and that being sexually distressed reflects a different group of psychological problems.

The finding in the Czech sample regarding first-born women being more coitally orgasmic [11] is consistent with the findings of earlier studies in other countries [12]. However, a British twin study found that although there were significant genetic and non-shared environmental influences on orgasm, there was little or no role for shared environmental factors, including religion or social class [10].

Women reporting adequate contact with their father in childhood had greater penile–vaginal intercourse orgasm consistency. In contrast, their contact with their mother was not a significant predictor of penile–vaginal intercourse orgasm consistency [12]. These differential associations suggest that women's early experiences with their father shape their sexual development, their sense of men, and capacity for fuller appreciation of penile–vaginal stimulation. It is also possible that there is a role for genetic factors affecting both father–daughter interaction and the daughter's eventual penile–vaginal intercourse orgasm consistency.

In a large representative sample of Czech women, vaginal orgasm consistency was associated with women having been educated in their youth that the vagina is a source of women's orgasm, and the authors observed that a purely clitoral focus (in any formal or informal sex education or in the course of sexual behaviors) can undermine the capacity for vaginal orgasm [5].

Women reporting a history of being sexually abused are more likely to report orgasmic dysfunction than women who were not abused [13, 14], and there is some indication that orgasm might be more affected than other aspects of sexual function by a history of sexual abuse [14].

Age and Parity

In DSM-5, it is stated that, generally, menopausal status is considered not to be associated with orgasmic disorder [15]. In contrast to that statement in DSM-5, some large-scale

studies suggest increased rates of orgasm difficulties at older ages [16, 17]. However, it is unclear to what extent those age associations are due to health problems, impaired partner functioning, or possible menopause-associated arousal difficulties. In a Turkish study of women who were not depressed, poorer orgasmic function was associated with being postmenopausal [18]. Of note, some studies have reported that women between 40 and 45 years of age might have the lowest rate of orgasmic dysfunction of any age group [19].

A Turkish study of 40 women found a decline in orgasmic function (as measured by the orgasm domain of the Female Sexual Functioning Index; FSFI) during the third trimester of pregnancy [20]. A British study found that 14% of 796 primiparous women reported difficulty having an orgasm in the year before becoming pregnant, increasing to 33% of the women in the 3 months following childbirth, and recovering partly to 23% at about 6 months after delivery [21]. Although the study did not provide details of the association of orgasm difficulty with mode of delivery, the study did report that dyspareunia was most common among women who had a forceps-assisted vaginal delivery, followed by normal vaginal delivery, with the lowest rate among women who had cesarean delivery [21]. Other studies have obtained mixed results of the effects of parity on orgasmic function.

Intimate Relationship Factors

In a multivariate study, when genetic influences were statistically controlled, relationship satisfaction was shown to be an important correlate of female orgasmic dysfunction [22]. Similarly, marital difficulties were found to be an important correlate of female orgasmic dysfunction in previous studies [23]. Interestingly, in a multivariate analysis, men's sexual satisfaction score was significantly predicted by greater penile–vaginal intercourse frequency and vaginal orgasm of their female partners [24]. There might well be bidirectional effects between relationship satisfaction and penile–vaginal intercourse (frequency and orgasm): women who are more satisfied in their relationship with their partner might be more motivated to have more frequent penile–vaginal intercourse and be more orgasmic with their partner. Similarly, more rewarding penile–vaginal intercourse could lead to greater intimate relationship satisfaction. Similarly, there might be bidirectional effects for the other aspects of satisfaction (life in general, sex life, and personal mental health) associated specifically with penile–vaginal intercourse frequency, vaginal orgasm, and male partner erectile function [6, 25–27].

Scheduling regular sexual activity has itself been found to improve women's orgasm function, which might be due in part to reducing avoidance behavior [28].

In a nationally representative sample of Czechs aged 35–65 years, mean scores on the IIEF-5 (International Index of Erectile Function) measure of erectile function were simi-

lar when the scale was completed by men or by their female partner, and the erectile function scores were similarly well correlated with sexual satisfaction, relationship satisfaction, own mental health satisfaction, and life satisfaction for both men and women [26]. Vaginal orgasm consistency is associated with better erectile function [26], which is not surprising, given that adequate erectile function is required for adequate vaginal stimulation during penile–vaginal intercourse. Similarly, in another study (which did not differentiate vaginal orgasm), women whose male partners had erectile dysfunction were less likely to experience orgasm, but for women in that group, orgasm likelihood was improved when the affected male partners were taking a phosphodiesterase type 5 (PDE5) inhibitor for ameliorated erectile function [29].

When presented with the major theoretical models of women's sexual response cycle, women who endorsed a model of progression from excitement/arousal to plateau and orgasm (perhaps including preexisting desire) as representing their own experience had greater FSFI orgasm domain scores and less likelihood of sexual dysfunction than women who endorsed a model in which, rather than necessarily having their own spontaneous sexual desire, women may respond to their partner's desire. The latter group still had greater FSFI orgasm domain scores and less likelihood of dysfunction than women who endorsed none of the presented models of women's sexual response cycle [30, 31].

In a nationally representative sample of Czech women, women's partnered orgasm consistency was associated with duration of penile–vaginal intercourse, but not (in multivariate analyses simultaneously considering both durations) duration of foreplay [32]. This is an important research finding, given the prevalent assertion in sex education and sex therapy that foreplay duration and clitoral focus are supposedly so important for women's orgasm. These findings from the nationally representative Czech sample are also consistent with the (nonrepresentative) American data collected by Kinsey and colleagues, in which foreplay also did not play a major role in women's coital orgasm: the prevalence of women having coital orgasm on 40–100% of occasions ranged from 76.5% for foreplay of 1–10 min to 83.5% for foreplay of greater than 20 min [7].

In a sample of Portuguese women, orgasm from penile–vaginal intercourse was associated with Perceived Relationship Quality Inventory components of satisfaction, intimacy, passion, love, and global relationship quality [33]. In contrast, noncoital partnered sexual behaviors were uncorrelated with the Perceived Relationship Quality Inventory components, and masturbation was associated with both less love and less penile–vaginal intercourse orgasm [33]. In a multivariate analysis of Czech couples' sexual behavior and intimate relationship function, sexual compatibility was independently significantly predicted by greater frequency of penile–vaginal intercourse and greater vaginal orgasm consistency [24].

In the same Czech study, women's sexual satisfaction was significantly predicted by greater vaginal orgasm consistency, greater frequency of the partner providing genital stimulation, and adversely with masturbation [24]. Concordance of the two partner's estimates of vaginal orgasm consistency (hence, men's discernment of their partner's vaginal orgasm) was associated with better dyadic adjustment [24]. Of note, women who often fake orgasm are more likely to have a sexual dysfunction than other women [34].

Metabolic, Nutritional, Substance Use, and Exercise Factors

Women's larger waist (even within the normal, non-obese range) was associated with both lesser likelihood of vaginal orgasm and more likelihood of masturbation [35]. In another study, women's higher body mass index was associated with poorer FSFI orgasm scores (due to the shortcomings of the FSFI, women are not allowed to differentiate vaginal orgasm or coital orgasm from other orgasm triggers) [36]. There might be several pathways underlying the association of impaired orgasm with indices of higher levels of body fat. Both cross-sectional and longitudinal studies have found that adverse characterological factors and psychopathology (including depression, anger, hostility, and less conscientiousness) lead to poorer food choice and to the accumulation of body fat [35, 37, 38]. It was also found that higher levels of personal importance of "junk food" were associated with more use of immature psychological defense mechanisms [39] (see below for a discussion of these psychological processes). Greater levels of body fat can also lead to psychophysiological and physiological dysregulation, which might adversely affect orgasmic function. Experimental animal studies determined that when female mice were fed a diet which led to obesity, they developed both functional sensory nerve conduction deficits and tactile allodynia; this finding suggests that greater body fat levels might reduce pleasurable aspects of penile–vaginal intercourse as well as perhaps increasing the aversiveness of intimate contact [37]. In the context of tactile sensitivity issues, it is noteworthy that women's greater tactile sensitivity is associated with both greater past month likelihood of vaginal orgasm and greater past month penile–vaginal intercourse frequency [40]. It has also been found that women with larger waists tend to have male partners with poorer erectile function (an effect not attributable to age of either partner) [37].

Exercise has been found to decrease depression [41, 42], with effect sizes of the benefits of exercise not significantly different from antidepressant medication or psychological therapy. Exercise is positively correlated with women's orgasm function [43], and at least one form of exercise (Pilates) has been shown to improve women's orgasm function [41].

In an Italian study [44] (which excluded even moderately heavy drinkers, as opposed to the higher alcohol consumption ranges used in a study of British women's personality, alcohol consumption before sexual activity, sexual behaviors, and orgasm function [45]), women who were moderate drinkers of alcohol (11–20 drinks/month) had greater vaginal orgasm incidence (but not greater clitoral orgasm incidence) than women who were lighter drinkers or nondrinkers (71% vs. 52% and 50%) and also had greater penile–vaginal intercourse frequency than women who were lighter drinkers or nondrinkers. Despite the Beck Depression Inventory scores being within the normal range (hence limited statistical variance making detection of effects more difficult), Beck Depression Inventory scores were inversely associated with women's orgasm frequency and intensity, but no association was found between genital vascular function and alcohol consumption [44]. Thus, it is possible that psychological factors (leading to openness to consume moderate amounts of alcohol and/or psychological effects of moderate alcohol consumption) rather than genital blood flow enhancement accounted for the association of moderate alcohol consumption with greater vaginal orgasm incidence.

Some studies which did not differentiate vaginal orgasm from clitoral orgasm found no association between alcohol consumption or other substance use (in a normal population) and orgasm function [46, 47]. However, it might be that an insufficient number of pathological substance (including alcohol) users were included, thus making it difficult to detect statistical significance. In a study in the American city of St. Louis, an association was observed between inhibited orgasm and both alcohol and cannabis use (however, the report did not make it completely clear if that result applied to women or only to men) [48].

In an Italian study, vaginal orgasm was normally experienced by 65% of nonsmokers of cigarettes, 57% of light smokers, and 43% of the heavy smokers [49].

Heroin users report that the use of heroin decreases their orgasm likelihood [50], which is consistent with orgasm being impaired by opiate activity.

Physiological, Psychophysiological, and Hormonal Factors

Physiology and psychology interact to affect the ability to achieve orgasm. In the case of functional muscle-skeletal variations, capacity for vaginal orgasm might be discernable from observing a woman's spontaneous gait. Sexologists trained in the functional–sexological approach to sex therapy observed videotapes of a small sample of healthy young Belgian women and judged the women's orgasmic capacity based solely on observing the women's gait [51]. The research participants were all blind to the experiment

hypotheses, and half of the sample had a history of vaginal orgasm. History of vaginal orgasm was assessed correctly by the raters in a statistically significant 81.25% of women. Vaginally orgasmic women had a gait that was physiologically normal for women: the healthy gait was unblocked in the normal pelvic rotation movements and additionally described by the researchers as more energetic, fluid, sensual, and free. Observer ratings of whether the woman was vaginally orgasmic were unrelated to the women's reports of clitoral orgasm with a partner, and the women's history of clitoral orgasm was unrelated to their history of vaginal orgasm. The association between specifically vaginal orgasm and a more natural gait was interpreted as being due to some combination of chronic muscle blocks or excessive muscle flaccidity impairing sexual function by impairing feeling and the discharge of sexual tension (thus, a direct mechanism) and to the psychological factors that led to suboptimal pelvic muscle tone also impairing vaginal orgasm (thus, a clinical sign or correlate) [51].

Studies of the association between greater pelvic floor muscle strength and women's orgasm function have led to mixed results [52, 53]. In a study of 29 patients, abdominal–pelvic adhesions were reported to underlie some cases of women's orgasmic dysfunction, and the impairment attributed to the adhesions was shown to be responsive to a manual physical therapy technique [54].

Women who had a coital orgasm in the past month had greater tactile sensitivity (as measured at the finger), but other orgasm triggers were not associated with tactile sensitivity (a similar pattern was observed for frequency of sexual activities) [40]. In an earlier study that did not differentiate coital orgasm from orgasm triggered by other partnered sexual activities, no association of finger sensitivity with orgasm incidence was detected [55].

Elevated resting levels of prolactin are associated with impairment of many aspects of sexual function, including orgasm. Such elevated prolactin levels might be normal (during lactation) or caused by prolactin-secreting tumors or as a side effect of typical antipsychotic medications [56]. Recent research with a small sample of women suggests that monomeric prolactin and total prolactin levels, but not macroprolactin levels, are associated with impaired orgasm function scores [57] (macroprolactin levels were associated with impaired desire). The mechanism by which prolactin inhibits sexual function might involve not only the well-known inverse relationship with central dopaminergic tone but might also involve peripheral mechanisms [56]. The likely functions of the postorgasmic prolactin surge are to generate some degree of satiety (decreasing immediate desire) and satisfaction and to rebalance central dopaminergic tone. When women's postorgasmic serum prolactin surges following penile–vaginal intercourse were examined in relation to perceived quality of orgasm and resulting sexual satisfaction,

it was found that there were strong correlations between prolactin changes and both orgasm quality ($r = 0.85$) and sexual satisfaction ($r = 0.75$). Thus, postorgasmic prolactin surges provide an objective index of orgasm and orgasm quality [56]. Not only did penile–vaginal intercourse orgasm increase prolactin levels greatly, but multiple orgasms led to even greater prolactin increases [56]. For both men and women, orgasm triggered by penile–vaginal intercourse led to an approximately 400% greater prolactin surge compared with orgasm from masturbation (compared with a control condition) [58], suggesting not only one mechanism for penile–vaginal intercourse being more satisfying than masturbation but also perhaps one mechanism by which penile–vaginal intercourse is associated (perhaps causally) with indices of better psychological and psychophysiological health and one mechanism by which masturbation is often associated with indices of poorer psychological and psychophysiological health [3, 58].

Experimental induction of hypogonadism in healthy young women (with depot leuprolide acetate) resulted in a decline in quality of orgasm [59]. Multiple studies with postmenopausal women have found that treatment with testosterone can improve women's orgasm function [1, 60]. This benefit might be due to replacing the testosterone levels that existed before menopause, as testosterone is involved in women's sexual desire, arousal, and orgasm [61]. It has also been observed that menopause-related declines in estrogen might weaken pelvic muscles in some cases [1]. In the case of vulvar or vaginal atrophy attributable to menopause, there can be impairment of several aspects of sexual function, and the selective estrogen agonist/antagonist ospemifene has been shown to improve orgasm function [62].

Personality, Psychopathology, and Iatrogenic Psychopharmacological Issues

In a large sample of women, difficulty having an orgasm during penile–vaginal intercourse was found to be associated with the personality traits of emotional instability (neuroticism), introversion, and being less open to new experiences [63].

Disturbances of the capacity for emotional attachment can be reflected in sexual behavior, including orgasm function. Anxious attachment (involving preoccupations about abandonment) was found to be associated with poorer vaginal orgasm consistency but also with higher frequency of orgasm from vibrator use or receptive anal intercourse. Avoidant attachment (avoidance of closeness in relationships) was found to be associated with higher frequency of orgasm from vibrator use [64]. Thus, secure attachment was associated with better vaginal orgasm consistency and with not using a nonliving object to trigger orgasm.

In a large representative sample of Swedish women, those who had experienced a vaginal orgasm were more satisfied with their mental health than the minority of women who had not experienced vaginal orgasm (regardless of whether the women who had not experienced vaginal orgasm had experienced clitoral orgasm) [27].

In a longitudinal study of Swiss women, orgasmic difficulties were associated with a broad range of psychopathological traits, including anxiety, depression, hostility, obsessive-compulsive features, paranoid ideation, psychoticism, and somatization [65]. Other research studies also found that anxiety and depression were associated with women's orgasmic difficulties [23]. Women's poorer orgasm consistency during penile-vaginal intercourse was also found to be associated with a higher level of neurotic symptoms and with some indications of unstable gender identity [12].

One important link between personality traits and psychopathology is the adaptive level of psychological defense mechanisms that a person uses. Psychological defense mechanisms are processes largely outside of conscious awareness and therefore could be termed either unconscious or implicit, depending on theoretical orientation. Psychological defense mechanisms serve to reduce distress caused by emotional conflict. Maladaptive psychological defense mechanisms involve a distortion of reality and/or impairment of awareness, and they are associated with a variety of indices of poorer mental health and interpersonal relatedness, psychological immaturity, lesser ability to relate intimately with the opposite sex, lack of emotional awareness, and with a variety of psychiatric disorders [3, 66]. Because of their association with some of the normal processes found in small children (as well as with more pathological mechanisms) and the inference that adverse events in childhood can impair the ability to progress to more adaptive and mature levels of emotional development and emotion regulation, maladaptive psychological defenses are also termed immature [3, 66]. Originally a psychodynamic construct, the concept of psychological defenses and their level of adaptiveness or maturity, has become much less bound to a specific theoretical orientation. The previous edition of the Diagnostic and Statistical Manual of the American Psychiatric Association (DSM-IV) included the defensive functioning scale (with seven levels of adaptiveness and some useful definitions) as a proposed axis for further study [67]. As is common with the sometimes arbitrary changes of fashion found in subsequent editions of DSM, psychological defenses are mentioned far less in DSM-5 (in which immature defense mechanisms as such are mentioned in the context of dissociative disorders) [15]. In a Portuguese sample [66], vaginal orgasm was associated with less overall use of immature psychological defense mechanisms and with less use of the specific component immature defenses of dissociation, somatization, displacement, autistic fantasy, devaluation,

and isolation of affect. Orgasm triggered by clitoral stimulation or by clitoral masturbation (by either partner) concurrent with penile-vaginal intercourse stimulation was not associated with less use of immature defense mechanisms and was actually associated with more use of some immature defense mechanisms. Further analyses revealed that both any masturbation orgasm in the past month and less vaginal orgasm consistency made independent significant contributions to the statistical prediction of immature defense mechanism scores. Similarly, the use of clitoral masturbation by either partner for penile-vaginal intercourse orgasm and lack of any vaginal orgasm made independent significant contributions to the statistical prediction of immature defense mechanism scores. Women who did not have vaginal orgasms had immature defense mechanism scores comparable to those of outpatient psychiatric patients (with diagnoses of depression, social anxiety disorder, panic disorder, and obsessive-compulsive disorder). The results of the study were not confounded by the bias that could be caused by a tendency to distort information in what some people consider a socially desirable manner (social desirability responding) [66]. A replication of this study in another country obtained comparable results: in a sample consisting primarily of British women [45], more use of immature psychological defense mechanisms was associated with lesser vaginal orgasm consistency but also with having an orgasm from clitoral masturbation (by either partner) during penile-vaginal intercourse and with greater frequency of masturbation orgasm. Immature psychological defense mechanisms also statistically explained the association between greater quantity of alcohol consumed before sex and both lack of vaginal orgasm and greater frequency of other sexual behaviors [45]. Of note, the range of alcohol consumed by the British women was far greater than in the aforementioned Italian study of at most moderate drinkers [44], so in the British sample, the higher levels of alcohol consumption might be unhealthy levels. Another study of Dutch women [40] found that women who had a penile-vaginal intercourse orgasm (not explicitly differentiating vaginal orgasm) in the past month, as well as women who ever had a penile-vaginal intercourse orgasm, made less use of immature defense mechanisms. However, in that study, other orgasm triggers were not associated with immature defense mechanisms [40].

Studies have found that depression is associated with masturbation in women and that women with a history of depression have a greater desire to masturbate (but not a greater desire to have penile-vaginal intercourse) than do women without a history of depression [68]. In a sample of mostly British women, poorer emotion regulation traits (use of immature psychological defense mechanisms) were associated with greater frequency of engaging in masturbation, greater frequency of desire to engage in masturbation, and lesser frequency of desire to engage in penile-vaginal intercourse [68].

In a study examining the relationship between sexual behavior, psychological defense mechanisms, and cognitive distortions leading to exaggerated risk perception related to penile–vaginal intercourse, a sample of Scottish women were asked to estimate the total number of women who died from AIDS in Scotland nominally as a result of heterosexual transmission in the United Kingdom from a partner not known to be an injecting drug user, bisexual, or infected through transfusion [69]. The average participant's estimate was 226,000% greater than the official data (the official data itself is likely to overestimate the number in this risk category [69]), and women providing relatively lower estimates made less use of immature psychological defense mechanisms and also had lower frequency of orgasms from clitoral masturbation during penile–vaginal intercourse and from vibrator use. The results imply that people who perceive that “heterosexual transmission” (an unclear term that fails to differentiate penile–vaginal intercourse from anal intercourse [3]) was responsible for many AIDS deaths have poorer psychological functioning and might be less able to respond fully to penile–vaginal intercourse.

In a study of Czech women, a control group of women was compared to groups of women with diagnoses of schizophrenia, bipolar disorder, neurosis, and anorexia nervosa with regard to their experience having had an orgasm during penile–vaginal intercourse. The researchers found that all the clinical groups except the bipolar patients had lower rates of coital orgasm than did the control group [70]. In another Czech study, women diagnosed with neurotic disorders had lower rates of orgasm during penile–vaginal intercourse, but they did not differ from a control group in their likelihood of orgasm triggered by direct clitoral stimulation [71].

Obsessive–compulsive disorder and histrionic personality disorder are also associated with impaired orgasm in women [72]. Studies have also indicated that women with antisocial personality disorders have a higher rate of orgasm dysfunction than do other women [48] and that women with a history of prostitution (who have elevated rates of antisocial and borderline personality disorders) have an elevated rate of impaired orgasm specifically during penile–vaginal intercourse [73, 74].

In a review of issues related to psychiatric disorders and sexual dysfunctions, Waldinger [72] noted that both the disorders themselves, as well as at least some medications used to treat the disorders, can impair sexual function, including women's orgasm. Selective serotonin reuptake inhibitors (SSRIs) are especially notorious for impairing many aspects of sexual function, including women's orgasm. However, other classes of antidepressant medication also carry a risk of causing orgasm impairment, with the exceptions (at a group level) of bupropion, moclobemide, and agomelatine and perhaps mirtazapine, vortioxetine, and amineptine. In some case report studies, adverse effects (including genital anesthesia)

of selective serotonin reuptake inhibitors persisted long after discontinuation of their consumption. In a recent study, the SSRI escitalopram did not differ significantly from the supplement S-adenosyl-L-methionine or even placebo with regard to the alleviation of depression, but escitalopram was associated with a significantly higher rate of anorgasmia as an adverse effect [75]. Of course, medication effects can in some cases be a result of interaction of the medication with personality and/or other genetic effects. For example, in a large sample of persons taking the selective serotonin reuptake inhibitor citalopram, orgasmic dysfunction was more likely in those with single nucleotide polymorphisms in glutamatergic genes (GRIA1), with effects also noted for some serotonergic genes [76]. Typical neuroleptic medications given to schizophrenics can impair orgasm and other aspects of sexual function, an effect which is likely due in part to the medication increasing prolactin levels and dopamine blockade. Atypical antipsychotics might carry less risk of orgasm impairment. Waldinger also reviewed studies indicating that adverse sexual effects of psychiatric medication were a major reason for noncompliance with medication [72].

Nonpsychiatric Medical Conditions and Iatrogenesis

Orgasm impairments associated with diseases and medical conditions can be due to any combination of the disease process per se, the treatments, the psychological and interpersonal consequences of the disease or treatment, and perhaps shared causal pathways (although this latter possibility has not been adequately studied). A recent review [50] noted the following medical conditions and treatments as being among the risk factors for women's orgasmic difficulties: hypertension (and antihypertensive medications, which might be a greater risk factor than hypertension per se [23]), heart disease (mixed findings in various studies), thyroid disorders, arthritis, spinal cord injury, multiple sclerosis, obesity, obstructive sleep apnea, fibromyalgia, and stress urinary incontinence. Women with urinary incontinence often have impaired orgasmic function but have been shown to respond to physical therapy and pelvic floor exercises with improved orgasm function [77]. Renal dysfunction (especially when requiring hemodialysis or transplant) is associated with a very high rate of orgasm dysfunction, as well as with a high rate of depression [1]. The presence of Parkinson's disease and markers of its progression are associated with impairment of women's orgasm [78]. Breast cancer treatment has been associated with impaired orgasm, and recent studies indicated that when treatments were compared, women who were treated with breast conserving treatment had less orgasmic dysfunction than women who had a mastectomy [79] and that intermediate orgasm function results were noted for women who had reconstruction at the time of mastectomy

[80]. Similarly, there might be less risk of orgasm impairment when nerve-sparing approaches are used in the treatment of cervical cancer, rather than radical hysterectomy [81]. Even for women with complete spinal cord injuries, orgasm might still be possible because deep vaginal–cervical stimulation (but not clitoral stimulation) conveys signals to the brain via the vagus nerve [82, 83].

Pathophysiology

Female orgasmic disorder can involve disruption of any of the many physiological, psychophysiological, and/or psychological processes involved in orgasm.

Although some women are capable of orgasm from stimulation of nongenital sites (and in some cases from imagery alone) [84], in most cases, orgasm results from clitoral and/or vaginal stimulation. However, vaginal and clitoral stimulation have different neurophysiological pathways, and orgasms triggered by vaginal versus clitoral stimulation also have different psychophysiological, psychological, and interpersonal correlates.

Clitoral stimulation signals are transmitted via the pudendal nerve to the spinal cord and then the brain, but vaginal stimuli (including deep vaginal stimulation of the cervix) are additionally transmitted via the pelvic nerve, pudendal nerve, and hypogastric nerve [3, 82, 85]. There is also evidence that deep vaginal–cervical stimulation (but not clitoral stimulation) sends signals to the brain via the vagus nerve (hence, not relying on the spinal cord) [82, 83]. At the level of the brain, stimulation of the deep vagina and cervix, shallow vagina, and clitoris activate different regions of the somatosensory cortex (there is also a region of overlap) [86].

In addition to spinal and supraspinal circuits, dysregulation of central and peripheral neurotransmission mechanisms (including serotonergic and noradrenergic mechanisms) can be involved in impaired orgasm [87].

Resting heart rate variability is an index of parasympathetic tone as well as an index of integration between the autonomic nervous system and prefrontal brain function. Greater resting heart rate variability (mediated largely by the activity of the vagus nerve) is associated with better emotional regulation and mental health, as well as with better physical health and longevity [88]. In a study which examined the relationship between resting heart rate variability and women having had an orgasm in the past month from 13 different orgasm triggers (and controlled for possible social desirability response bias), only vaginal orgasm was associated with better (greater) resting heart rate variability (orgasm from vaginally focused manual stimulation by a partner missed achieving statistical significance). The authors discussed not only the possibility that the better emotion

regulation and relatedness associated with better heart rate variability allows for greater probability of specifically vaginal orgasm but also the possibility that specifically penile–vaginal stimulation and the orgasm that it directly produces might even lead to better parasympathetic tone and other beneficial processes associated with greater resting heart rate variability [88].

Women who are more consistently orgasmic from penile–vaginal intercourse have a very good correlation between laboratory-measured subjective sexual arousal and vaginal pulse amplitude (a measure of vaginal vasocongestion indicative of sexual arousal) responses to erotica. This very good correlation between laboratory-measured subjective sexual arousal and vaginal pulse amplitude is not present for women who are only orgasmically consistent from other partnered sexual activities or from masturbation, but not from penile–vaginal intercourse [89, 90]. These findings suggest that for some reason, women who are not orgasmically consistent from penile–vaginal intercourse are insufficiently aware of their vaginal responses, not integrating their vaginal responses into their sense of arousal or not responding at some level (or some combination of these processes).

Studies prescribing sildenafil for female orgasmic disorder have led to results ranging from mixed to positive [1]. Given that it is women with a history of good penile–vaginal intercourse orgasmic consistency that display evidence of integrating their vaginal vasocongestion responses into their mental sense of sexual arousal [89, 90], future research should examine the possibility that women with a prior history of penile–vaginal intercourse orgasm (or more specifically vaginal orgasm) who have recently developed problems of arousal or orgasm might be more likely to benefit from sildenafil and/or other PDE5 inhibitors than other women [91].

In a nationally representative Czech study, it was found that women who had a male partner with an erect penis length of at least 14.5 cm had greater vaginal orgasm consistency [5]. This finding was replicated in an online convenience sample consisting largely of British women [92]. The British study also found that penis length was not associated with clitoral orgasm [92]. These findings are consistent with the finding in another Czech study that vaginal orgasm consistency was associated with greater sexual arousability from deep vaginal stimulation, but not with sexual arousability from the clitoris or even the shallow or middle vagina [93], because shorter penises would be less likely to adequately stimulate the deep vagina and cervix. These findings are also consistent with different peripheral nerves conducting stimuli from the clitoris and from the deep vagina to the brain, and with the different regions of the somatosensory cortex of the brain activated by stimulation of the clitoris, lower vagina, and cervix [86]. These research findings are also

consistent with the result in a large representative sample of Czech women that vaginal orgasm consistency was associated with being mentally focused on specifically vaginal sensations during penile–vaginal intercourse [5].

In contrast to the findings of male partner penis length being associated with greater likelihood of vaginal orgasm [5, 92], one study found that there was no difference in female external genital measurements between women who orgasm from penile–vaginal intercourse usually to always and women who orgasm from penile–vaginal intercourse never to sometimes [94]. However, an Italian study found that the greater the distance between the vagina and the urethra, the more likely a woman is to have experienced vaginal orgasm [95]. The finding that the thickness of the urethro-vaginal space was greater in women with vaginal orgasm than in women without vaginal orgasm [95] could be due to some combination of factors, including more vaginal nerves in women with a thicker urethrovaginal space and/or an exercise effect (in which more vaginal orgasms lead to better vaginal tissue tone). At least some women have nitric oxide type 5 phosphodiesterase pathways in the vagina (which might be responsive to phosphodiesterase type 5 inhibitors such as sildenafil), and some women have cavernous or pseudocavernous tissue in the vaginal wall [96].

A physician in the United States reported that in an uncontrolled trial, three sessions of transcutaneous temperature controlled radiofrequency to the vagina, labia, and clitoris of 25 women led to improvements in their orgasmic function. The women enrolled in the study all once had good orgasmic function but had become either anorgasmic or slow to orgasm [97]. That author reported that the women who had developed anorgasmia responded to treatment by becoming orgasmic, and the women who had developed a much longer time to have an orgasm responded to treatment by requiring a shorter time to orgasm [97]. The author implied that the treatment ameliorated vulvovaginal laxity and improved blood flow. Further research with controlled trials would be needed to provide more evidence of this approach.

Receptive anal intercourse has been found to be associated with increased risk of sexual dysfunction (as well as anorectal disorders), which might be due to some combination of psychological and interpersonal factors and possible dysregulation of at least the pudendal nerve induced by receptive anal intercourse [98].

Among the physiological processes differentiating penile–vaginal intercourse from other sexual activities (including stimulation of the vagina with other objects) is the reciprocal pulsation between the penis and vagina. When the penis thrusts in the vagina and against the cervix, the vaginal muscles reflexively grip the lower part of the penis, which might produce a virtuous circle of subtle but differentiating genital responses [99, 100].

Phenomenology/DSM-5 Diagnostic Criteria

The fifth edition of the American Psychiatric Association's Diagnostic and Statistical manual (DSM-5) [15] includes its latest version of their committee criteria for female orgasmic disorder. Diagnosis includes specification of whether the disorder is lifelong or acquired, whether generalized or situational, and whether it is mild, moderate, or severe.

The DSM-5 criteria involve the infrequency or absence of orgasm or greatly reduced sensation of orgasm or greatly increased time needed for orgasm in at least 75% of sexual events (or at least 75% of specified sexual events for the situational variety of the disorder) over the past 6 months. Exclusion criteria for the diagnosis include that the sexual dysfunction is attributable to effects of a substance or medication, to another medical condition or mental disorder (other than a sexual one), or to significant stressors (including relationship distress). It is also recommended in DSM-5 that the diagnosis not be made if the clinician judges that stimulation has been inadequate.

One additional diagnostic criterion in DSM-5 is that the sexual symptoms cause significant distress for the individual (this will be discussed at greater length below) (see Table 14-1).

In the DSM-5 discussion of the diagnosis, reference is also made to some cultural prohibitions against pleasure. The common occurrence of comorbidity of female orgasmic disorder with sexual interest and arousal disorders is appropriately noted.

Some of the statements in the DSM-5 criteria and related diagnostic discussion do not reflect best evidence but instead reflect common biases. The need for clinically significant distress to qualify for a diagnosis, the assertion that orgasm is not strongly correlated with sexual satisfaction, the use of an “always” criterion in mentioning supposedly infrequent orgasm from penile–vaginal intercourse, and the dismissiveness of lack of intercourse orgasm being important are all at odds with best evidence.

Rather than being a valuable index of clinical significance or even seemingly a reaction to a condition, distress might constitute an enduring composite of anxiety and depression that approximates a disorder in itself [101, 102]. In a large sample of Czech women, biological as well as developmental and psychological factors were found to be associated with difficulties in being coitally orgasmic, but it was also found that being sexually distressed reflects a different group of psychological problems [11]. Other developmental factors, early experience, and trauma can strongly shape the likelihood of experiencing sexual distress, as is evidenced by the finding that women who report a history of being sexually abused in childhood do not manifest as clear an inverse

TABLE 14-1. DSM-5 Diagnostic Criteria for Female Orgasmic Disorder. 302.73 (F52.31)

A. The presence of either of the following symptoms and experience on almost all or all (approximately 75–100%) occasions of sexual activity (in identified situational contexts or, if generalized, in all contexts):

1. Marked delay in, marked infrequency of, or the absence of orgasm
2. Markedly reduced intensity of orgasmic sensations

B. The symptoms in criterion A have persisted for a minimum duration of approximately 6 months

C. The symptoms in criterion A cause clinically significant distress in the individual

D. The sexual dysfunction is not better explained by a nonsexual mental disorder or as a consequence of severe relationship distress (e.g., partner violence) or other significant stressors and is not attributable to the effects of a substance/medication or another medical condition

Specify whether:

Lifelong: The disturbance has been present since the individual became sexually active

Acquired: The disturbance began after a period of relatively normal sexual function

Specify whether:

Generalized: Not limited to certain types of stimulation, situations, or partners

Situational: Only occurs with certain types of stimulation, situations, or partners

Specify if:

Never experienced an orgasm under any situation

Specify current severity:

Mild: Evidence of mild distress over the symptoms in criterion A

Moderate: Evidence of moderate distress over the symptoms in criterion A

Severe: Evidence of severe or extreme distress over the symptoms in criterion A

[Reprinted with permission from the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, (Copyright 2013). American Psychiatric Association].

association between better sexual function and less distress as women without a history of such abuse (women who report a history of being sexually abused in childhood also have poorer orgasmic function as measured by the FSFI orgasm domain, with no difference between penetrative and non-penetrative abuse) [13]. Similarly, the correlates of female sexual arousal disorder symptoms differ when a distress criterion is required (those differences include the significant predictors: history of no vaginal orgasm but a history of having engaged in masturbation). However, in cases of female sexual arousal disorder both with and without distress, there is an association of female sexual arousal disorder with lack of attention to vaginal sensations during penile–vaginal intercourse [101]. A focus group with women having difficulties experiencing orgasm found that “distress” was a term rarely used and that the more common term was “frustrated” [103]. This is an important contrast between women’s actual experience and the words used in the DSM-5 criteria for female orgasmic disorder. By requiring the presence of a term not best reflecting the experience of women, there is a risk of failing to help women with orgasm problems. An interesting twin study that examined genetic and environmental factors revealed that sexual distress has little to do with sexual dysfunction but a great deal to do with the factors (including obsessive–compulsive symptoms and general anxiety sensitivity) associated with general anxiety in women [104].

There is a curious exceptionalism that applies to DSM-5 diagnosis of many sexual disorders. By requiring the presence of “distress,” the clinician risks reinforcing patient denial of a problem, a process that is not routinely promoted for other psychological or medical problems (with the possible exception of overweight).

In contrast to the assertions in DSM-5, research in multiple countries has shown that women’s orgasm is indeed associated with women’s sexual satisfaction [105, 106].

Unfortunately, DSM-5 is not the only example of consensus guidelines deviating sharply from best evidence regarding female orgasmic disorder evaluation and treatment [4]. Professional resistance to appreciation of the unique role of the vagina in women’s orgasm does a disservice to women whose sexual, interpersonal, and global psychological functioning might benefit from more specific education and treatment, rather than the denial of differences between vaginal and clitoral stimulation and corresponding orgasm. Given the associations between better penile–vaginal intercourse (including frequency, vaginal orgasm, and simultaneous orgasm) and multiple measures of women’s psychological health, psychophysiological health, and intimate relationship function, the insistence on a distress criterion and the common denial of the special value of penile–vaginal intercourse and vaginal orgasm amount to harm to women’s health by many health professionals [4].

Another potential concern in DSM-5 criteria is the presence of other mental disorder being an exclusion criterion. Given that depression is common among sexual disorders [107], and in some cases the pharmacological interventions for depression might be at least as sexually impairing as the depression the medications are intended to treat, one should consider the merit in diagnosing and treating both depression and orgasmic disorder. The fact that the personality features which can predispose to depression also predispose to some orgasmic impairment [12, 40, 45, 63, 66, 71] also argues against at least depression being a simple exclusion criterion. Of note, even within the normal (nonclinical) range of depression scores, Beck Depression Inventory scores were inversely associated with women's orgasm frequency and intensity [44]. In some cases, especially milder forms of depression might reflect personality influences, rather than disease processes.

Members of the DSM-V sexual dysfunctions working group responded [108] to some of the published criticisms on the changes they made from the previous edition of DSM (Diagnostic and Statistical Manual of Mental Disorders, fourth edition, text revision; DSM-IV-TR). However, the serious problems noted in this chapter regarding the DSM-V diagnostic criteria for female orgasmic disorder were not among the issues that they addressed.

Although DSM-5 is widely used (especially in the United States, where its use might be required for insurance claims or to comply with other administrative demands), it is important to understand not only the shortcomings of DSM-5 but also the existence of the much more straightforward diagnosis of female orgasmic dysfunction found in the tenth edition (2016 version) of the World Health Organization's International Statistical Classification of Diseases and Related Health Problems (ICD-10), under the category of sexual dysfunction not caused by organic disorder or disease [109]. The criterion is refreshingly clear: "Orgasm does not occur or is markedly delayed" (<http://apps.who.int/classifications/icd10/browse/2016/en#/F52.3>).

Implications for Treatment

As the evidence briefly reviewed above indicates, distress is not a legitimate requirement (scientifically or clinically) for men or women to qualify for diagnosis and treatment of their sexual dysfunctions. Obtaining information about other disorders also requiring treatment is important, as is obtaining information regarding medications and physiological states that might be causing or contributing to sexual dysfunction, lifestyle factors, and characteristics of the partner and the partnership.

Many studies have found that vaginal orgasm is associated with indices of better psychological and psychophysiological function, but other orgasm triggers (including

masturbation during penile–vaginal intercourse) are associated with poorer psychological and psychophysiological function [3, 64]. These differential findings (multivariate analyses allow for concurrent statistical control of other sexual behaviors, so that observed adverse correlates of masturbation are not simply due to lack of penile–vaginal intercourse) speak not only to differences between sexual behaviors but also raise serious questions regarding the usual approach to treating female orgasmic dysfunction with directed masturbation. It has been noted that for some women, repeated orgasm from clitoral stimulation can interfere with the development of pathways leading to vaginal orgasm [110, 111]. A large representative study of Swedish women found that penile–vaginal intercourse orgasm is inversely associated with masturbation frequency [27], and some smaller studies found no correlation between orgasm consistency triggered by penile–vaginal intercourse and triggered by masturbation [89, 90]. In a large representative sample of women in the Czech Republic, vaginal orgasm consistency was associated with a variety of factors that make vaginal stimulation during penile–vaginal intercourse more thorough or more psychologically salient. These factors include women having been educated in their youth that the vagina is a source of women's orgasm, being mentally focused on vaginal sensations during penile–vaginal intercourse, greater duration of penile–vaginal intercourse, and sufficient male partner penis length [5]. The authors of that study observed that a purely clitoral focus can undermine the capacity for vaginal orgasm. It should be noted that there are effective penile–vaginal intercourse-based treatments for female orgasmic dysfunction [112] and that women should not be directed away from penile–vaginal sensations in the hope that would develop the ability to respond orgasmically to penile–vaginal intercourse. A penile–vaginal intercourse-based treatment that has been shown to be effective at improving women's penile–vaginal intercourse orgasm is the coital alignment technique (also known by its acronym CAT) developed by Eichel. The coital alignment technique involves a synchronized rocking movement by the man and woman during penile–vaginal intercourse, with a riding high variant of the missionary position [112].

Best Practice or Evidence-Based Approach to Diagnosis Including Diagnostic Tests, Instruments, or Rating Scales

Scales

The Female Sexual Function Index (FSFI) [113] might be the most commonly used female sexual function scale. It has one question each (rated on a six-point scale) inquiring about

frequency of orgasm, difficulty in reaching orgasm, and satisfaction from the ability to reach orgasm. A serious problem with the FSFI is that it explicitly asks women to not differentiate between penile–vaginal intercourse and other sexual activity. As with some other scales, the use of several conceptually related questions leads to internal statistical consistency (technically termed reliability), but ultimately, the data from the FSFI and similar scales might not be as useful and differentially valid as more objective measures of sexual behaviors and corresponding orgasm frequencies (see below).

The Golombok Rust Inventory of Sexual Satisfaction (GRISS) has one question each (rated on a five-point scale) inquiring about ability to have an orgasm with a partner, finding it impossible to have an orgasm, orgasm from partner stimulating the clitoris during foreplay, and failure to reach orgasm during intercourse [114].

The Arizona Sexual Experience Scale (ASEX) was developed to measure various adverse sexual effects of medication, and the single item for women’s orgasm function is rating on a six-point scale how easily one reaches orgasm [115].

The Changes in Sexual Functioning Questionnaire (CSFQ) was also developed to measure medication (or illness)-induced changes in sexual function [116]. It has one question each (rated on a five-point scale) inquiring about frequency of orgasm, ability to reach orgasm when the respondent wants to have an orgasm, and degree of pleasure from orgasm (there is also a question on painful orgasms).

The Sexual Functioning Questionnaire by Quirk et al. [105] was developed for use in clinical trials of treatments of female sexual dysfunctions. It has one question each (rated on a five-point scale plus an option of no activity during the 4-week queried period) inquiring about frequency of orgasm, ease of reaching orgasm, and pleasure experienced from orgasms.

The Patient-Reported Outcomes Measurement Information System (PROMIS) Sexual Function and Satisfaction Measures Version 2.0 [117] has many items on aspects of sexual behavior for both sexes, but only two items on female orgasmic function. One item is how relatively often in the past 30 days the woman has been able to have an orgasm when she wanted an orgasm, and the other is how satisfying her orgasms have been. Both items are rated on a five-point scale from never to always (plus the respective options of not attempted and no orgasm in the past 30 days). Although the overall scale benefitted from several useful methodological features in the course of its development, the authors of the report on the scale observed that additional work is required in the orgasm domain of the scale.

An alternative approach is found in the Sexual Behavior Questionnaire developed by Brody and colleagues [66, 69, 88]. Women report how many days in a recent representative

month they (1) engaged in and (2) had an orgasm from various specific sexual activities. The specific sexual activities in the scale typically include penile–vaginal intercourse *without* additional simultaneous clitoral stimulation, penile–vaginal intercourse *with* additional simultaneous clitoral stimulation, clitorally focused masturbation (further differentiated as with or without a vibrator), vaginally focused masturbation (further differentiated as with or without a vibrator), clitorally focused manual stimulation by a partner, vaginally focused manual stimulation by a partner, cunnilingus, and receptive anal intercourse [88]. The scale can also include a further differentiation of partnered noncoital sexual behaviors as occurring with or without penile–vaginal intercourse on the same day. The Sexual Behavior Questionnaire items are usually presented in a matrix format for completion (with instructions to the respondent including that if the answer for an item is either never or zero, to write 0 rather than leaving any item blank). The sexual behavior items can be expanded or reduced as needed. The validity of the Sexual Behavior Questionnaire has been demonstrated both in its associations with various psychological and psychophysiological measures in several of the studies reviewed in this chapter, as well as examination of the role of social desirability response bias, a consideration not often examined in research on sexual behavior. Additional columns can be added to measure age at first engaging in each activity (or indicating that the specific sexual activity was never tried) and age at first having an orgasm from each activity. The approach of the Sexual Behavior Questionnaire provides not only more precise information on specific sexual behaviors and orgasm than more common scales, but the numerator (orgasm) and denominator (times tried in the month) provide additional useful information, as do the ratio (orgasm consistency from the specific activity). This specific quantitative approach is in contrast to the vague relative terms used in other scales. Each of the items in the Sexual Behavior Questionnaire can provide useful information. For example, if the number of days per month of penile–vaginal intercourse is low, the interview can include further questions on what factors led to the low number of days per month (such as partner availability, lack of interest by the woman and/or her partner, illness, etc.). The presence of masturbation, especially if a high number of days per month, can also be examined, as it might suppress pursuit of and/or full response to penile–vaginal intercourse in some cases. Additional subcategories of activities can also be added, such as vaginal orgasm occurring at the same time as male penile–vaginal intercourse orgasm (simultaneous orgasm; in a nationally representative survey of 35–65-year-old Czechs, simultaneous penile–vaginal orgasm was associated with better sexual satisfaction, relationship satisfaction, personal mental health satisfaction, and life satisfaction [6]). The Sexual Behavior

Questionnaire also has a version for use with men, in which an item for fellatio is substituted for the cunnilingus item, all references to clitoral stimulation are removed, and an item for insertive anal intercourse is added [88].

Interview and Best Practice

Many patients do not spontaneously report sexual problems, and many general clinicians do not spontaneously enquire about patient sexual function. Even if one does not have time or need to use a scale, a few minutes of direct calm questioning can elicit some important information. The Sexual Behavior Questionnaire (see above) can save time in gathering quantitative details of specific sexual behavior history and frequency and corresponding orgasm consistency, but further questions regarding medical conditions and the sexual function of partners are also suggested, even in the course of a nonspecialist anamnesis. Although multi-item satisfaction (intimate relationship, sexual, life, mental health, etc.) scales exist, a clinician or even researcher can also simply ask for a rating of the specific domain of satisfaction on a scale from one to six, providing the anchors of one = very unsatisfying and six = very satisfying (such scales are not only time-efficient but valid as well [25]). Information on the degree to which the woman feels sexual desire and experiences sexual arousal and lubrication before and during sex can also provide useful information (even if pre-existing desire is not essential for orgasm), as can information on the degree to which she is able to focus her attention on vaginal sensations during penile–vaginal intercourse [5].

It is important to query women about the sexual function of their partner, because in quite a few cases, the woman's seemingly impaired function might be due to the premature ejaculation or inadequate erectile function of their partner. Similarly, the possibility should also be considered that a woman with a chronic sexual dysfunction (or negative attitude toward sex) might adversely affect the function of their partner. Chronic sexual dysfunction of one partner can create adverse expectations for sexual interaction with at least that partner, which can affect sexual function. Information on partners can include an assessment of intimate relationship satisfaction with their partner, sexual desire for their partner, the presence of premature ejaculation or erectile dysfunction, and whether the woman's orgasm problem also existed earlier in the same intimate relationship or in other intimate relationships. Although scales for the ascertainment of premature ejaculation and erectile dysfunction exist, the clinician might begin assessment of partner sexual function by simply asking the woman if her male partner(s) ejaculate earlier than what might make for an optimal opportunity for her orgasm and if her male partner(s) have difficulty maintaining a sufficiently hard erection during intercourse.

After the diagnosis of female orgasmic disorder is made and the essential aspects of history are obtained (including asking the patient what they have already tried to overcome their orgasm difficulty), one of the first places to start treatment planning is considering whether relatively simple solutions are available. These include evaluating whether any medications or health habits might be changed and evaluating whether the male partner needs an evaluation for his sexual dysfunction. In some cases, assessment of the woman's hormone levels might be indicated. Intimate relationship quality issues might in some cases respond to couples counseling but in other cases might not. Similarly, in some cases, psychological or psychiatric problems might respond to psychological treatment, but in other cases, one might proceed to more direct sexological interventions. At the very least, a woman with orgasmic disorder might benefit from discussion of her focusing attention on vaginal sensations during intercourse and scheduling sex sufficiently frequently (preferably at a time and with an ambience that is optimal for her). As noted above, there are effective penile–vaginal intercourse-based (non-masturbatory) treatments for female orgasmic disorder.

References

1. IsHak WW, Bokarius A, Jeffrey JK, Davis MC, Bakhta Y. Disorders of orgasm in women: a literature review of etiology and current treatments. *J Sex Med.* 2010;7:3254–68.
2. McCool ME, Zuelke A, Theurich MA, Knuettel H, Ricci C, Apfelbacher C. Prevalence of female sexual dysfunction among premenopausal women: a systematic review and meta-analysis of observational studies. *Sex Med Rev.* 2016;4:197–212.
3. Brody S. The relative health benefits of different sexual activities. *J Sex Med.* 2010;7:1336–61.
4. Brody S, Costa RM, Hess U. “Standard Operating Procedures for Female Orgasmic Disorder” is not based on best evidence. *J Sex Med.* 2013;10:2606–9.
5. Brody S, Weiss P. Vaginal orgasm is associated with vaginal (not clitoral) sex education, focusing mental attention on vaginal sensations, intercourse duration, and a preference for a longer penis. *J Sex Med.* 2010;7:2774–81.
6. Brody S, Weiss P. Simultaneous penile–vaginal intercourse orgasm is associated with satisfaction (sexual, life, partnership, and mental health). *J Sex Med.* 2011;8:734–41.
7. Gebhard PH. Factors in marital orgasm. *J Soc Issues.* 1966; 22:88–95.
8. Burri A, Greven C, Leupin M, Spector T, Rahman Q. A multivariate twin study of female sexual dysfunction. *J Sex Med.* 2012; 9:2671–81.
9. Brody S, Costa RM. Vaginal orgasm is more prevalent among women with a prominent tubercle of the upper lip. *J Sex Med.* 2011;8:2793–9.
10. Dunn KM, Cherkas LF, Spector TD. Genetic influences on variation in female orgasmic function: a twin study. *Biol Lett.* 2005; 1:260–3.
11. Raboch J, Raboch J. Infrequent orgasms in women. *J Sex Marital Ther.* 1992;18:114–20.
12. Uddenberg N. Psychological aspects of sexual inadequacy in women. *J Psychosom Res.* 1974;18:33–47.

13. Stephenson KR, Hughan CP, Meston CM. Childhood sexual abuse moderates the association between sexual functioning and sexual distress in women. *Child Abuse Negl.* 2012;36:180–9.
14. Oberg K, Fugl-Meyer KS, Fugl-Meyer A. On sexual well-being in sexually abused Swedish women: epidemiological aspects. *Sex Relat Ther.* 2002;17:329–41.
15. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders.* 5th ed. (DSM-5). Washington, DC: American Psychiatric Association; 2013.
16. Lee DM, Nazroo J, O'Connor DB, Blake M, Pendleton N. Sexual health and well-being among older men and women in England: findings from the English Longitudinal Study of Ageing. *Arch Sex Behav.* 2016;45:133–44.
17. Aslan E, Beji NK, Gungor I, Kadioglu A, Dikencik BK. Prevalence and risk factors for low sexual function in women: A study of 1,009 women in an outpatient clinic of a university hospital in Istanbul. *J Sex Med.* 2008;5:2044–52.
18. Verit FF, Verit A, Billurcu N. Low sexual function and its associated risk factors in pre- and postmenopausal women without clinically significant depression. *Maturitas.* 2009;64:38–42.
19. Hendrickx L, Gijs L, Enzlin P. Age-related prevalence rates of sexual difficulties, sexual dysfunctions, and sexual distress in heterosexual women: results from an online survey in Flanders. *J Sex Med.* 2015;12:424–35.
20. Aslan G, Aslan D, Kızılyar A, Ispahi C, Esen A. A prospective analysis of sexual functions during pregnancy. *Int J Impot Res.* 2005;17:154–7.
21. Barrett G, Pendry E, Peacock J, Victor C, Thakar R, Manyonda I. Women's sexual health after childbirth. *BJOG.* 2000;107:186–95.
22. Burri A, Spector T, Rahman Q. A discordant monozygotic twin approach to testing environmental influences on sexual dysfunction in women. *Arch Sex Behav.* 2013;42:961–72.
23. Dunn KM, Croft PR, Hackett GI. Association of sexual problems with social, psychological, and physical problems in men and women: a cross sectional population survey. *J Epidemiol Community Health.* 1999;53:144–8.
24. Klapilova K, Brody S, Krejcová L, Husarova B, Binter J. Sexual satisfaction, sexual compatibility, and relationship adjustment in couples: the role of sexual behaviors, orgasm, and men's discernment of women's intercourse orgasm. *J Sex Med.* 2015;12:667–75.
25. Brody S, Costa RM. Satisfaction (sexual, life, relationship, and mental health) is associated directly with penile–vaginal intercourse but inversely with other sexual behavior frequencies. *J Sex Med.* 2009;6:1947–54.
26. Weiss P, Brody S. International Index of Erectile Function (IIEF) scores generated by men or female partners correlate equally well with own satisfaction (sexual, partnership, life, and mental health). *J Sex Med.* 2011;8:1404–10.
27. Brody S. Vaginal orgasm is associated with better psychological function. *Sex Relat Ther.* 2007;22:173–91.
28. Lorenz TA, Meston CM. Exercise improves sexual function in women taking antidepressants: Results from a randomized crossover trial. *Depress Anxiety.* 2014;31:188–95.
29. Fisher WA, Rosen RC, Eardley I, Sand M, Goldstein I. Sexual experience of female partners of men with erectile dysfunction: the Female Experience of Men's Attitudes to Life Events and Sexuality (FEMALES) study. *J Sex Med.* 2005;2:675–84.
30. Sand M, Fisher MA. Women's endorsement of models of female sexual response: The nurses' sexuality study. *J Sex Med.* 2007;4:709–20.
31. Nowosielski K, Wrobel B, Kowalczyk R. Women's endorsement of models of sexual response: correlates and predictors. *Arch Sex Behav.* 2016;45:291–302.
32. Weiss P, Brody S. Women's partnered orgasm consistency is associated with greater duration of penile–vaginal intercourse but not of foreplay. *J Sex Med.* 2009;6:135–41.
33. Costa RM, Brody S. Women's relationship quality is associated with specifically penile–vaginal intercourse orgasm and frequency. *J Sex Marital Ther.* 2007;33:319–27.
34. Holla K, Jezek S, Weiss P, Pastor Z, Holly M. The prevalence and risk factors of sexual dysfunction among czech women. *Int J Sex Heal.* 2012;24:218–25.
35. Costa RM, Brody S. Orgasm and women's waist circumference. *Eur J Obstet Gynecol Reprod Biol.* 2014;182:118–22.
36. Esposito K, Ciotola M, Giugliano F, Bisogni C, Schisano B, Autorino R, et al. Association of body weight with sexual function in women. *Int J Impot Res.* 2007;19:353–7.
37. Brody S, Weiss P. Slimmer women's waist is associated with better erectile function in men independent of age. *Arch Sex Behav.* 2013;42:1191–8.
38. Costa RM, Brody S. Immature psychological defense mechanisms are associated with greater personal importance of junk food, alcohol, and television. *Psychiatry Res.* 2013;209:535–9.
39. Brody S, Costa RM. Associations of immature defense mechanisms with personal importance of junk food, television and alcohol are independent of age. *Psychiatry Res.* 2013;210:1327–8.
40. Brody S, Houde S, Hess U. Greater tactile sensitivity and less use of immature psychological defense mechanisms predict women's penile–vaginal intercourse orgasm. *J Sex Med.* 2010;7:3057–65.
41. Halis F, Yildirim P, Kocaaslan R, Cecen K, Gokce A. Pilates for better sex: changes in sexual functioning in healthy Turkish women after pilates exercise. *J Sex Marital Ther.* 2016;42:302–8.
42. Cooney GM, Dwan K, Greig CA, Lawlor DA, Rimer J, Waugh FR, et al. Exercise for depression. *Cochrane Database Syst Rev.* 2013:CD004366.
43. Cabral PU, Canário AC, Spyrides MH, Uchôa SA, Eleutheria Júnior J, Giraldo PC, et al. Physical activity and sexual function in middle-aged women. *Rev Assoc Med Bras.* 2014;60:47–52.
44. Battaglia C, Battaglia B, Mancini F, Nappi RE, Paradisi R, Venturoli S. Moderate alcohol intake, genital vascularization, and sexuality in young, healthy, eumenorrheic women. A pilot study. *J Sex Med.* 2011;8:2334–43.
45. Costa RM, Brody S. Immature defense mechanisms are associated with lesser vaginal orgasm consistency and greater alcohol consumption before sex. *J Sex Med.* 2010;7:775–86.
46. Mondaini N, Cai T, Gontero P, Gavazzi A, Lombardi G, Boddi V, et al. Regular moderate intake of red wine is linked to a better women's sexual health. *J Sex Med.* 2009;6:2772–7.
47. Smith AM, Lyons A, Ferris JA, Richters J, Pitts MK, Shelley JM, et al. Incidence and persistence/recurrence of women's sexual difficulties: findings from the Australian Longitudinal Study of Health and Relationships. *J Sex Marital Ther.* 2012;38:378–93.
48. Johnson SD, Phelps DL, Cottler LB. The association of sexual dysfunction and substance use among a community epidemiological sample. *Arch Sex Behav.* 2004;33:55–63.
49. Battaglia C, Battaglia B, Mancini F, Persico N, Nappi RE, Paradisi R, et al. Cigarette smoking decreases the genital vascularization in young healthy. *Eumenorrheic Women J Sex Med.* 2011;8:1717–25.
50. McCabe MP, Sharlip ID, Lewis R, Atalla E, Balon R, Fisher AD, et al. Risk factors for sexual dysfunction among women and men: a consensus statement from the Fourth International Consultation on Sexual Medicine 2015. *J Sex Med.* 2016;13:153–67.
51. Nicholas A, Brody S, de Sutter P, de Carufel F. A woman's history of vaginal orgasm is discernible from her walk. *J Sex Med.* 2008;5:2119–24.
52. Lowenstein L, Gruenwald I, Gartman I, Vardi Y. Can stronger pelvic muscle floor improve sexual function? *Int Urogynecol J.* 2010;21:553–6.

53. Gameiro MO, Miraglia L, Gameiro LF, Padovani CR, Amaro JL. Pelvic floor muscle strength evaluation in different body positions in nulliparous healthy women and its correlation with sexual activity. *Int Braz J Urol*. 2013;39:847–52.
54. Wurn LJ, Wurn BF, King CR, Roscow AS, Scharf ES, Shuster JJ. Increasing orgasm and decreasing dyspareunia by a manual physical therapy technique. *MedGenMed*. 2004;6:47.
55. Brody S, Fischer AH, Hess U. Women's finger sensitivity correlates with partnered sexual behavior but not solitary masturbation frequencies. *J Sex Marital Ther*. 2008;34:343–52.
56. Leeners B, Kruger TH, Brody S, Schmidlin S, Naegeli E, Egli M. The quality of sexual experience in women correlates with post-orgasmic prolactin surges: results from an experimental prototype study. *J Sex Med*. 2013;10:1313–9.
57. Krysiak R, Drosdzol-Cop A, Skrzypulec-Plinta V, Okopien B. Sexual function and depressive symptoms in young women with elevated macroprolactin content: a pilot study. *Endocrine*. 2016;53:291–8.
58. Brody S, Kruger TH. The post-orgasmic prolactin increase following intercourse is greater than following masturbation and suggests greater satiety. *Biol Psychol*. 2006;71:312–5.
59. Schmidt PJ, Steinberg EM, Negro PP, Haq N, Gibson C, Rubinow DR. Pharmacologically induced hypogonadism and sexual function in healthy young women and men. *Neuropsychopharmacology*. 2009;34:565–76.
60. Fernandes T, Costa-Paiva LH, Pinto-Neto AM. Efficacy of vaginally applied estrogen, testosterone, or polyacrylic acid on sexual function in postmenopausal women: a randomized controlled trial. *J Sex Med*. 2014;11:1262–70.
61. Graziottin A. The biological basis of female sexuality. *Int Clin Psychopharmacol*. 1998;13:S15–22.
62. Constantine G, Graham S, Portman DJ, Rosen RC, Kingsberg SA. Female sexual function improved with ospemifene in postmenopausal women with vulvar and vaginal atrophy: results of a randomized, placebo-controlled trial. *Climacteric*. 2015;18:226–32.
63. Harris JM, Cherkas LF, Kato BS, Heiman JR, Spector TD. Normal variations in personality are associated with coital orgasmic infrequency in heterosexual women: A population-based study. *J Sex Med*. 2008;5:1177–83.
64. Costa RM, Brody S. Anxious and avoidant attachment, vibrator use, anal sex, and impaired vaginal orgasm. *J Sex Med*. 2011;8:2493–500.
65. Leeners B, Hengartner MP, Rössler W, Ajdacic-Gross V, Angst J. The role of psychopathological and personality covariates in orgasmic difficulties: a prospective longitudinal evaluation in a cohort of women from age 30 to 50. *J Sex Med*. 2014;11:2928–37.
66. Brody S, Costa RM. Vaginal orgasm is associated with less use of immature psychological defense mechanisms. *J Sex Med*. 2008;5:1167–76.
67. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 4th edition, Text Revision ed. Washington, D.C.: American Psychiatric Association; 2000.
68. Brody S, Nicholson S. Immature psychological defense mechanisms are associated with women's greater desire for and actual engaging in masturbation. *Sex Relat Ther*. 2013;28:419–30.
69. Brody S, Costa RM. Overestimation of heterosexually attributed AIDS deaths is associated with immature psychological defence mechanisms and clitoral masturbation during penile–vaginal intercourse. *Int J STD AIDS*. 2009;20:869–75.
70. Raboch J. Sexual development and life of psychiatric female patients. *Arch Sex Behav*. 1986;15:341–53.
71. Kratochvil S. Sexuální stimulace a zenský orgasmus [Sexual stimulation and female orgasm]. *Cesk Psychiatr*. 1993;89:191–9.
72. Waldinger MD. Psychiatric disorders and sexual dysfunction. In: Vodusek DB, Boller F, editors. *Handbook of clinical neurology*. Vol. 130 (3rd series), Neurology of sexual and bladder disorders. Amsterdam: Elsevier; 2015. p. 469–489.
73. Nedoma K, Sipova I. Sexuální chování a reaktivita u prostitutek [Sexual behavior and reactivity in prostitutes]. *Cesk Psychiatr*. 1972;68:214–7.
74. Brody S, Potterat JJ, Muth SQ, Woodhouse DE. Psychiatric and characterological factors relevant to excess mortality in a long-term cohort of prostitute women. *J Sex Marital Ther*. 2005;31:97–112.
75. Mischoulon D, Price LH, Carpenter LL, Tyrka AR, Papakostas GI, Baer L, et al. A double-blind, randomized, placebo-controlled clinical trial of S-adenosyl-L-methionine (SAMe) versus escitalopram in major depressive disorder. *J Clin Psychiatry*. 2014;75:370–6.
76. Perlis RH, Laje G, Smoller JW, Fava M, Rush AJ, McMahon FJ. Genetic and clinical predictors of sexual dysfunction in citalopram-treated depressed patients. *Neuropsychopharmacology*. 2009;34:1819–28.
77. Sacomori C, Cardoso FL. Predictors of improvement in sexual function of women with urinary incontinence after treatment with pelvic floor exercises: A secondary analysis. *J Sex Med*. 2015;12:746–55.
78. Jitkrisadukul O, Jagota P, Bhidayasiri R. Postural instability, the absence of sexual intercourse in the past month, and loss of libido are predictors of sexual dysfunction in Parkinson's disease. *Parkinsonism Relat Disord*. 2015;21:61–7.
79. Aerts L, Christiaens MR, Enzlin P, Neven P, Amant F. Sexual functioning in women after mastectomy versus breast conserving therapy for early-stage breast cancer: a prospective controlled study. *Breast*. 2014;23:629–36.
80. Öztürk D, Akyolcu N. Assessing sexual function and dysfunction in Turkish women undergoing surgical breast cancer treatment. *Jpn J Nurs Sci*. 2016;13:220–8.
81. Krychman M, Millheiser LS. Sexual health issues in women with cancer. *J Sex Med*. 2013;10(suppl 1):5–15.
82. Komisaruk BR, Whipple B. Functional MRI of the brain during orgasm in women. *Annu Rev Sex Res*. 2005;16:62–86.
83. Komisaruk BR, Whipple B, Crawford A, Liu WC, Kalnin A, Mosier K. Brain activation during vaginocervical self stimulation and orgasm in women with complete spinal cord injury: fMRI evidence of mediation by the vagus nerves. *Brain Res*. 2004;1024:77–88.
84. Komisaruk BR, Whipple B. Non-genital orgasms. *Sex Relat Ther*. 2011;26:356–72.
85. Komisaruk BR, Whipple B. Love as sensory stimulation: physiological consequences of its deprivation and expression. *Psychoneuroendocrinology*. 1998;23:927–44.
86. Komisaruk BR, Wise N, Frangos E, Liu WC, Allen K, Brody S. Women's clitoris, vagina, and cervix mapped on the sensory cortex: fMRI evidence. *J Sex Med*. 2011;8:2822–30.
87. IsHak WW. *The guidebook of sexual medicine*. Beverly Hills: A&W; 2007.
88. Costa RM, Brody S. Greater resting heart rate variability is associated with orgasms through penile–vaginal intercourse, but not with orgasms from other sources. *J Sex Med*. 2012;9:188–97.
89. Brody S, Laan E, van Lunsen RH. Concordance between women's physiological and subjective sexual arousal is associated with consistency of orgasm during intercourse but not other sexual behavior. *J Sex Marital Ther*. 2003;29:15–23.
90. Brody S. Intercourse orgasm consistency, concordance of women's genital and subjective sexual arousal, and erotic stimulus presentation sequence. *J Sex Marital Ther*. 2007;33:31–9.
91. Brody S. Phosphodiesterase inhibitors and vaginal intercourse orgasm. *Int J STD AIDS*. 2009;20:440.
92. Costa RM, Miller GF, Brody S. Women who prefer longer penises are more likely to have vaginal orgasms (but not clitoral orgasms): implications for an evolutionary theory of vaginal orgasm. *J Sex Med*. 2012;9:3079–88.

93. Brody S, Klapilova K, Krejcova L. More frequent vaginal orgasm is associated with experiencing greater excitement from deep vaginal stimulation. *J Sex Med.* 2013;10:1730–6.
94. Krissi H, Ben-Shitrit G, Aviram A, Weintraub AY, From A, Wiznitzer A, et al. Anatomical diversity of the female external genitalia and its association to sexual function. *Eur J Obstet Gynecol Reprod Biol.* 2016;196:44–7.
95. Gravina GL, Brandetti F, Martini P, Carosa E, Di Stasi SM, Morano S, et al. Measurement of the thickness of the urethrovaginal space in women with or without vaginal orgasm. *J Sex Med.* 2008;5:610–8.
96. D'Amati G, di Gioia CR, Bologna M, Giordano D, Giorgi M, Dolci S, et al. Type 5 phosphodiesterase expression in the human vagina. *Urology.* 2002;60:191–5.
97. Alinsod RM. Transcutaneous temperature controlled radiofrequency for orgasmic dysfunction. *Lasers Surg Med.* 2016;48:641–5.
98. Sultan AH, Monga A, Lee J, Emmanuel A, Norton C, Santoro G, et al. An international urogynecological association (IUGA) / international continence society (ICS) joint report on the terminology for female anorectal dysfunction. *NeuroUrol Urodyn.* 2017;36:10–34. DOI: [10.1002/nau.23055](https://doi.org/10.1002/nau.23055)
99. Shafik A. Vaginocavernosus reflex. Clinical significance and role in sexual act. *Gynecol Obstet Investig.* 1993;35:114–7.
100. Shafik A. Cervico-motor reflex: description of the reflex and role in sexual acts. *J Sex Res.* 1996;33:153–7.
101. Weiss P, Brody S. Female sexual arousal disorder with and without a distress criterion: prevalence and correlates in a representative Czech sample. *J Sex Med.* 2009;6:3385–94.
102. Balon R, Segraves RT, Clayton A. Issues for DSM-V: sexual dysfunction, disorder, or variation along normal distribution: toward rethinking DSM criteria of sexual dysfunctions. *Am J Psychiatry.* 2007;164:198–200.
103. Kingsberg SA, Tkachenko N, Lucas J, Burbrink A, Kreppner W, Dickstein JB. Characterization of orgasmic difficulties by women: focus group evaluation. *J Sex Med.* 2013;10:2242–50.
104. Burri A, Rahman Q, Spector T. Genetic and environmental risk factors for sexual distress and its association with female sexual dysfunction. *Psychol Med.* 2011;41:2435–45.
105. Quirk FH, Heiman JR, Rosen RC, Laan E, Smith MD, Boolell M. Development of a sexual function questionnaire for clinical trials of female sexual dysfunction. *J Womens Health Gend Based Med.* 2002;11:277–89.
106. Philippsohn S, Hartmann U. Determinants of sexual satisfaction in a sample of German women. *J Sex Med.* 2009;6:1001–10.
107. Johannes CB, Clayton AH, Odom DM, Rosen RC, Russo PA, Shifren JL, et al. Distressing sexual problems in United States women revisited: prevalence after accounting for depression. *J Clin Psychiatry.* 2009;70:1698–706.
108. Binik YM, Brotto LA, Graham CA, Segraves RT. Response of the DSM-V sexual dysfunctions subworkgroup to commentaries published in *JSM.* *J Sex Med.* 2010;7:2382–7.
109. World Health Organization. International statistical classification of diseases and related health problems. 10th ed. Geneva: World Health Organization; 2016.
110. Perry JD. The primitive psychology of Alfred Kinsey. Paper presented at the Spring Scientific Meeting of the Maine Psychological Association; Lewiston, Maine. 1984.
111. Kegel AH. The Kinsey report. *JAMA.* 1953;153:1303–4.
112. Pierce AP. The coital alignment technique (CAT): an overview of studies. *J Sex Marital Ther.* 2000;26:257–68.
113. Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R, et al. The Female Sexual Function Index (FSFI): a multidimensional self-report instrument for the assessment of female sexual function. *J Sex Marital Ther.* 2000;26:191–208.
114. Rust J, Golombok S. The GRISS: a psychometric instrument for the assessment of sexual dysfunction. *Arch Sex Behav.* 1986;15:157–65.
115. McGahuey CA, Gelenberg AJ, Laukes CA, Moreno FA, Delgado PL, McKnight KM, et al. The Arizona Sexual Experience Scale (ASEX): reliability and validity. *J Sex Marital Ther.* 2000;26:25–40.
116. Clayton AH, McGarvey EL, Clavet GJ. The Changes in Sexual Functioning Questionnaire (CSFQ): development, reliability, and validity. *Psychopharmacol Bull* 1997;33:731–745.
117. Weinfurt KP, Lin L, Bruner DW, Cyranowski JM, Dombeck CB, Hahn EA, et al. Development and initial validation of the PROMIS® sexual function and satisfaction measures version 2.0. *J Sex Med.* 2015;12:1961–74.