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The DSM Diagnostic Criteria for Hypoactive Sexual Desire Disorder in Women

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Abstract Hypoactive Sexual Desire Disorder (HSDD) is one of two sexual desire disorders in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) and is defined by the monosymptomatic criterion "persistently or recurrently deficient (or absent) sexual fantasies and desire for sexual activity" that causes "marked distress or interpersonal difficulty." This article reviews the diagnosis of HSDD in prior and current (DSM-IV-TR) editions of the DSM, critiques the existing criteria, and proposes criteria for consideration in DSM-V. Problems in coming to a clear operational definition of desire, the fact that sexual activity often occurs in the absence of desire for women, conceptual issues in understanding untriggered versus responsive desire, the relative infrequency of unprovoked sexual fantasies in women, and the significant overlap between desire and arousal are reviewed and highlight the need for revised DSM criteria for HSDD that accurately reflect women's experiences. The article concludes with the recommendation that desire and arousal be combined into one disorder with polythetic criteria.

Keywords Hypoactive sexual desire disorder · Sexual interest · Sexual desire · DSM-V

Introduction

The goal of this review is to provide an overview on the history and current status for making a diagnosis of hypoactive sexual desire disorder (HSDD). In line with the recommendation by Segraves, Balon, and Clayton (2007) that criteria sets be listed separately by sex, this article will focus on sexual desire in women. This review will also discuss criticisms of the existing *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV-TR; American Psychiatric Association, 2000) criteria and summarize prior attempts to offer alternate diagnostic criteria and taxonomies. The issues to be considered for DSM-V include: (1) the utility of including lack of sexual fantasies in the criteria; (2) whether or not "responsive desire" should be added to the criteria; (3) how to capture relational influences and consequences; (4) the overlap between sexual desire and sexual arousal/arousability; and (5) whether or not associated distress should be part of the diagnostic criteria.

It is important to first clarify terminology used. In the professional literature, the terms sexual desire, drive, motivation, interest, libido, hunger, and appetite are often used interchangeably. In the DSM-IV-TR, whereas the disorder itself and the associated criteria focus on sexual "desire," the "Associated Features and Disorders" section also uses the term "sexual interest." This review will conclude with one recommendation that the phrase "sexual interest" replace "sexual desire."

The categories of sexual disorders in the DSM since 1980 (DSM-III; American Psychiatric Association, 1980) have been based on the human sexual response cycle as originally conceptualized by Masters and Johnson (1966). Shortly after the release of their book on treatment, *Human Sexual Inadequacy* (Masters & Johnson, 1970), it became readily apparent that the primary complaint for which patients sought treatment was not problems with sexual performance or genital excitement, as Masters and Johnson had assumed. Instead, problems relating to a lack of sexual interest were the most common presentations among women. Today, we would refer to this as a lack of sexual desire. In the late 1970s, Kaplan (1977, 1979) and Lief (1977) independently suggested that desire is a necessary separate phase of the human sexual response cycle and Masters and Johnson's model was expanded to acknowledge the important role of sexual desire. The resulting triphasic model emphasized

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Kaplan's and Lief's view that sexual desire was the first and most important component, which triggered the rest of the sexual response cycle. This triphasic sexual response cycle of desire, excitement, and orgasm (and resolution), served as the basis for how sexual disorders were categorized in the DSM: Sexual Desire Disorders, Sexual Arousal Disorders, and Orgasm Disorders mapped on to the first three phases of the sexual response cycle, and the Sexual Pain Disorders were added as a fourth category of dysfunction with no apparent justification for their addition in either the DSM-III, DSM-III-R, DSM-IV, or any of the DSM Sourcebooks. The disorder of low sexual desire in the DSM-III was labeled "Inhibited Sexual Desire" and was defined as a persistent and pervasive inhibition of sexual desire. The DSM-III stipulated that the diagnosis would rarely be made unless the lack of desire was a source of distress to either the individual or a partner.

The revised edition of DSM-III (DSM-III-R; American Psychiatric Association, 1987) dropped the term "inhibited" because of its assumed psychoanalytic (and potentially ambiguous) connotation and it was replaced with hypoactive sexual desire disorder (HSDD). Replacement of the term "inhibited" also allowed for sexual desire disorder to be defined in the same way for men and women (Graham & Bancroft, 2006). The DSM-III-R defined HSDD as "persistently or recurrently deficient or absent sexual fantasies and desire for sexual activity." Subtypes (psychogenic or psychogenic/biogenic; lifelong or acquired; and generalized or situational) were introduced to further define the HSDD syndrome. The name and criteria for HSDD remained the same in DSM-IV except that the criterion of having "marked distress or interpersonal difficulty" was added. Thus, the individual with deficient (or absent) sexual fantasies and desire for sexual activity who was not distressed by these symptoms did not meet criteria for HSDD.

Criterion A for HSDD requires "persistently or recurrently deficient (or absent) sexual fantasies and desire for sexual activity" and Criterion B requires that "the disturbance causes marked distress or interpersonal difficulty" (American Psychiatric Association, 2000). In determining whether the lack of sexual fantasies or desire for sexual activity are clinically significant, the DSM-IV-TR instructs that "the judgment of deficiency or absence is made by the clinician, taking into account factors that affect sexual functioning, such as age and the context of the person's life." Criterion C indicates that the lack of sexual desire is not "better accounted for by another Axis I disorder (except another Sexual Dysfunction) and is not due exclusively to the direct physiological effects of a substance or a general medical condition."

Prevalence of Low Sexual Desire in Women

Over the past decade, there have been numerous attempts to document the prevalence of low desire and HSDD in women. There have been some inconsistencies in the findings and methodologies employed—in particular, whether distress was assessed and considered in determining prevalence rates. The National Health and Social Life Survey (NHSLS) is one of the most widely cited studies on the prevalence of sexual problems in women (Laumann, Paik, & Rosen, 1999). Between 27 and 32% of women aged 18–59 who had been sexually active over the past year responded with "yes" to the question: "During the last 12 months has there been a period of several months or more when you lacked desire for sex?" In the National Survey of Sexual Attitudes and Lifestyles (NATSAL) conducted on 11,161 British men and women aged 16–44 who participated in a computer-assisted self-interview, low sexual desire was the most common complaint in women (Mercer et al., 2003). The prevalence of low desire "lasting at least one month" was 40.6% and "lasting at least six months" was 10.2%. In the Global Study of Sexual Attitudes and Behaviors (GSSAB), 13,882 women across 29 countries took part either in a computer-assisted telephone interview or a face-to-face interview (Laumann et al., 2005). Lack of interest in sex was the most common problem in women, ranging from 26 to 43%. Distress was not assessed in these three studies.

Prevalence of Low Sexual Desire and Associated Distress

Researchers have also attempted to quantify the prevalence of low sexual desire (DSM-IV-TR Criterion A) versus the prevalence of low sexual desire and associated distress (DSM-IV-TR Criteria A and B).

In a Swedish study of 1,335 women aged 18–74, 34% of women reported that they experienced decreased sexual interest quite often or most of the time. Among this group, 43% viewed the low desire as a problem (Fugl-Meyer & Fugl-Meyer, 1999). Bancroft, Loftus, and Long (2003) conducted telephone interviews with 987 American women aged 20–65 and examined the prevalence of sexual dysfunction, personal distress, and distress about the relationship. Women aged 20–35 were more likely to view their lack of sexual thoughts as distressing to the relationship and to their own sexuality compared to women aged 36 and older. The prevalence of low desire in this study was operationalized by asking women the frequency with which they thought about sex with interest or desire over the past month. Response options were: not at all, once or twice, once a week, several times a week, and at least once a day, with 7.2% of the women reporting no sexual interest over the past four weeks. Bancroft et al. found that negative mental state was the best predictor of marked distress about the relationship as well as marked distress about the woman's own sexuality (although the authors recognized that the reverse order of causation was also feasible but less likely). Moreover, mental state (e.g., feeling calm and peaceful) was more predictive of relational distress than was physical health, whereas physical health was more relevant to distress about a woman's own sexuality. Interestingly,

perceived impairment in physical genital response was only marginally predictive of distress about the relationship and did not influence personal distress.

Oberg, Fugl-Meyer, and Fugl-Meyer (2004) analyzed Swedish data collected in 1996 and explored mild and manifest low desire (DSM Criterion A) and mild and manifest distress (DSM Criterion B). Manifest dysfunction was considered when the symptom was experienced quite often, nearly all the time, or all the time. Mild dysfunction was considered when the symptom was experienced hardly ever or quite rarely. In their sample of 1,056 women aged 19–65 who had been sexually active in the past year, 89% reported either mild (60%) or manifest (29%) low desire, whereas 59% reported low desire plus the associated mild (44%) or manifest (15%) distress. Thus, when only manifest low desire was considered (i.e., women who reported low desire quite often, nearly all, or all of the time), 29% experienced this symptom and, of this group, 47% had manifest distress, 40% had mild distress, and 13% were not distressed. That 13% of the women with significant symptoms of low desire were not distressed by them is an interesting issue that will be explored further in this review.

The Women's International Study of Health and Sexuality (WISHeS) is an industry-funded international study examining sexual function and distress. One publication based on the WISHeS data focused on 952 mostly White American women who completed the Profile of Female Sexual Function (PFSF) and the Personal Distress Scale (PDS), two measures developed by Procter and Gamble Pharmaceuticals and not in the public domain. Rates of low desire were 24–36%, depending on age and menopausal status (Leiblum, Koochaki, Rodenberg, Barton, & Rosen, 2006). The rates of low desire with distress ranged from 9% (naturally menopausal women), 14% (premenopausal women), 14% (older surgically menopausal women), to 26% (young, surgically menopausal women). International data on the WISHeS study, with a focus on 2,467 European women aged 20–70, found comparable rates. Low desire ranged from 16 to 46%, depending on age and menopausal status (Dennerstein, Koochaki, Barton, & Graziottin, 2006). However, these numbers dropped drastically when the prevalence of low desire and distress together were considered: 7% of premenopausal women, 9% of naturally menopausal women, 12% of surgically menopausal older women, and 16% of surgically menopausal young women. Similar to the findings of Bancroft et al. (2003), this group of European women with HSDD were significantly more likely to endorse negative emotions or psychological states than women with normal desire.

In a more recent study aimed at assessing the prevalence of low sexual desire without (DSM Criterion A) and with distress (DSM Criteria A and B; HSDD), West et al. (2008) used a national probability sample to study the demographic factors associated with low desire and HSDD in women aged 30–70 who were in a relationship for at least 3 months. Data were obtained from 2,207 women through computer-assisted telephone interviews during which women completed the PFSF and PDS. Using a PFSF desire domain cut-off score of 40, the overall prevalence of low desire was 36.2% (20.3% for Black women, 38% for non-Hispanic White women, and 39.6% for Hispanic women). Using a PDS cut-off score of 60 together with low desire, the overall prevalence of HSDD was 8.3% (3.2% for Black women, 9.2% for non-Hispanic White women, and 9.8% for Hispanic women). Naturally menopausal women had the most complaints of low desire (52.4%). Rates of low sexual desire for surgically menopausal and premenopausal women were 39.7 and 26.7%, respectively. However, rates of HSDD were lower for all women but highest for surgically menopausal women (12.5%) compared to 6.6 and 7.7% for naturally menopausal and premenopausal women. Young surgically menopausal women had complaints of low desire matching premenopausal women (26 and 27%), but the highest rates of HSDD, even after controlling for age, race/ethnicity, educational level, and smoking status using an adjusted prevalence ratio. Older women with bilateral salpingo-oophorectomy (BSO) post-menopause also had higher rates of HSDD (15%) while their complaints of low desire matched those of older women with intact ovaries. These data suggest that it is not menopause, per se, that negatively influences sexual desire; rather, surgical menopause in the relatively recent past is linked to distress about low desire (older women with distant BSO had lower prevalence of HSDD, 8.5%). These data also suggest that the prevalence of low desire with distress is significantly lower than the prevalence of low desire alone.

Witting et al. (2008) examined the prevalence of low desire and associated distress in a population based Finnish sample of 5,463 women aged 18–49 using the Female Sexual Function Index (FSFI; Rosen et al., 2000) and a shortened version of the Female Sexual Distress Scale (FSDS; Derogatis, Rosen, Leiblum, Burnett, & Heiman, 2002). Fifty-five percent of the sample experienced low sexual desire (defined as a FSFI desire subscale score <3.16 from a possible range of 1.2–6) and 23% experienced associated distress (defined as a FSDS score >8.75 from a possible range of 0–28). The prevalence of low desire was higher than that reported by Oberg et al. (2004) and West et al. (2008). The low desire plus distress frequency was similar to the rates in Oberg et al. (2004); however, both of these studies showed higher rates of low desire plus distress than the study by West et al. (2008). Also similar to the finding by Oberg et al. (2004) was that this study found a prevalence of distress alone (defined by high FSDS scores), in the absence of low desire (defined by low FSFI desire scores), to be 12.4%. It is possible that the much higher rate of low desire in this trial was due to the use of the FSFI, which focuses on the preceding 4-week interval, instead of interview assessment instruments which may focus on a longer recall period.

Recently, the Prevalence of Female Sexual Problems Associated with Distress and Determinants of Treatment Seeking (PRESIDE) study explored the prevalence of low desire in

31,581 American women aged 18–102 (mean age 49) using the question "How often do you desire to engage in sexual activity" and using the FSDS as the measure of distress (Shifren, Monz, Russo, Segreti, & Johannes, 2008). Low desire (defined as never or rarely desiring sexual activity) was prevalent in 38.7% of women and distress (defined as FSDS score >15) was observed in 22.8% of all women. The overall prevalence of low desire and associated distress was 10.0%. Poor self-assessed physical health and depression were significant risk factors for low desire. In further analyses with this sample specifically exploring the predictors of distress, having a partner was the strongest predictor (with an odds ratio of 4.6) (Rosen et al., 2009). Furthermore, sexual distress was highest in women with a partner who were sexually dissatisfied (as 71% of partnered women with low desire were in fact happy with their relationship). Age had a curvilinear effect such that low desire plus distress was highest in women aged 25–44 (despite the finding that actual rates of low desire were lowest in this group). Surgical menopause, depression, use of hormonal therapy, and history of urinary incontinence were also significant predictors of distress.

Most recently, the second NATSAL was completed on 6,942 British women aged 16–44 (Mitchell, Mercer, Wellings, & Johnson, 2009). In response to a computer-assisted self-interview, 10.7% reported lacking interest in having sex for six months or longer in the past year. A further 27.9% of those sought help for the problem. Whereas increasing age, having a child in the past year, and having children younger than age five at home was associated with persistent lack of sexual interest, seeking help was associated with being married and perceiving a poor health.

The marked variability in prevalence rates of low desire suggests that identifying a single prevalence for the complaint may be difficult and inaccurate. Disparate rates may relate to varying methodological techniques (e.g., interviews versus self-report questionnaires), different operational definitions of low desire, different time periods during which the low desire is experienced (e.g., 1 month versus 6 months), and assessment across cultural groups (or subcultures) where the experience of desire may vary. Moreover, in a later section on Recommendations, I review the implications for including versus not including distress as a necessary criterion for low sexual desire in women in light of the finding that there is a marked increase in the prevalence of low desire if distress is not also taken into account.

Since the diagnostic criteria for HSDD were originally available in DSM-III-R, the definition of HSDD has come under criticism and there have been solid efforts to propose alternative definitions for this most common sexual complaint in women. Part of the challenge in coming to a consensus definition on low sexual desire in women rests upon establishing a unified definition of what sexual desire is (and is not). The definition of desire is reviewed in the next section.

What is Sexual Desire?

One of the inherent challenges in defining sexual desire disorder relates to two factors (which may or may not be related): (1) the operational definition of sexual desire adopted by the DSM and used by clinicians/researchers and (2) the woman's definition/understanding of her own desire. There are problems in the current operational definition of desire in the DSM that has implications for making an accurate HSDD diagnosis. Specifically, there is a known discordance between women's self-definitions of dysfunction and those applied by clinicians (King, Holt, & Nazareth, 2007).

Levine (1987) discussed the biological, cognitive, and emotional aspects of sexual desire. Ultimately, Levine (2002) defined desire as the "sum of forces that incline us toward and away from sexual behavior." However, this behavior-focused proxy of sexual desire leaves us with an incomplete picture as to the true meaning of desire given that a lack of sexual activity may relate more to partner characteristics (e.g., not having a partner, partner having no interest, partner too tired) than to the woman's own level of sexual desire (Cain et al., 2003). Also, some research challenges this definition of desire as it has been shown that many women engage in sexual activity without desire (Beck, Bozman, & Qualtrough, 1991), women may engage/not engage in sexual activity for reasons unrelated to desire (Cain et al., 2003), and desire may be experienced in the absence of sexual activity (Brotto, Heiman, & Tolman, 2009). Moreover, a review of 38 studies found that there are enormous individual differences in the likelihood of, and preference for, sexual activity (Schneidewing-Skibbe, Hayes, Koochaki, Meyer, & Dennerstein, 2008). In addition, whereas Levine (2002) stated that "we desire others for personal comfort by selecting members of the correct gender, age, race, orientation, and degree of attractiveness" (p. 40), more recent research in women shows a lack of such target specificity in that women show a greater degree of genital sexual response based on the sexual nature of the stimulus, and not on the gender or attributes of the person engaging in the sexual activity (Chivers, Seto, & Blanchard, 2007).

Among the validated measures of sexual desire, it is readily apparent that desire is conceptualized in a variety of different ways. For example, whereas the FSFI focuses on frequency and intensity of "feeling sexual desire" (Rosen et al., 2000), the Changes in Sexual Functioning Questionnaire has a multidimensional focus on frequency of sexual activity, frequency of fantasy, experiencing enjoyment with erotic material, and pleasure when thinking about sex (Clayton, McGarvey, & Clavet, 1997). In addition to these aspects of desire, the Sexual Interest and Desire Inventory also focuses on frequency of initiation and receptivity to sex, satisfaction with desire, and responsive sexual desire (Clayton et al., 2006). The Sexual Desire Inventory takes a more cognitive approach to measuring desire and explores a variety of desire domains including: frequency of liking sexual

activity, desire in response to seeing someone attractive, importance of "fulfilling" desire with sexual activity, strength of desire for sex with a partner versus by oneself, etc. (Spector, Carey, & Steinberg, 1996). Collectively, this suggests that depending on the measure used, definitions of desire may differ significantly. This has obvious implications for determining the prevalence of self-reported desire concerns.

Although the DSM adopts a definition of desire that focuses on absent or deficient sexual fantasies and desire for sexual activity, women themselves may not necessarily consider fantasies and desire for sex to be a feature or element of how their desire is expressed. In a recent qualitative study of mid-aged women with and without sexual dysfunction, the majority of women did not discuss fantasies in their experiences of desire, although the vast majority did endorse having fantasies on a questionnaire (Brotto et al., 2009). Brotto et al. suggested that rather than fantasy being an expression of desire, some women may deliberately evoke fantasy as a way to boost their sexual arousal. It follows, then, that the current DSM-IV-TR inclusion of "lack of fantasies" in Criterion A for HSDD is problematic for overpathologizing women and needs to be critically evaluated. Also, when 3,262 multi-ethnic perimenopausal women were asked about their frequency of desire to engage in sexual activity, 70% of the sample reported less than once a week; however, the majority (86%) were at least moderately to extremely physically sexually satisfied (Cain et al., 2003). Similarly, among 5,892 women with low desire and a partner, the majority (71.2%) were happy with the relationship (Rosen et al., 2009). Rosen et al. suggested, therefore, that focusing on the *frequency* of desire is much less relevant to women than focusing on the *intensity* of desire given that the former may relate more to lack of time and/or energy, or other factors.

There may also be differences in how clinicians/researchers define sexual desire compared to how women themselves describe it. A study by King et al. (2007) compared the degree of agreement between ICD-10 clinical diagnoses of sexual dysfunction and women's perceptions of their own sexual problems. The Brief Index of Sexual Functioning for Women Questionnaire (BISF; Taylor, Rosen, & Leiblum, 1994), which provides information sufficient to make an ICD-10 clinical diagnosis, was administered to 401 women attending a general practice clinic in the UK. Women were also asked if they thought they had any kind of sexual problem and how distressing it was for them. Women who were and were not currently sexually active were included in analyses. Based on responses to the BISF, 38% of women were diagnosed with at least one ICD-10 sexual dysfunction. Among women with an ICD-10 diagnosis who also self-reported a sexual problem, the prevalence dropped to 18%. The prevalence dropped even further to 6% if women had the diagnosis and also reported distress. There was more agreement between the diagnosis and self-report of problems for dyspareunia (74%) and vaginismus (77%) than for sexual arousal disorder (38%) and sexual desire disorder (39%). A mere 48% of women given an ICD-10 diagnosis agreed that there was a sexual problem but 69% of women with no diagnosis agreed that there was no problem. Age, ethnicity, employment, and recent sexual activity were unrelated to these associations.

Interestingly, 19% of women did not receive an ICD-10 diagnosis but self-reported sexual difficulties and experienced low sexual satisfaction. This study suggested that the criteria used by clinicians to diagnose a sexual dysfunction may not be relevant to how women themselves define whether or not they had a sexual problem. This finding has been supported by others. Bancroft et al. (2003) concluded that responses to investigator-derived definitions of low desire differed from women's own accounts of their sexual problems. Similarly, in another study of 290 British women aged 18–75, 79% indicated being very satisfied with their current sex life despite the finding that 24% had not engaged in any sexual activity over the past 3 months (Dunn, Croft, & Hackett, 2000). The findings from these studies suggest that the current assessment of HSDD in women suffers from a high false positive rate when women are asked directly whether they feel they have a sexual dysfunction and that lack of sexual activity is an unreliable indicator of sexual dissatisfaction. They also raise the possibility that relative infrequency may be the preference for some women. This was also suggested in a study showing that midlife women's sexual satisfaction was higher when their partner's relative physical impairment precluded frequent sex (Avis, Stellato, Crawford, Johannes, & Longcope, 2000).

A large body of research from The Netherlands (Both, Everaerd, & Laan, 2003; Both, Spiering, Everaerd, & Laan, 2004; Everaerd & Laan, 1995; Laan & Everaerd, 1995; Laan, Everaerd, van der Velde, & Geer, 1995) has supported an incentive-motivation model of sexual response, which has implications for our understanding of sexual desire. This model argues that motivation is not located "within" the individual but that it emerges in response to sexual stimuli (Singer & Toates, 1987). As far as sexual desire is concerned, this research suggests that all desire is triggered (i.e., responsive) and that the processing of sexual stimuli will prepare the person for action. An awareness of sexual desire occurs when feedback from the physiological changes of arousal goes beyond the threshold of perception. A person's "arousability" is their disposition to being able to be pushed towards sex, and this is thought to differ among individuals and be dependent on a number of neurophysiological, personal, psychological, and cultural factors (Laan & Both, 2008). This research also suggests that increases in sexual arousal are accompanied by increases in sexual desire. Thus, the distinction between sexual arousal and desire may be difficult, if not impossible, which has implications for making a diagnosis of a subjective sexual arousal disorder. Certainly, when women are asked about the distinction between desire and subjective arousal, many express conflation (Brotto et al., 2009). One way that desire and arousal may be distinguished is that desire is the subjective experience of a willingness to behave sexually

whereas arousal is the subjective experience of genital changes (Laan & Both, 2008; Prause, Janssen, & Hetrick, 2008).

Supporting this incentive-motivation model of sexual desire in women are data which show the large number of cues which provoke sexual desire (125) and sexual activity (237) in women (McCall & Meston, 2006, 2007; Meston & Buss, 2007). Engaging in sexual activity "because the opportunity presented itself," "because I was horny," or "because the person was there" were unlikely reasons women provided for engaging in sexual activity. (The most common reasons women provided for engaging in sex were: I was attracted to the person, I wanted to experience physical pleasure, It feels good, I wanted to show my affection for the person, and I wanted to express my love for the person; Meston & Buss, 2007.) Because the incentive-motivation model posits that all of sexual desire is triggered, this raises concerns about the DSM-IV-TR Criterion A, which partly defines HSDD according to the lack of "sexual fantasies." It has been argued that Criterion A describes a more "spontaneous" (i.e., untriggered) form of sexual desire, which may not be relevant for many women (Basson, 2006). It is very interesting to note that in the *DSM-IV Sourcebook* in the section on sexual desire disorders, the subworkgroup had recommended that "it may be worth considering for a future DSM to further define HSDD criteria to include the seeking out of sexual cues (or awareness of cues)" (Schiavi, 1996, p. 1100). This recommendation never made it into the final criteria set for HSDD in the DSM-IV-TR (American Psychiatric Association, 2000).

Over the past 10 years, Basson (2000) has published a series of expert opinion papers that provided clinical support for the incentive-motivation model of desire and which challenged the Masters and Johnson/Kaplan model of women's sexual response. Arguing from a clinical perspective, Basson stated that triggered sexual desire (which she terms "responsive desire") more often reflects the experiences of women than spontaneous (i.e., untriggered) desire (Basson, 2001a, b, 2002, 2003, 2006). The motivational theory of desire, which portrays it as an action tendency to rewarding internal or external sexual stimuli, also supports desire which is responsive. Basson has described and encouraged the adoption of an alternative sexual response cycle that is based on responsive sexual desire or desire that emerges from a sexual situation, augmented only on some (possibly infrequent) occasions by initial or "spontaneous" desire. Her critique emerged from earlier criticisms (e.g., Tiefer, 1991) against the linear sexual response cycle proposed by Masters and Johnson and Kaplan, and adopted by the DSM. In particular, the Masters and Johnson and Kaplan model purports that women (and men) first experience sexual desire before experiencing sexual arousal. Although the wording of HSDD in the DSM does not make this explicit, many have interpreted the fact that the DSM is based on Masters and Johnson's and Kaplan's model to imply that desire is something experienced at the beginning of a sexual experience, and certainly prior to sexual arousal. In fact, Kaplan (1977, 1979) defined desire as "sensations that motivate individuals to initiate or be receptive to sexual stimulation" and she divided these into spontaneous desire triggered by internal stimulation or sexual desire triggered by external stimulation (e.g., seeing an attractive partner). Thus, if a woman does not endorse sexual thinking or fantasies (presumably thinking and fantasies which are not first triggered by arousal or triggered by her partner, her environment, or herself), then she would meet criteria for DSM Criterion A. A second aspect of Basson's critique focused on the linear nature of the Masters and Johnson/Kaplan sexual response cycle. Again summarizing the research of others, Basson argued that desire and arousal emerge and are experienced simultaneously. Particularly for women in long-term relationships, where novel and powerful stimuli are less prevalent (Perel, 2006) this model states that sexual desire emerges after arousal, and not vice versa. In reality, the precise distinction between desire and arousal may not be entirely clear (e.g., Brotto et al., 2009; Graham, 2009).

Basson's reconceptualization of the sexual response cycle for women focused on the motivations/incentives for initiating sexual activity, rather than spontaneous desire. In other words, this views the infrequency or absence of spontaneous desire for sexual activity as a normative experience among many women in long-term relationships. In fact, even among college-aged students in a relationship of average length 13 months, 50% of the female participants reported having engaged in consensual sexual activity without sexual desire in the past two weeks, and 93% had done so at any time with their current partner (O'Sullivan & Allgeier, 1998). The most common reasons provided for engaging in sexual activity without sexual desire were: the partner's satisfaction and promotion of relational intimacy and prevention of relational discord. By extension, if one adopts the view that sexual desire is triggered, then a more appropriate determination of low desire would be the woman who never experiences sexual desire at any point during a sexual encounter—before or *after* experiencing sexual arousal.

There has been some support for this definition, focused on responsive sexual desire, but there has also been notable criticism. In support, a recent study on Malaysian women found a high degree of overlap in the desire and arousal domains of the FSFI and these domains loaded onto one factor (Sidi, Naing, Midin, & Nik Jaafar, 2008). Sidi et al. concluded that this provided support for the Basson circular model of sexual response given the high degree of overlap between response phases. In a quantitative study of 141 community-recruited women aged 40–60, reports of spontaneous sexual thoughts were low and the majority of women, across menopausal categories, reported the frequency of sexual thoughts as mostly being "never" or "once/month" (Cawood & Bancroft, 1996). An earlier random sample of 40-year-old Danish women found that a significantly greater proportion of women endorsed sexual desire in response to something the partner did as opposed to *having* sexual desire at the outset (Garde & Lunde, 1980). In the SWAN study, 78% engaged in sexual

activity and the majority were physically, emotionally, and sexually satisfied, experienced physical pleasure, almost always experienced arousal, and usually did not have pain (Cain et al., 2003). The majority (77%) also reported that sex was moderately to extremely important. Nonetheless, most of the women also had infrequent sexual desire (0–2/month).

A model of sexual response that focuses on responsive desire is open to criticism because it has never been directly empirically tested. In one study which attempted to compare which models of sexual response a group of 111 nurses (currently in a relationship) endorsed, those women who identified with a written description of the Basson model (compared to the Masters and Johnson model or to the Kaplan model) had the lowest scores on the FSFI, suggesting that the Basson model was only fitting for women with extreme forms of sexual dysfunction (Sand & Fisher, 2007). However, the results were not surprising since Sand and Fisher used a measure of sexual desire that rewards spontaneous sexual desire. This study importantly pointed out that women did not endorse one model of sexual response. More recently, an Australian study found that women with and without sexual dysfunction were equally likely to endorse a circular model of responsive sexual desire (Giles & McCabe, 2009). In support of the circular model of responsive desire, other research exploring cues for sexual desire in pre- and post-menopausal women found that most women endorsed a variety of "cues" which triggered their sexual desire, and the only factor that differentiated women with and without HSDD was that the former had fewer cues for their desire (McCall & Meston, 2006, 2007). Among women in the SWAN study (all of whom were in established relationships), spontaneous sexual desire was an infrequent reason provided for engaging in sexual activity, and lack of partner (not lack of desire) was the most frequent reason for not engaging in sexual intercourse (Cain et al., 2003). In a separate set of analyses focused on 2,400 women from this sample, 41.4% reported that they never or infrequently felt sexual desire (Avis et al., 2005). Despite this, 86% were moderately to extremely sexually satisfied, and the majority reported no problems with sexual arousal. In a more recent qualitative study of mid-life women with and without sexual dysfunction, Brotto et al. (2009) found that the majority of women in both groups could relate to a model of responsive sexual desire. It may be that the expression of desire may differ as a function of assessment method (e.g., self-report questionnaires, provided written descriptions of different models of desire, or assessed through qualitative interviews). In addition, none of the previously used validated measures of desire are based on acceptance that responsive desire may normatively overshadow untriggered desire (Althof, Dean, Derogatis, Rosen, & Sisson, 2005).

Thus, there is both clinical and empirical support suggesting that sexual desire is commonly a triggered (i.e., responsive) experience and, therefore, a lack of spontaneous sexual desire should not be pathologized. In consideration of the DSM-V definition of sexual desire disorder, this finding must be taken into account.

Fantasy is another aspect of the current DSM criteria that requires evaluation. Criterion A includes "persistently or recurrently deficient (or absent) sexual fantasies and desire for sexual activity." However, there are inadequate data available to support "lack of sexual fantasies" as a necessary feature of desire. Instead, the available data suggest that absence of sexual fantasies (like lack of spontaneous sexual desire) may be rather normative among the majority of women, and this may be without apparent sexual dissatisfaction. Sexual fantasies and sexual satisfaction in women are not found to correlate (Bancroft et al., 2003; Cain et al., 2003). Fantasies, instead, are often deliberately (i.e., not spontaneously) evoked as a means of boosting sexual arousal (Beck et al., 1991; Hill & Preston, 1996; Lunde, Larsen, Fog, & Garde, 1991; Purifoy, Grodsky, & Giambra, 1992; Regan & Berscheid, 1996). Sexual fantasies in women decrease in frequency with age (Purifoy et al., 1992). Moreover, there are observed gender differences in the frequency of sexual urges (men experience them more often), and men tend to have greater sexual imagery (Jones & Barlow, 1990). The content of fantasies for men and women differ, with men being more likely to have fantasies for activities they do not engage in and women having fantasies that correlate with their own actual experiences (Hsu et al., 1994). Thus, it is possible that fantasies may be a construct more relevant to men's sexual desire than women's. As discussed in a later section, absence of fantasies as a necessary criterion for HSDD is highly problematic.

Other Classification Systems

Influenced by clinical evidence that women's sexual desire is responsive, and by the emerging psychophysiological data from The Netherlands, the International Classification Committee, a convened international panel of experts in sexology practice and research, who met in 2002–2003 to make revisions to the DSM-IV-TR criteria, offered the following definition of "Women's sexual interest/desire disorder":

> Absent or diminished feelings of sexual interest or desire, absent sexual thoughts or fantasies and a lack of responsive desire. Motivations (here defined as reasons/incentives) for attempting to become sexually aroused are scarce or absent. The lack of interest is considered to be beyond a normative lessening with life cycle and relationship duration. (Basson et al., 2003)

Although this revised definition has appeal in that it reduces pathologizing of women who lack spontaneous sexual desire but who retain responsive sexual desire, a notable criticism is that there is, at present, inadequate empirical data to support this definition of desire disorder in which lack of both spontaneous and responsive sexual desire are necessary criteria. Again, based on the findings of Sand and Fisher (2007), women do not unanimously endorse one model of sexual response. Of note, the

composite Basson (2006, 2008) model allows for the known variability of women's experience and flexibility of their sexuality. Both responsive and spontaneous desire might contribute in any one encounter to different degrees. However, if for a given woman responsive desire is typically the major contribution, this may be no more "dysfunctional" than if apparently spontaneous desire governed her experiences, possibly leading to risk taking, unhealthy relationships, or promiscuity and subsequent distress.

It is possible that a complete "overhaul" of the DSM classification system for sexual dysfunctions is needed. A different categorization of sexual dysfunction in women, stemming from a feminist perspective and anti-medicalization approach, preferred a system which completely removed the pathologizing "hypoactive sexual desire disorder" language. In response to a reductionistic view of women's sexual problems and their treatments, and the medical model which compartmentalizes mind-body influences, The Working Group for a New View of Women's Sexual Problems (2000), chaired by Tiefer, offered a new classification scheme for women's sexual dysfunction that was a radical departure from the symptom-focused system adopted by the DSM and ICD. Tiefer (2001) argued that a worrisome combination of mistaken claims (errors of commission) and leaving out too much information (errors of omission) provided strong justification for the New View.

In the New View, which was organized around the etiology of women's sexual problems, women could identify their own sexual problems, which they defined as "discontent or dissatisfaction with any emotional, physical, or relational aspect of sexual experience." Specifically, there are four categories of sexual problems in the New View: (1) sexual problems due to sociocultural, political, or economic factors; (2) sexual problems relating to partner or relationship; (3) sexual problems due to psychological factors; and (4) sexual problems due to medical factors. The advantage of this model is that it avoids defining any one particular pattern of experience, focuses on causation which would guide treatment, and is sensitive to the important influence of sociocultural, political, and economic factors that influence sexual function. In a recent study that explored the extent to which the New View framework corresponded with women's accounts of their sexual difficulties, an open-ended questionnaire was administered to 49 British women who were asked to describe their sexual difficulties in their own words (Nicholls, 2008). Using language equivalents and thematic content, women's accounts of their difficulties were divided into 108 distinct issues. Sixty-seven percent could be classified according to the New View system at a subcategorical level. At a higher thematic level, 31% of difficulties could be categorized which could not be categorized at a lower, subcategory level. Overall, 98% of the sexual issues could be classified by the New View scheme. The majority (65%) of problems were classified as problems relating to partner or relationship; 20% were problems resulting from sociocultural, political, or economic factors; 8% were associated with psychological factors, and only 7% were problems resulting from medical factors. This is the only study, to date, providing a direct empirical test of the classification system outlined in The New View.

Whereas the New View classification is an improvement over the DSM perspective of a linear model of sexual response which is based on a medical model of men's sexuality, it does represent a radical departure from the DSM system, which may have implications for the continuity of research between the two systems. An overriding question exists: Is it useful to diagnose sexual dysfunction on the basis of causes rather than on the basis of symptoms? In many cases of diagnosing a sexual dysfunction, it is difficult, if not impossible, to ascertain the precise etiological causes and many different causes interact with one another (Basson, 2006). Thus, if a problem of low desire is due to both medical and psychological factors, it is unclear how the New View would categorize this given that medical and psychological etiologies are on different domains. Moreover, the DSM symptom criteria for all categories are not based on a presumed etiology but rather on symptom presentation. A different, although related, alternative is to focus on the reason why people seek treatment for sexual difficulties, i.e., the distress (Nathan, 2003; L. Tiefer, personal communication, May 20, 2009). A single disorder of Sexual Response Distress, and eliminating HSDD (as well as Female Sexual Arousal Disorder and Female Orgasmic Disorder) would capture the issue presenting for treatment and would overcome the problematic and well-documented overlap between desire, arousal, and orgasm (as reviewed by Graham, 2009). This intriguing idea deserves consideration.

Hartmann, Heiser, Ruffer-Hesse, and Kloth (2002) also proposed that a new classification system for women's sexual function be considered in light of the high degree of overlap among the different sexual dysfunctions. They suggested that sexual problems were not the result of a single phase of a "virtual response cycle," but, rather, sexual problems may be due to a global lack of interest, arousability, and arousal. Thus, they suggested that sexual desire disorder be classified as being (i) in combination with sexual arousal disorder, (ii) in combination with orgasmic disorder, (iii) associated with depressive symptoms, (iv) associated with low self-esteem, and/or (v) associated with partner conflict. They also concluded that a new classification system must take etiology into account. Unfortunately, there has been no direct empirical test of the utility of this proposed system; however, Hartmann et al.'s observation that sexual desire and (subjective) arousal are difficult to differentiate, and may be experienced as one and the same for women (Brotto et al., 2009; Graham, 2009), is an issue that will be elaborated upon more fully later in this paper, and one that should be considered for DSM-V.

Deconstructing the DSM-IV-TR Criteria for HSDD

Specific features of the DSM-IV-TR (American Psychiatric Association, 2000) criteria for HSDD will now be considered first with an attempt to highlight aspects of the definition that should be preserved followed by specific recommendations for change. Criterion A for HSDD requires "persistently or recurrently deficient (or absent) sexual fantasies and desire for sexual activity" and Criterion B requires that "the disturbance causes marked distress or interpersonal difficulty." Moreover, we are told that "the judgment of deficiency or absence is made by the clinician, taking into account factors that affect sexual functioning, such as age and the context of the person's life." Criterion C indicates that the lack of sexual desire is not "better accounted for by another Axis I disorder (except another Sexual Dysfunction) and is not due exclusively to the direct physiological effects of a substance or a general medical condition." Following from these criteria, the issues to be considered, in turn, are (1) the meaning of persistent and recurrent; (2) sexual fantasies and desire for sexual activity; (3) the disturbance causes marked distress and (4) interpersonal difficulty; (5) judgment of deficiency is determined by the clinician; (6) not better accounted for by another Sexual Dysfunction; and (7) terminology of "hypoactive" and "desire."

The Meaning of "Persistent and Recurrent"

Mitchell and Graham (2007) and Balon (2008) suggested that a new diagnostic system must not overpathologize normal variation and that the inclusion of objective cut-off points (e.g., frequency and duration) for symptoms may circumvent this problem. The DSM-IV-TR text for HSDD indicates that "occasional problems with sexual desire that are not persistent or recurrent or are not accompanied by marked distress or interpersonal difficulty are not considered to meet criteria for hypoactive sexual desire disorder" (American Psychiatric Association, 2000). However, persistent and recurrent are not clearly operationalized in the DSM. This is not a unique feature of HSDD; rather, none of the sexual disorders are associated with specific criteria for frequency and/or duration. Recently, there have been efforts towards providing more objective cut-off criteria for premature ejaculation (McMahon et al., 2008), but very little, if any, comparable data for the other sexual dysfunctions exist. By not including specific cut-off criteria for duration and frequency of symptoms, there is a danger of pathologizing normal variations in sexual desire (Mitchell & Graham, 2007). Notably, data on the optimal frequency of low desire for designating desire disorder and the specific duration of complaints have not been reported on in the empirical literature. Also these are difficult data to obtain given that they would require a method of objectively quantifying low desire that is reliable and valid. (In research on men, ejaculatory latencies were quantified with a stopwatch but there is no analogue to this for measuring women's desire.) As reviewed in an earlier section, validated questionnaires differ markedly on how desire is operationalized. Such an attempt at objectively quantifying desire (and lack thereof) in terms of intensity and frequency would also need to be sensitive to potential cultural variations in how desire is expressed. Sexual desire has been found to be significantly lower in East Asian compared to Euro-Canadian/American university samples (Brotto, Chik, Ryder, Gorzalka, & Seal, 2005) as well as in population-based samples of mid-aged women (Cain et al., 2003; Laumann et al., 2005), and increasing acculturation to the mainstream culture is associated with increasing levels of sexual desire (Brotto et al., 2005). Moreover, there are cultural differences in sex guilt which specifically mediates the relationship between ethnic group and sexual desire (Woo, Brotto, & Gorzalka, 2009). Whether sexual desire is indeed lower among East Asian compared to North American samples, or whether this finding is an artifact of cultural differences in how sexual desire is conceptualized, remains unknown. Thus, the determination of optimal cut-off points for when low desire is considered problematic must be sensitive to cultural nuances. At present, there is no recommendation in the DSM to help guide the clinician to account for cultural factors in low desire.

At hand when considering the meaning of "persistent and recurrent" is the issue of frequency and of severity in low sexual desire. In the FSFI (Rosen et al., 2000)—the most common self-report measure of sexual response in women—the desire domain is assessed as a composite of one question assessing the frequency of sexual desire and another question about the level (degree) of sexual desire. Whether a reduction in sexual desire is experienced more often in duration or severity, however, has never been empirically tested. In a series of papers by Balon (2008), Balon, Segraves, and Clayton (2007), and Segraves et al. (2007), one of their strong recommendations was that a duration criterion of 6 months or more be added to sexual dysfunctions. This time duration was chosen given the finding of the NATSAL surveys (Mercer et al., 2003; Mitchell et al., 2009) that lack of interest in sex in the past month was significantly more common (40.6%) than lack of interest lasting for six months (10.2%). Epidemiological data on the persistence of low desire for intervals between one and six months are not available. Balon et al. also recommended that the symptom of low desire be present in 75% or more of sexual encounters (Balon, 2008; Balon et al., 2007; Segraves et al., 2007). This frequency corresponds to the "usually always/always" criteria in the study by Oberg et al. (2004), who labeled these as "manifest dysfunction" and found them to be less common (29%) than "mild dysfunction" (i.e., rarely or sometimes present; 60%). However, among women who are not in relationships, the relevance of the 75% criterion is questionable. For single women, it is possible that only the duration criteria would be

considered. The addition of 6 months duration and 75% or more of sexual encounters appear to be reasonable objective cut-points; however, the small number of studies on which these recommendations are based suggests that they need to be directly tested for reliability and validity in field trials.

Sexual Fantasies and Desire for Sexual Activity

As reviewed earlier, the inclusion of absent sexual fantasies as a necessary criterion for HSDD is problematic given the low frequency with which untriggered fantasies occur in women. There is also strong evidence that women deliberately evoke fantasy as a means of boosting arousal. Moreover, as reviewed earlier, women with and without sexual dysfunction provide many different reasons for engaging in sexual activity and desire is but one. Thus, the absence of "desire for sexual activity" may not be a sufficient marker of sexual desire disorder in women. It is possible that any revision to the criteria for HSDD may include lack of sexual fantasy as one potential marker of low desire, but that there are other ways in which low desire is manifested. Similarly, lack of desire for sex may be one way in which the woman's low desire is expressed.

At present, HSDD is diagnosed according to monosymptomatic criteria, i.e., if the woman experiences problems with sexual fantasies and desire for sexual activity then she meets the necessary symptom criterion A for HSDD. In consideration of the literature findings for the low baserate of spontaneous sexual fantasies, and that sexual activity is sought for any number of reasons unrelated to desire, this calls for the consideration of other criteria to define presence of a desire disorder. This would require desire to be assessed according to a predetermined number of symptoms taken from a validated list. The precise number of symptoms required for a sexual desire disorder to be met would require validation in field trials; however, some symptom possibilities based on this literature review might include: lack of sexual thoughts, lack of sexual fantasies, lack of motivation to be sexual, lack of initiation or receptivity to sexual activity with a partner, and lack of responsive sexual desire.

"The Disturbance Causes Marked Distress"

As reviewed earlier, there are obvious problems with including distress as a necessary criterion (Criterion B) for making a diagnosis of sexual desire disorder (Althof, 2001). "Personal distress" as a criterion is problematic as it overemphasizes the role of the individual to the exclusion of partner influences (Bancroft, Graham, & McCord, 2001; Mitchell & Graham, 2007). "Interpersonal distress" is also problematic because it does not solve the problem of how to handle the diagnostic dilemma of whether to diagnose a sexual desire disorder in a situation where the woman is not bothered and experiences no distress over her loss of desire whereas her partner is distressed. Using premature ejaculation as an example, it is obvious how the inclusion of distress as a necessary criterion creates conceptual problems. Why should the man who ejaculates within 10 s of penetration not be considered to have a sexual dysfunction on the basis of not being bothered by his abnormal sexual response? Similarly, for the woman who cannot reach orgasm in any sexual situation and with any form of stimulation despite reaching a high level of sexual arousal: it is illogical for her not to receive a diagnosis of Female Orgasmic Disorder simply because she is not bothered by her anorgasmia. From The New View perspective, however, this position assumes that orgasm is a normal/natural state and that its absence denotes pathology.

With low desire, however, the picture is not as clear. Distress seems more important to the delineation of whether or not the symptom of low desire constitutes a problem or not and whether or not individuals will seek treatment. For example, there is a small but growing body of literature on the phenomenon of human asexuality (Bogaert, 2004, 2006; Brotto, Knudson, Inskip, Rhodes, & Erskine, 2008; Prause & Graham, 2007; Scherrer, 2008), defined as lifelong lack of sexual attraction. Asexuals commonly do not experience sexual desire; however, they are not distressed over the low/absent desire. Asexuality has been described as a sexual identity (Bogaert, 2006; Brotto et al., 2008) as opposed to a sexual dysfunction on the basis of finding that the only distress experienced by asexual persons is in reaction to sociocultural pressures to be sexual, and pathologizing those who do not wish to be sexual. The removal of distress from the criteria for HSDD may lead to the unfortunate labeling of asexuals as having a sexual dysfunction and there is strong opposition to this view among the asexual community (Brotto et al., 2008). Although research on asexuality is still in its infancy, there is also insufficient evidence to suggest that asexuality is a sexual dysfunction of low desire. I would forward that the DSM-V consider making this point in the text or adding it to the list of exclusion diagnoses.

As reviewed in an earlier section and summarized in Table 1, the prevalence of low desire without distress is significantly higher (in some cases double) than the rates of low desire with distress. Hayes (2008) highlighted some important conceptual consequences of not including distress in the definition of HSDD in epidemiological research. Specifically, this review found that low desire and age are positively correlated (i.e., complaints of low desire become more prevalent as women age); however, low desire, together with its associated distress, is not significantly associated with age (Bancroft et al., 2003; Hayes, 2008; Rosen et al., 2009). In analyses of both European and American women participating in the WISHeS study, Hayes et al. (2007) found low desire to significantly increase with age but the proportion of women with low desire who were distressed by it decreased with age, suggesting

that, perhaps, it is only younger women who may be distressed by their low desire. By including distress into the symptom criteria, important information about the association between low desire and age was reversed. Thus, the decision to include versus not include distress in the operational definition of desire disorder will not only have implications for determining its prevalence, but also for determining associated risk factors.

On the other hand, in the clinical setting, it is unlikely that a woman would seek treatment for her low desire unless she experienced some degree of personal and/or relational distress. Indeed, the best predictor of distress with low desire was relationship status (Rosen et al., 2009). Thus, in the majority of clinical situations in which a DSM-V diagnosis would be made, distress would likely be present. The issue of elevated levels of desire disorder if distress is no longer considered part of the criteria, therefore, becomes more of an issue in epidemiological and basic scientific research.

There may be alternatives to capturing distress that do not require it to be a necessary symptom criterion. For example, Mitchell and Graham (2007) recommended that distress could be included as a specifier (just as lifelong versus acquired has been in the DSM-IV-TR). This option was adopted by the 2003 Consensus Group (Basson et al., 2003). Another option to consider is whether distress could be included as a dimensional criterion for HSDD in which women would be rated on a Likert scale corresponding to their level of distress. The inclusion of dimensional criteria in the DSM has been considered for many years in response to the problems of categorical decision making, and may be given serious consideration for DSM-V (Kraemer, 2007; Rounsaville et al., 2002). Dimensional criteria may become a more common feature across many of the disorders within DSM-V. Specifically, Kraemer (2007) suggested that a dimensional adjunct could be *added* to a DSM criterion. Oberg et al. (2004) used the delineations of mild versus manifest distress and that may be one useful scheme to follow, with two additional anchor points at the extreme ends. Thus, a woman may experience (0) no, (1) mild, (2) manifest/moderate, or (3) extreme distress associated with her low desire. It might also be possible to add as a specifier whether the distress was personal or in regards to the woman's relationship (cf. Bancroft et al., 2003). Clearly, the reliability and validity of a dimensional criterion of distress remains to be tested in field trials.

"The Disturbance Causes Interpersonal Difficulty"

Mitchell and Graham (2007) argued that the DSM-V must avoid pathologizing normal variation. They noted that previous recommendations (e.g., Basson et al., 2000) placed too much emphasis on the individual by including the criterion of "personal distress." Discrepancies in partners' levels of sexual desire are common in the clinical setting, reflecting an interactional system of dyadic sexual desire (Heiman, 2001). Thus, for a diagnostic system to be clinically applicable, it should take into account couple-level dysfunction. At present, there is no way to document or quantify the extent of the relational influence on sexual dysfunction in the DSM-IV-TR. However, it is interesting that "Relational Disorders" have been given consideration for DSM-V as being "serious behavioral disturbances in a relationship of two or more people" (First et al., 2002). Moreover, in a table of proposed relational disorders, First et al. list "Sexual Dissatisfaction" as an empirically derived characteristic of marital relational disorders.

The DSM-IV-TR Criterion B for HSDD indicate that there must be distress or "interpersonal difficulty." Some have suggested that the relationship between sexual difficulties and distress may be more a product of relationship influences as opposed to other potential predictors. It is known that sexual problems can exist without distress, and that one may experience distress with no manifest sexual problems. The precise reasons for this are unclear; however, Bancroft et al. (2003) noted that the occurrence of distress was closely associated with relationship quality, and Rosen et al. (2009) found that relationship status was the single most predictive factor accounting for distress in women with low desire. In support of this are the findings that women linked their sexual problems to emotional strain in the relationship (King et al., 2007), sexual distress is associated with poor partner communication (Hayes, Dennerstein, Bennett, & Fairley, 2008), and there is an association between sexual distress and a partner's sexual dysfunction (Byers & Grenier, 2003; Cayan, Bozlu, Canpolat, & Akbay, 2004; Oberg et al., 2004). In longitudinal work following women through the menopausal transition, relationship status and feelings for the partner were significantly more predictive of sexual response than other variables, including changes in estrogen (Dennerstein, Lehert, & Burger, 2005). In a recent study exploring the relationship between partner compatibility (a broad term including ability to communicate one's needs, sharing emotions, etc.) with sexual dysfunction in women, Witting et al. (2008) found compatibility items to be significantly associated with sexual distress. Having a partner who is more interested in sex than the woman was a major predictor of low desire. Other significant compatibility factors for predicting low desire were: partner not stimulating the right way, a belief that the partner believes the woman is not "doing things the right way" during sex, the partner having sexual needs that the woman believes she cannot satisfy, the woman having sexual needs that the partner cannot satisfy, and not finding the partner attractive (Witting et al., 2008). Others have found sexual compatibility to predict depression and sexual stress, and higher compatibility was associated with a greater likelihood

Table 1 Epidemiological studies assessing the prevalence of low desire in women

Study	Sample characteristics	Country	Age	In a sexual relationship	Method of assessment	Distress measured	Prevalence
Laumann et al. (1999)	1,749 women (NHSLS)	United States	18–59	Had to be sexually active over the past 12 months	In-person interview	No	27–32% based on age group
Fugl-Meyer and Fugl-Meyer (1999)	1,335 women	Sweden	18–74	Not necessary	In-person interview	Indirectly with the question: "Has this been a problem in your sexual life during the last year?"	Sexual disability was defined as having low desire quite often/nearly all the time/all the time = 34%. Among these, 43% viewed it as a problem
Mercer et al. (2003)	11,161 men and women (NATSAL)	Britain	16–44	Must have had at least one heterosexual partner in past year	Computer-assisted telephone-interview	No	40% had low desire for at least 1 month; 10% had low desire for at least 6 months
Bancroft et al. (2003)	987 women; half were African-American	United States	20–65	Not necessary	Telephone audio computer assisted self-interviews. Desire assessed with "what is the frequency with which you thought about sex with interest or desire over the past month?"	Assessed distress over the relationship and distress to one's own sexuality	7.2% prevalence of low desire
Oberg et al. (2004)	1,056 women recruited in 1996	Sweden	19–65	Must have had sexual intercourse once in past year	Face-to-face interview. Manifest low desire: low desire quite often, nearly all, or all of the time	Manifest distress: Concomitant personal distress quite often, nearly all the time, or all the time	60% mild low desire, 29% manifest low desire, 44% low desire plus mild distress, 15% low desire plus manifest distress
Laumann et al. (2005)	13,882 women recruited. Analyses based on 9,000 sexually active women (GSSAB)	29 different countries	40–80	Must have had sexual intercourse once in past year	Computer-assisted or face-to-face interviews	No	26–43% across countries
Leiblum et al. (2006)	952 surgically or naturally postmenopausal women (WISHeS)	United States	20–70	Currently sexually active	Questionnaire completion	Measured with Personal Distress Scale	24–36% depending on age and menopausal status. Among those who also had distress, rates of HSDD ranged from 9 to 26%
Dennerstein et al. (2006)	2,467 women (WISHeS)	European countries—France, Germany, Italy, and United Kingdom	20–70	Currently sexually active	Questionnaire completion	Measured with Personal Distress Scale	16–46% depending on age and menopausal status. Among those who also had distress, rates of HSDD ranged from 7 to 16%
West et al. (2008)	755 premenopausal, 552 naturally menopausal, and 637 surgically menopausal women	United States	30–70	In stable relationships for at least 3 months	Questionnaire completion	Personal Distress Scale	Overall rate of low desire 36.2%. Overall rate of HSDD 8.3%

Table 1 continued

Study	Sample characteristics	Country	Age	In a sexual relationship	Method of assessment	Distress measured	Prevalence
Witting et al. (2008)	5,463 women	Finland	18–49	Must have engaged in sexual activity with a partner over the past 4 weeks	Questionnaire completion	Female Sexual Distress Scale	Using a FSFI cut-off score of 3.16, 55% had low desire. Using a FSDS cut-off score of 8.75, 23% had low desire and distress
Shifren et al. (2008)	13,581 women PRESIDE	United States	18–102	Not necessary	Questionnaires: Sexual desire assessed with one question: "How often do you desire to engage in sexual activity?"	Female Sexual Distress Scale	34% had low desire, overall 10% had low desire and distress
Mitchell et al. (2009)	6,942 women	Britain	16–44	Not necessary	Computer-assisted personal interview. Desire assessed with "In the last year, have you experienced a lack of interest in having sex for six months or longer?"	Distress not assessed but treatment seeking was	10.7% reported lack of desire for 6 months or more. 27.9% of those sought help

of using fantasy and overall higher levels of sexual desire and motivation (Hurlbert, Apt, Hurlbert, & Pierce, 2000).

It is clear that partner influences on women's sexual desire are relevant to the diagnosis of sexual desire disorder. However, the DSMs instruction that the clinician's judgment guide the assessment of whether relationship duration affects the sexual dysfunction provides little guidance for making a diagnosis. Consider the situation in which a woman desires sexual activity once/month and her partner desires it twice/daily. The couple may present for treatment with the initial complaint of her low sexual desire. However, this is a case of desire discrepancy for the woman's low desire is only relative to her partner's somewhat higher desire. Another illustrative situation is the case of the woman who does not desire sexual activity from a partner who is physically and/or emotionally abusive towards her. In both of these scenarios, appreciating the relational influences may change the decision as to whether a diagnosis of low desire is given. One means of capturing the relational component may be with a dimensional criterion, as was proposed in the assessment of distress. Such a "relational influences" specifier would capture, on a Likert scale, the extent to which relationship-related factors may be implicated in the etiology or maintenance of the woman's low desire. This may be quantified with (0) no, (1) mild, (2) moderate, and (3) extreme relational influences. It is obvious that the reliability and validity of this added dimensional criterion would require empirical justification in field trials. Thus, the woman for whom a lack of sexual desire is completely attributed to partner-related factors would still meet criteria for a desire disorder; however, the clinical recommendations may direct a treatment that is more oriented towards the couple-level dysfunction if her relational influences score was higher. This proposal is similar to the adoption of a relational contextual descriptor from the 2003 Consensus committee (Basson et al., 2003).

The Judgment of Deficiency is Determined by the Clinician

Criterion A of HSDD in the DSM-IV-TR (American Psychiatric Association, 2000) states that "The judgment of deficiency or absence is made by the clinician, taking into account factors that affect sexual functioning, such as age and the context of the person's life." Although this statement lacks any recommendation about how "judgment" is made, the qualities of the clinician in making the judgment, and whether judgment possesses validity and inter-rater reliability, this statement does emphasize the contextual (and relational) factors that may influence a woman's low desire. Similarly, the International Classification Committee also recommended that "The lack of interest is considered to be beyond a normative lessening with life cycle and relationship duration" (Basson et al., 2003). It has been established that sexual intercourse frequency declines with relationship duration (e.g., Christopher & Sprecher, 2000; Klusmann,

2002). Witting et al. (2008) also found that relationship length and age were both associated with a higher prevalence of sexual desire dysfunction, and that these two variables accounted for 13% of the variance in desire dysfunction. Klusmann (2002) explored relationship duration in almost 1,900 German university students and found that, for women, desire for sex declined and desire for tenderness increased with relationship duration, whereas this pattern was not found for men. In addition, quality of marital sex is not necessarily correlated with relationship duration (Liu, 2003).

Clement (2002) proposed a systemic approach to understanding sexual desire in a long-term relationship that may have implications for the DSM-V definition of desire disorder. He argued that desire mismatch is an emergent function of the couple's communication and is not due to individual levels of desire within each member of the dyad. Importantly, such mismatches are more prevalent with relationship duration.

Not Better Accounted for by Another Axis I Disorder

Criterion C of HSDD in the DSM-IV-TR states that "The sexual dysfunction is not better accounted for by another Axis I disorder (except another Sexual Dysfunction)." Thus, it is possible, and in fact common, for women to experience more than one sexual dysfunction (Fugl-Meyer & Fugl-Meyer, 2002). Epidemiological, laboratory, and clinical studies usually find a high degree of overlap between sexual desire and arousal disorders (Bozman & Beck, 1991; Slob, Bax, Hop, Rowland & van der Werff ten Bosch, 1996; Sanders, Graham, & Milhausen, 2008). However, Female Sexual Arousal Disorder (FSAD), according to the DSM-IV-TR, focuses on "adequate lubrication-swelling response of sexual excitement" and not on mental arousal—and it is the latter which is the more common clinical presentation. Additionally, psychophysiological research has found that a perceived lack of genital arousal is usually not detected with objective measurement, such as the vaginal photoplethysmograph (Laan, van Driel, & van Lunsen, 2008), calling into question the validity of lubrication-swelling as a marker of sexual arousal. As a result, it has been suggested that a separate "Subjective Sexual Arousal Disorder" be added to the taxonomy of female sexual dysfunctions (Basson et al., 2003), to reflect the more common reason for seeking treatment. The prevalence of subjective sexual arousal problems is unknown given that it is rarely assessed in epidemiological studies (except Dunn, Croft, & Hackett, 1999, who found a prevalence of 17%).

In reality, the distinction between subjective arousal and desire may be unclear at best (Graham, 2009). In part, this may be because women express difficulties differentiating desire from subjective arousal (Brotto et al., 2009; Graham, Sanders, Milhausen, & McBride, 2004; Hartmann et al., 2002). Also, in some women desire precedes arousal whereas in other women, it follows (Graham et al., 2004). In treatment outcome research, psychological interventions for low desire also significantly improve subjective sexual arousal (Hurlbert, 1993). Indeed, some researchers conceptualize sexual desire entirely as the cognitive component of sexual arousal (Prause et al., 2008; Spector et al., 1996). Others prefer the term "arousability" to refer to sexual desire and subjective sexual arousal, where sexual desire is considered to be an early arousal process (Everaerd, Laan, Both, & van der Velde, 2000; Whalen, 1966). As reviewed earlier, Hartmann et al.'s proposed taxonomy suggests that there be one universal sexual desire disorder with specifiers denoting problematic arousal, orgasmic function, mood, self-esteem, and/or relationship concerns. Additional research is needed to test this conclusion that sexual desire and subjective arousal may, in fact, be two sides of the same sexual coin. If this is the case, then incorporating "arousability" into the criteria for low sexual desire is reasonable for DSM-V.

Terminology

Although the term "hypoactive" was introduced in the third edition of the DSM in 1980, there are problems with the label hypoactive. It connotes a deficiency of activity and, therefore, unnecessarily emphasizes sexual activity as the central focus of the loss of desire. Some interpret the "hypo" in HSDD to infer a biological deficiency of testosterone (Burger & Papalia, 2006). However, to date, the majority of studies (including two large studies) have failed to find a correlation between low sexual desire and serum testosterone levels (Cawood & Bancroft, 1996; Davis, Davison, Donath, & Bell, 2005; Dennerstein, Randolph, Taffe, Dudley, & Burger, 2002; Dennerstein et al., 2005; Gracia, Freeman, Sammel, Lin, & Mogul, 2007; Gracia et al., 2004; Santoro et al., 2005). Moreover, in many cases of presentation of low desire in a woman, it is apparent that the distress over her frequency of feeling desire is due to a discrepancy in desired sexual activity between the woman and her partner, as opposed to being attributable to a deficient level of her own sexual desire. I am proposing, therefore, that "hypo" be removed from the diagnostic name of this condition.

Additionally, several epidemiological studies exploring the prevalence of low desire in women operationalize the construct as a "lack of sexual interest" instead of "desire" (see Table 1). The term "interest" is preferred over "desire" as it emphasizes a broader construct than the more biological "drive" connotations of sexual desire (e.g., Levine, 1987) and it reflects the lack of motivation. Interestingly, Sexual Interest/Desire Disorder was the preferred term adopted by the International Classification Committee on women's sexual dysfunction (Basson et al., 2003). It is recognized that this may not be the ideal term given that some feel that "interest" is devoid of any sexual meaning.

Recommendations

Two possible revised names for this disorder are Sexual Interest/Arousal Disorder or Sexual Arousability Disorder. Both revised titles reflect the common empirical finding that desire and (at least subjective) arousal highly overlap. As reviewed earlier, there are inconsistencies in how desire is defined, with some focusing on sexual behavior as an indicator of desire, some definitions focusing on spontaneous sexual thoughts/fantasies, and others emphasizing the responsive nature of women's desire. The DSM-IV-TR uses a definition of desire (i.e., sexual fantasies and desire for sexual activity) that is highly problematic for some women given that women adopt different models of sexual response (Sand & Fisher, 2007), and therefore loss of anticipatory desire for sex may be relevant only to some women. Given the strong tradition in the DSM of using a polythetic approach, here I argue that a polythetic approach also be used in the diagnosis of Sexual Interest/Arousal Disorder or Sexual Arousability Disorder, in line with most of the categories of dysfunction throughout the DSM since DSM-III.

Based on the literature reviewed, the following criteria might be considered in this definition: (1) absent/reduced interest in sexual activity (preserving the DSM-IV definition); (2) absent/reduced sexual or erotic thoughts or fantasies (preserving and expanding the DSM-IV definition); (3) does not initiate sexual activity and is not receptive to a partner's initiation; (4) absent/reduced sexual excitement/pleasure during sexual activity, and (5) desire is not triggered by any erotic stimulus (e.g., written, verbal, visual, etc.). As reviewed by Graham (2009), because complaints of reduced genital and/or non-genital excitement often co-occur with low desire, it is recommended that this also be added as a sixth possible criterion (i.e., absent/reduced genital and/or nongenital physical changes during sexual activity). The precise number of these symptoms required in order to meet criteria for Sexual Interest/Arousal Disorder or Sexual Arousability Disorder remains to be determined; however, it is reasonable to assert that four of the six symptoms must be met (Table 2). The (rare) situation in which complaints of impaired/absent genital arousal (A.6) occur despite a normal level of subjective desire/excitement would be classified as a Sexual Dysfunction Not Otherwise Specified.

Thus, desire for sexual activity is acknowledged as being one of several possible markers of sexual desire. By adopting a polythetic approach to the new desire disorder, this emphasizes that the woman who lacks desire before the onset of sexual activity, but who is receptive to a partner's initiation or instigates for reasons other than desire and who does experience excitement during the sexual interaction would not meet criteria for a desire disorder. On the other hand, the woman who never experiences sexual desire, neither before nor during the sexual interaction, would meet criteria for the disorder. The advantage to a polythetic approach for the diagnosis of Sexual Interest/Arousal Disorder or Sexual Arousability Disorder is that it takes into account the wide variability across women in the experience of desire.

Table 2 Proposed criteria for Sexual Interest/Arousal Disorder (or Sexual Arousability Disorder)

A. Lack of sexual interest/arousal of at least 6 months duration as manifested by at least four of the following indicators:
(1) Absent/reduced interest in sexual activity
(2) Absent/reduced sexual/erotic thoughts or fantasies
(3) No initiation of sexual activity and is not receptive to a partner's attempts to initiate
(4) Absent/reduced sexual excitement/pleasure during sexual activity (on at least 75% or more of sexual encounters)
(5) Desire is not triggered by any sexual/erotic stimulus (e.g., written, verbal, visual, etc.)
(6) Absent/reduced genital and/or nongenital physical changes during sexual activity (on at least 75% or more of sexual encounters)
B. The disturbance causes clinically significant distress or impairment
Specifiers
(1) Lifelong or acquired
(2) Generalized or situational
(3) Partner factors (partner's sexual problems, partner's health status)
(4) Relationship factors (e.g., poor communication, relationship discord, discrepancies in desire for sexual activity)
(5) Individual vulnerability factors (e.g., depression or anxiety, poor body image, history of abuse experience)
(6) Cultural/religious factors (e.g., inhibitions related to prohibitions against sexual activity)
(7) Medical factors (e.g., illness/medications)

Specifiers would include: lifelong/acquired, generalized/situational, and relational influences (measured dimensionally), which includes both partner factors (e.g., partner's sexual or health problems) and relationship factors (e.g., poor communication, desire discrepancy). Whether generalized/situational is preserved as a specifier or not requires additional careful evaluation given that a situational dysfunction may be an adaptive/normal reaction to a problematic context and therefore should not be pathologized. Because criterion C of the DSM-IV-TR definition of HSDD indicates that the diagnosis "is not due exclusively to the direct physiological effects of a substance or a general medical condition" and because a determination of exclusive cause can never be determined in the case of low desire, I would argue that a new specifier be added to the diagnosis which captures the clinician's impression as to whether medical factors play a role in the etiology (i.e., Medical factors). Moreover, given the recognition of the important influence of mood and increasing data showing cross-cultural differences in the expression of desire, two additional specifiers (e.g., individual vulnerability factors and cultural/religious factors) should be added. Because of the marked elevation in rates of desire when a

more narrow window is defined (e.g., one month), I recommend that these symptoms must be present for at least 6 months duration and on at least 75% or more of sexual encounters.

Given the importance of distress, I do not advocate for the removal of distress from the criteria. Instead, the low desire (indicated in Criterion A) must cause clinically significant distress or impairment (Criterion B).

Criteria for identifying sexual problems should be as conservative as possible and account for the diversity in women's experiences of desire (M. Meana, personal communication, May 29, 2009). By adopting the suggested polythetic approach, this recognizes that difficulties in women's desire may not be experienced in a uniform manner. Moreover, the requirement that there be at least four symptoms of problematic desire/arousal for 6 months on the majority of sexual encounters helps safeguard against the unfortunate situation where adaptive decreases in desire may be inadvertently pathologized.

Field Trials

It is apparent from this review that there has been much excellent research in the domain of distress in women's sexual desire disorder. There is also good, indirect psychophysiological data supporting the responsive nature of sexual desire; however, a direct test of the reliability and validity of responsive sexual desire as part of the diagnostic criteria for Sexual Interest/Arousal Disorder or Sexual Arousability Disorder will be essential. In addition, as I have proposed, objective criteria of low desire present on at least 75% of encounters for a duration of at least 6 months will require empirical verification in the context of field trials.

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