



Women With Hypoactive Sexual Desire Disorder Versus Sexual Interest/Arousal Disorder: An Empirical Test of Raising the Bar

Julia I. O’Loughlin

Department of Counselling Psychology, University of British Columbia

Rosemary Basson

Department of Psychiatry, University of British Columbia

Lori A. Brotto

Department of Obstetrics and Gynaecology, University of British Columbia

In 2013, the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) was published with a major revision to the sexual dysfunction categories, and the diagnosis of female hypoactive sexual desire disorder (HSDD) was replaced with female sexual interest/arousal disorder (SIAD). Since being introduced, concern has been expressed that SIAD inappropriately “raises the bar” for diagnosis. To address these concerns, we sought to evaluate the number of women with a diagnosis of HSDD who also met criteria for SIAD. In a sample of 151 women, we found that 73.5% of women with a diagnosis of HSDD met criteria for SIAD. The two groups were compared on the Sexual Interest/Desire Inventory, and women who met criteria for both HSDD and SIAD consistently scored lower on sexual desire frequency and satisfaction, satisfaction with sex, receptivity, positive sexual thoughts, reactions to erotica, arousal frequency, ease, continuation, and orgasm ease/achievement, and higher on distress. In addition, women meeting criteria for HSDD only tended to have mild symptoms across the six SIAD criteria compared to those meeting criteria for both HSDD and SIAD. These findings suggest that the SIAD criteria does not unduly raise the bar for diagnosis.

The nature of women’s sexual desire—how it is experienced and expressed, enhanced or suppressed, and where it is sensed in the body—remains of immense interest to sex researchers and clinicians. Adding to an early description of the human sexual response cycle developed by Masters and Johnson (1966), Kaplan (1977, 1979) and Lief (1977) independently emphasized the need for the model to address sexual desire, which was presumed necessary for initiating the subsequent stages of sexual arousal and orgasm. Although desire was described as being potentially triggered by external factors such that two forms—intrinsic and extrinsic desire—existed (Kaplan, 1979), a “triphasic model” emerged in which desire was deemed essential as the first stage in a healthy sexual response and was viewed as “spontaneous,” or emerging from within an individual. This triphasic model formed the basis for the classification

of sexual dysfunctions in women (and men) from the third edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-III*; American Psychiatric Association [APA, 1980] through to the fourth edition, text revision, of the *DSM (DSM-IV-TR*; APA, 2000). The *DSM* classified sexual dysfunctions under the general headings of disorders related to desire, arousal, orgasm, and pain, corresponding with the desire–arousal–orgasm linear model of sexual response.

There has been long-standing dissatisfaction with this model of sexual response, with questions about the contention that progression from desire to arousal to orgasm is linear (Tiefer, 1991). This has resulted in alternative models being proposed. For example, the incentive motivation model (IMM; Singer & Toates, 1987; Toates, 2009) frames sexual desire and arousal as reciprocally reinforcing, with sexual desire emerging only after one experiences sexual arousal. Moreover, the presence of arousal reinforces sexual motivation. Sexual stimuli are emphasized in this model as key elicitors of sexual motivation, such that an effective sexual stimulus will automatically engage cognitive and physiological systems to prepare the body for sexual activity. Within the IMM, sexual response is framed as an

Correspondence should be addressed to Lori A. Brotto, Gordon and Leslie Diamond Health Care Centre, Vancouver General Hospital, 6th Floor, 2775 Laurel St., Vancouver, BC, Canada, V5Z 1M9. E-mail: lori.brotto@vch.ca

Color versions of one or more of the figures in the article can be found online at www.tandfonline.com/HJSR.

emotion that emerges in response to triggers and is dependent on context rather than a drive that emanates spontaneously from within an individual (Singer & Toates, 1987). Considerable experimental research on sexual response has been carried out and provides robust support for the IMM (Laan & Both, 2008; Laan & Janssen, 2007).

Beginning in the late 1990s, and on the basis of her experience assessing phases of the sexual response cycle both of patients seeking treatment and of their sexually healthy partners, Basson noted that in long-term relationships, typically one or both partners began a sexual encounter for a variety of reasons, some of which were unrelated to the experience of sexual desire (Basson, 2001). This observation led Basson to propose a sexual response model in which sexual desire was largely responsive in nature, such that desire appears consequent to arousal, and desire and arousal merge to be experienced simultaneously (Basson, 2001, 2002). The essential need for sexual stimuli in a sexual context appropriate for the person, an ability to stay focused in the moment and on those triggers, mood, and other biological and psychological factors that impact the processing of sexual information were depicted in Basson's circular model. Also emphasized was the critical role of incentives (both non-sexual and sexual ones) that move a person out of sexually "neutral" toward being sexually receptive to his or her sexual stimuli. Informed by empirical research findings (e.g., Carvalheira, Brotto, & Leal, 2010; Meston & Buss, 2007), the circular sexual response cycle also included intimacy-based incentives, indicating that one may initiate sex purely to obtain intimacy-related goals. The circular cycle also included the fact that the individual may still experience what feels to be spontaneous desire, depicted as a potential but not essential reinforcing component in the center of the cycle (Basson, 2001).

Large studies that involved presenting women with a description of the linear model and a partial version of the circular sexual response cycle (i.e., it did not depict sexual desire that appeared spontaneous), have found considerable heterogeneity among women (Ferenidou, Kirana, Fokas, Hatzichristou, & Athanasiadis, 2016; Giraldi, Kristensen, & Sand, 2015; Nowosielski, Wróbel, & Kowalczyk, 2016). Most women endorsed a model of sexual response in which they experienced a combination of sexual and nonsexual reasons for engaging in sexual activity (Nowosielski et al., 2016). Similar findings were observed with men (Connaughton, McCabe, & Karantzas, 2016).

A combination of persuasive data showing marked diversity in the ways in which women experience their sexual desire (Brotto, 2010c; Meana, 2010), together with the mounting evidence suggesting that responsive sexual desire may be common and may even be the predominant type of desire among women, prompted the Sexual Dysfunctions Workgroup for the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5)* to critically evaluate the existing nomenclature for women's sexual dysfunctions and, in particular, the criteria outlined by HSDD. Over their five-year deliberation, this workgroup critically evaluated the existing literature, published their reviews (Binik, 2010; Brotto, 2010a, 2010b; Graham, 2010a, 2010b; Seagraves, 2010a, 2010b, 2010c),

solicited feedback from key advisors, presented drafts of working diagnoses and their criteria to the public, incorporated feedback from a multitude of stakeholders, and, finally, published the revised *DSM-5* in 2013 (APA, 2013). It was felt that the category of HSDD should be expanded to reflect the different ways women express sexual desire, and should include genital and nongenital arousal given that desire and arousal emerge simultaneously in the IMM (Laan & Both, 2008).

The new diagnosis of sexual interest/arousal disorder (SIAD) contained polythetic criteria, and symptom duration criteria of six months were introduced (Table 1). Specifically, a diagnosis would be considered when women experienced at least three of the following: absent/reduced interest in sex; absent/reduced erotic thoughts or fantasies; reductions or absence of sexual activity; absent/reduced sexual pleasure during sexual activity; absent/reduced responsive sexual desire; and absent/reduced physical sexual sensations. In addition to polythetic criteria and symptom duration criteria, a frequency specification (75% to 100% of the time) for two of the symptoms—absent or reduced sexual excitement and absent or reduced pleasant genital sensations—was introduced. This was recommended by Balon (2008), Balon, Seagraves, and Clayton (2007), and Seagraves, Balon, and Clayton (2007) because it corresponds with the "usually always/always" criteria in the study by Öberg, Fugl-Meyer, and Fugl-Meyer (2004), who explored the prevalence of "manifest" compared to mild sexual dysfunctions.

Since SIAD was introduced, controversy surrounding the diagnosis has been considerable (Balon & Clayton, 2014, 2015; Clayton, DeRogatis, Rosen, & Pyke, 2012a, 2012b; Derogatis, Sand, Balon, Rosen, & Parish, 2016; Graham, Brotto, & Zucker, 2014; Parish et al., 2016; Pyke & Clayton, 2015). Concerns have been expressed that the SIAD diagnostic category lacks continuity with previous versions of the *DSM* and has not been assessed for clinical utility (Balon & Clayton, 2014). Furthermore, there was no study of validation or reliability testing prior to its adoption in the *DSM-5* (for a review, see Balon & Clayton, 2014). The most predominant criticism of SIAD centers around the view that SIAD unfairly "raises the bar" for a diagnosis of sexual desire dysfunction in women (Clayton et al., 2012a) and may result in countless women not receiving needed clinical care, and care providers in some countries being negatively impacted through billing codes.

We are aware of only one study that has attempted to examine how many women with HSDD would not be diagnosed with SIAD and thus face the possibility of not receiving care. In this study, Sarin, Amsel, and Binik (2013) recruited women (and men) meeting *DSM-IV-TR* (APA, 2000) criteria for HSDD, female sexual arousal disorder (FSAD), or both, according to telephone screening and a questionnaire. Unfortunately, little can be gleaned from this study, as only 16 of the 114 women who initially expressed an interest in the study passed the screening. Among this sample of 16, 12 met the operational definition of HSDD and five of these 12 (42%) met the additional criteria the authors established in an effort to capture *DSM-5* criteria for SIAD. Sarin et al. (2013) noted the limitations of their study and pointed out that they did not use operational criteria for each of the six SIAD criteria and instead posed questions to their

Table 1. Comparison of Criteria for Sexual Interest/Arousal Disorder (American Psychiatric Association, 2013) and Hypoactive Sexual Desire Disorder (American Psychiatric Association, 2000)

DSM-5 Criteria for Sexual Interest/Arousal Disorder	DSM-IV-TR Criteria for Hypoactive Sexual Desire Disorder and Female Sexual Arouse Disorder
<p>A. Lack of, or significantly reduced, sexual interest/arousal, as manifested by at least three of the following:</p> <ol style="list-style-type: none"> 1. Absent/reduced interest in sexual activity. 2. Absent/reduced sexual/erotic thoughts or fantasies. 3. No/reduced initiation of sexual activity, and typically unresponsive to a partner's attempts to initiate. 4. Absent/reduced sexual excitement/pleasure during sexual activity on almost all or all (approximately 75%-100%) sexual encounters (in identified situational contexts or, if generalized, in all contexts). 5. Absent/reduced sexual interest/arousal in response to any internal or external sexual/erotic cues (e.g., written, verbal, visual). 6. Absent/reduced genital and/or non-genital sensations during sexual activity in almost all or all (approximately 75%-100%) sexual encounters (in identified situational contexts or, if generalized, in all contexts). <p>B. The symptoms in Criterion A have persisted for a minimum duration of approximately 6 months.</p> <p>C. The symptoms in Criterion A cause clinically significant distress in the individual.</p> <p>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.</p>	<p><i>Hypoactive Sexual Desire Disorder</i></p> <p>A. Persistently or recurrently deficient (or absent) sexual fantasies and desire for sexual activity. 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.</p> <p>B. The disturbance causes marked distress or interpersonal difficulty.</p> <p>C. The sexual dysfunction 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 (e.g., a drug of abuse, a medication) or a general medical condition.</p> <p><i>Female Sexual Arousal Disorder</i></p> <p>A. Persistent or recurrent inability to attain, or to maintain until completion of the sexual activity, an adequate lubrication-swelling response of sexual excitement.</p> <p>B. The disturbance causes marked distress or interpersonal difficulty.</p> <p>C. The sexual dysfunction 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 (e.g., a drug of abuse, a medication) or a general medical condition.</p>

participants that appeared to tap into a variety of behaviors, motivations, affective factors, and cognitive factors related to desire. At most, we can conclude from their study that some women who meet criteria for HSDD diagnosis may no longer be eligible for diagnosis when SIAD criteria are applied.

In light of ongoing questions about the potential overlap between HSDD and SIAD, the current study was designed with the goal of carrying out the first systematic comparison of women meeting criteria for HSDD (*DSM-IV-TR*, APA, 2000) versus those meeting criteria for SIAD (*DSM-5*, APA, 2013) on a series of demographic characteristics and on validated measures of sexual desire and sexual response. The distribution of SIAD criteria severity was also compared, and the effect size of response differences between groups was calculated. The findings provide empirical evidence to test the speculation that the SIAD criteria will restrictively and inappropriately raise the bar for making a desire disorder diagnosis.

Method

Participants and Procedure

A total of 324 women were recruited for a larger study evaluating biopsychosocial predictors of sexual desire. For the current study, 291 women from the larger study were included in analyses on the basis that they provided sufficient data for assessment of SIAD diagnostic criteria.

Participants were predominantly recruited from the community in response to advertisements that recruited women with or without sexual desire concerns. Targeted advertising to women with low sexual desire indicated: "Are you a woman between the ages of 19–65 who experiences low or absent sexual desire?" Women who responded to the ad and who met the inclusion criteria of being between the ages of 19 and 65, with no major medical illnesses known to impact sexual functioning, who were nonsmokers, not currently depressed, not using medications with known side effects on sexual functioning (e.g., antidepressants), not using any topical or oral dehydroepiandrosterone (DHEA) products, not using hormonal contraception, and not using hormone replacement therapy were provided more information about the study. Inclusion criteria were established to ensure consistency with *DSM-IV* HSDD diagnosis and with the purpose of eliminating factors known to disrupt hormones being measured in the larger study (e.g., cortisol, DHEA). Advertisements were placed online (i.e., Craigslist, university paid-studies list, hospital electronic mailing lists), in local newspapers, and on flyers posted throughout the community (i.e., bus stops, university boards, hospital boards). Primary care providers known to accept patients with sexual concerns were also made aware of the study and encouraged to post an ad in their clinics.

Operational criteria for HSDD were assessed through a telephone screening interview conducted by a trained research assistant (see Measures section for further details). If the

prospective participant reported regular drug use, a body mass index (BMI) lower than 18.5 or higher than 29.9, current pregnancy, or stress levels that interfered with daily function, the phone interview was terminated and the respondent was thanked for her time. In addition, women reporting low desire were excluded from participation if they experienced pain during intercourse that was not relieved by an external lubricant, if low sexual desire was directly associated with relationship discord, or if low desire had been present for less than one year. Reasons for the exclusion of ineligible participants were kept in detailed records, with the most common reason being medication use (e.g., antidepressants). In addition to meeting the two criteria for HSDD (lack of interest in sexual activity and reduced or absent sexual thoughts/fantasies), to be included in the experimental group prospective participants were also required to endorse that their lack of sexual desire was associated with significant personal distress. At times, women who responded to recruitment ads for women with low desire were placed—along with those who responded to ads for sexually healthy women—in the control group, if lack of HSDD symptomatology was evident. Prospective participants with subclinical HSDD symptomatology were not included in either the control group or the experiment group.

Contact information was collected at the end of the telephone screening from participants who met criteria and continued to express interest in participating in the study.

Respondents who met inclusion criteria were e-mailed the consent form for the full study and asked to review it. After reviewing the consent form, if the respondent still wished to participate in the study, arrangements were made for an in-person meeting with a research assistant to go over study procedures in more detail. Following this meeting, the participant was e-mailed a link to an online battery of questionnaires that she was asked to complete at a time of her own choosing. After completing the questionnaires (and hormone-sampling phase for the larger study; not reported here), a second in-person meeting was scheduled for the participant to meet with a clinical interviewer, at which point HSDD criteria were assessed and a diagnosis was confirmed.

Participants received a monetary compensation of \$100 for completing the questionnaires, interviews, and at-home hormone collection. Partial compensation (\$25 to \$75) was provided for incomplete participation. Compensation for the portion of the study reflected here was \$25.

Measures

Telephone screening interview. In addition to the screening criteria for HSDD described previously, prospective participants were asked a series of demographic questions pertaining to background information (e.g., age, relationship history, degree of relationship satisfaction). Prospective participants were also asked about their experience of vulvovaginal pain, genital sexual arousal, and their severity of distress.

Decreased Sexual Desire Screener (DSDS). The DSDS is five-item clinician-administered diagnostic brief screener for generalized acquired HSDD in women (Clayton et al., 2009). Initially, participants were presented with a set of four *Yes/No* questions pertaining to sexual desire (i.e., level of, satisfaction with). If a participant endorsed all four items, a fifth question was administered to rule out potentially confounding causes for decreased desire (e.g., medical illness, relationship factors, medications, obstetric or gynecological factors, stress and/or fatigue). If the respondent answered *Yes* to questions 1 through 4 and *No* to all factors in question 5, she received a diagnosis of HSDD. A respondent also qualified for HSDD diagnosis if she answered *Yes* to questions 1 through 4 and *Yes* to factors in question 5 if a further assessment showed those factors did not point to another primary diagnosis. The DSDS shows 85.2% diagnostic accuracy and high sensitivity and specificity (with point estimates of .84 and .88, respectively; Clayton et al., 2009).

Sexual Interest and Desire Inventory—Female (SIDI-F). The SIDI-F is a 13-item measure of sexual interest, desire, and arousability (Clayton et al., 2006). Across the 13 items, assessments are made in the following areas: spontaneous and responsive sexual desire, receptivity and initiation of sexual activity, satisfaction with desire and arousal, desire for nonsexual affection, and genital arousal. Typically, the 13 items are summed to create a total score, with a possible range of 0 to 51. However, in this study, we examined each item separately to identify mean differences in responding between women who met criteria for HSDD and SIAD and women who met criteria for HSDD but not SIAD. Higher scores indicate higher levels of sexual functioning. The SIDI-F has excellent internal consistency, with a Cronbach's alpha of .92 in the present sample. Discriminant validity is evidenced by the significantly higher SIDI-F scores in women without sexual dysfunctions compared to women diagnosed with HSDD (Clayton et al., 2006).

Sexual interest/arousal disorder (SIAD). As part of the *DSM-5* development process, the Sexual Dysfunctions Workgroup for *DSM-5* developed questions that assessed the presence and severity of criteria for SIAD (APA, 2013) (Table 2). Possible responses to each item ranged from 0 (*Never*) to 4 (*Extreme*). In the present sample, internal consistency of the measure was high, with a Cronbach's alpha of .93.

Data Analytic Plan

Analyses were designed a priori and meant to compare women who met criteria for HSDD to women who met criteria for SIAD. A control group was used to ensure validity of inferences drawn from the latter comparison. For the sake of brevity, we refer to the group meeting criteria for both HSDD and SIAD as the "SIAD group." Women were placed in the SIAD group if they scored at

Table 2. *Assessment for Sexual Interest/Arousal Disorder*

Criteria	Rating Options				
	Never	Mild	Moderate	Severe	Extreme
1 Over the past 6 months, have you experienced absent or markedly reduced interest in sexual activity?	0	1	2	3	4
2 Over the past 6 months, have you experienced absent or markedly reduced sexual/erotic thoughts or fantasies?	0	1	2	3	4
3 Over the past 6 months, have you rarely or never initiated sexual activity and are you rarely or never receptive to your partner's attempts to initiate sexual activity?	0	1	2	3	4
4 Over the past 6 months, have you experienced absent or reduced sexual excitement or pleasure during sexual activity (on all or almost all of sexual encounters)?	0	1	2	3	4
5 Over the past 6 months, have most or all internal and external sexual/erotic stimuli (e.g., written, verbal, visual, or other types) been ineffective in triggering your desire?	0	1	2	3	4
6 Over the past 6 months, have you experienced absent or markedly reduced genital and/or nongenital sensations during sexual activity (on all or nearly all of sexual encounters)?	0	1	2	3	4

least 2 (moderate) or higher on three or more of the six SIAD questions (refer to Table 2) and indicated that symptoms caused considerable personal distress.

Descriptive analyses compared the women in the HSDD, SIAD, and control groups on demographic variables (e.g., age, ethnicity, education, sexual orientation, employment) to ensure similarity across groups. Chi-square analyses were carried out for categorical variables, and one-way analyses of variance (ANOVAs; i.e., *F* tests) or independent samples *t* tests were carried out on continuous variables. We also compared the severity of the six SIAD criteria among the three groups. Finally, responses provided by the participants in the HSDD and SIAD groups on the SIDI-F were compared using independent samples *t* tests. All analyses were performed using SPSS 24.0.

Results

Proportion of Women With and Without HSDD Meeting Criteria for SIAD

Of the 291 women who participated in this study, 151 met criteria for HSDD and 140 did not. Among the 151 women who met criteria for HSDD, 111 also met criteria for SIAD (73.5%) and 40 women did not (26.5%). Among the 140 women who did not meet criteria for HSDD, none met criteria for SIAD. This group served as the nonclinical control group.

Comparison of Women With HSDD versus SIAD on Demographic Characteristics

No significant difference in age was observed between the women with SIAD ($n = 111$, $M = 33.25$, $SD = 11.67$), women with HSDD ($n = 40$, $M = 33.90$, $SD = 12.38$), and healthy controls ($n = 140$, $M = 32.20$, $SD = 11.46$); $F(2, 287) = 0.44$, $p = .64$. Likewise, the groups did not significantly differ with respect to the proportion of women who identified with a Euro Caucasian, East Asian, or other ethnicity, $\chi^2(12, N = 291) = 17.62$, $p = .13$, with over 64% of the sample

identifying as Euro Caucasian. Highest education level was similarly not significantly different between the groups, $\chi^2(10, N = 291) = 12.81$, $p = .235$, with the majority of women in the sample having at least some postsecondary education. Employment status did not differ between the groups, with 38.7% of the SIAD women, 45% of the HSDD women, and 41% of the controls reporting full-time employment, $\chi^2(14, N = 291) = 12.66$, $p = .59$. A total of 80.2% of the women with SIAD, 87.5% of the women with HSDD, and 80% of controls identified with a heterosexual orientation, and there was no difference between the groups, $\chi^2(6, N = 291) = 6.56$, $p = .36$. The majority of the sample—79.2% of women with SIAD, 77.5% of those with HSDD, and 71.4% controls—reported being in a relationship, with no significant group differences, $\chi^2(10, N = 291) = 15.35$, $p = .12$. Finally, no differences were observed in relationship duration (measured in months) between women with SIAD ($M = 69.97$, $SD = 100.81$), women with HSDD ($M = 67.78$, $SD = 77.14$), and controls ($M = 55.18$, $SD = 87.81$); $F(2, 287) = .88$, $p = .42$. Demographic data are summarized in Table 3.

Comparison of Women With HSDD versus Those With SIAD on Sexual Desire and Arousal

The two groups were compared on responses to the 13 item SIDI-F, examining different aspects of desire, arousal, satisfaction, and behaviors. Compared to women meeting criteria for SIAD, women with HSDD reported significantly higher satisfaction with the sexual aspect of their relationship, $t(128) = -3.24$, $p = .002$; significantly higher receptivity scores, $t(122) = -3.62$, $p < .001$; more frequent sexual desire, $t(144) = -4.41$, $p < .001$; more satisfaction with their level of sexual desire, $t(148) = -3.65$, $p < .001$; more positive sexual thoughts, $t(144) = -5.73$, $p < .001$; a greater response to erotica, $t(143) = -2.44$, $p = .016$; less distress associated with their level of sexual desire, $t(147) = -2.54$, $p = .012$; a higher frequency of sexual arousal, $t(138) = -4.63$, $p < .001$; a greater ease with which arousal was reached, $t(139) = -4.65$, $p < .001$; more desire following sexual arousal, $t(140) = -3.52$, $p = .001$; and greater frequency and ease of reaching orgasm, $t(117) = -3.73$,

Table 3. Participant Demographic Characteristics for Women With Hypoactive Sexual Desire Disorder (HSDD), Women With Sexual Interest/Arousal Disorder (SIAD), and Controls

Variable	HSDD (<i>n</i> = 40)		SIAD (<i>n</i> = 111)		Controls (<i>n</i> = 140)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	33.90	12.38	33.25	11.67	32.20	11.46
Relationship duration (months)	67.78	77.14	69.97	100.81	55.18	87.81
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Race/ethnicity						
Euro Caucasian	28	70.00	70	63.06	88	62.86
East Asian	2	5.00	20	18.02	29	20.71
South Asian	6	15.00	4	3.60	9	6.43
First Nations	1	2.50	2	1.80	1	0.71
Middle Eastern	—	—	2	1.80	5	3.57
African Canadian	1	2.50	1	0.90	1	0.71
Other	2	5.00	12	10.81	7	5.00
Education						
High school	5	12.50	9	8.11	21	15.00
College/technical/trade school	6	15.00	20	18.02	20	14.29
Undergraduate degree	13	32.50	50	45.05	58	41.43
Master's degree	13	32.50	17	15.32	23	16.43
Doctoral degree	—	—	6	5.41	10	7.14
Other	3	7.50	9	8.11	8	5.71
Employment status						
Full time	18	45.00	43	38.74	58	41.43
Part time	7	17.50	18	16.22	22	15.71
Self-employed	1	2.50	5	4.50	8	5.71
Unemployed	1	2.50	4	3.60	—	—
Retired	1	2.50	4	3.60	2	1.43
Student	11	27.5	29	26.13	46	32.86
Homemaker	1	2.50	3	2.70	1	0.71
Other	—	—	5	4.50	3	2.14
Sexual orientation						
Heterosexual	35	87.50	89	80.18	112	80.00
Lesbian	3	7.50	4	3.60	4	2.86
Bisexual	2	5.00	11	9.91	18	12.86
Other	—	—	7	6.31	6	4.29
Relationship status						
Single	7	17.50	18	16.22	30	21.43
Dating	7	17.50	23	20.72	47	33.57
Married/cohabiting	24	60.00	65	58.56	53	37.86
Divorced	—	—	2	1.80	3	2.14
Other	2	5.00	3	2.70	7	5.00

Note. Demographic variables did not differ significantly by group.

p = .012. The two groups did not differ in their reported frequency of initiating sexual activity, *t* (127) = -1.17, *p* = .243; or nonsexual affection, *t* (145) = -1.65, *p* = .101 (Table 4).

Endorsement of SIAD Symptoms Across Women With HSDD versus SIAD

We next examined patterns of endorsing the six SIAD criteria among the women who met criteria for HSDD. By definition, women assigned to the SIAD diagnostic group had to endorse at least three of the six criteria with at least moderate intensity. We then compared the two groups on the proportion of

participants who endorsed a score of 2 or higher (reflecting moderate to extreme intensity) across all six SIAD criteria.

For item 1 pertaining to reduced interest in sexual activity, 42.27% of the full sample, 32.50% of those with HSDD, 93.63% of those with SIAD, and 5% of controls scored at least moderate (see Figure 1). We then compared the difference in responses to item 1 between groups and found that the difference between the HSDD and SIAD groups (*d* = 1.67) and the HSDD and control groups (*d* = 1.15) was large. For item 2 pertaining to reduced erotic thoughts or fantasies, 35.05% of the full sample, 7.5% of those with HSDD, 85.45% of those with SIAD, and 3.62% of controls scored in the moderate range (see Figure 2). The difference in responses to item 2 was large

Table 4. *Sexual Interest and Desire Inventory Responses for Women With Hypoactive Sexual Desire Disorder (HSDD) and Women With Sexual Interest/Arousal Disorder (SIAD)*

SIDI-F Item	n	HSDD		SIAD	
		M	SD	M	SD
1. Relationship—Sexual**	130	2.38	1.28	1.65	1.09
2. Receptivity***	124	2.03	1.40	1.24	.95
3. Initiation	129	.75	.73	.57	.80
4. Desire—Frequency***	146	1.77	1.20	.90	1.00
5. Nonsexual Affection	147	3.00	1.24	2.57	1.46
6. Desire—Satisfaction***	150	1.70	1.14	1.03	.94
7. Desire—Distress**	149	2.80	.91	2.38	.90
8. Thoughts—Positive***	146	2.72	1.10	1.50	1.14
9. Reaction to Erotica*	145	1.47	.92	1.06	.90
10. Arousal—Frequency***	140	2.20	.80	1.40	.97
11. Arousal—Ease***	141	1.72	.73	1.13	.66
12. Arousal—Continuation***	142	2.00	.79	1.43	.89
13. Orgasm**	119	2.49	1.34	1.54	1.24

p* < .05; *p* < .01; ****p* < .001.

between the HSDD and SIAD groups (*d* = 1.98) and between the HSDD and control groups (*d* = 0.94). For item 3 pertaining to reduced or absent initiation of sexual activity or receptivity to a partner's sexual invitations, 42.27% of the full sample, 43.24% of those with HSDD, 93.33% of those with SIAD, and 7.56% of controls scored in the upper range (see Figure 3). The difference in responses on item 3 was large between the HSDD and SIAD groups (*d* = 1.09) and between

the HSDD and control groups (*d* = 1.23). Item 4 assessed reduced or absent pleasure during sexual activity. A total of 33.33% of the full sample scored at least moderate on this item, while 7.5% of the women with HSDD, 83.33% of those with SIAD, and 2.90% of controls scored in this range (see Figure 4). The difference in responses on item 4 was large between the HSDD and SIAD groups (*d* = 1.70) and between the HSDD and control groups (*d* = 1.00). Item 5 assessed responsive sexual desire to sexual stimuli, and 33.33% of all women, 7.89% of women with HSDD, 74.07% of those with SIAD, and 10.07% of controls reported having at least moderate concerns in this domain (see Figure 5). The difference in responses on item 5 was large between the HSDD and SIAD groups (*d* = 1.58) and small between the HSDD and control groups (*d* = 0.31). Finally, the sixth item assessed difficulties relating to genital and/or nongenital sensations during sexual activity, and 23.02% of the full sample, 5% of those with HSDD, 59.80% of women with SIAD, and 2.88% of controls scored at least moderate (see Figure 6). The difference in responses on item 6 was large between the HSDD and SIAD groups (*d* = 1.55) and small between the HSDD and control groups (*d* = 0.39).

Discussion

The primary aim of this study was to conduct the first systematic comparison of women meeting criteria for HSDD versus those meeting criteria for SIAD by testing

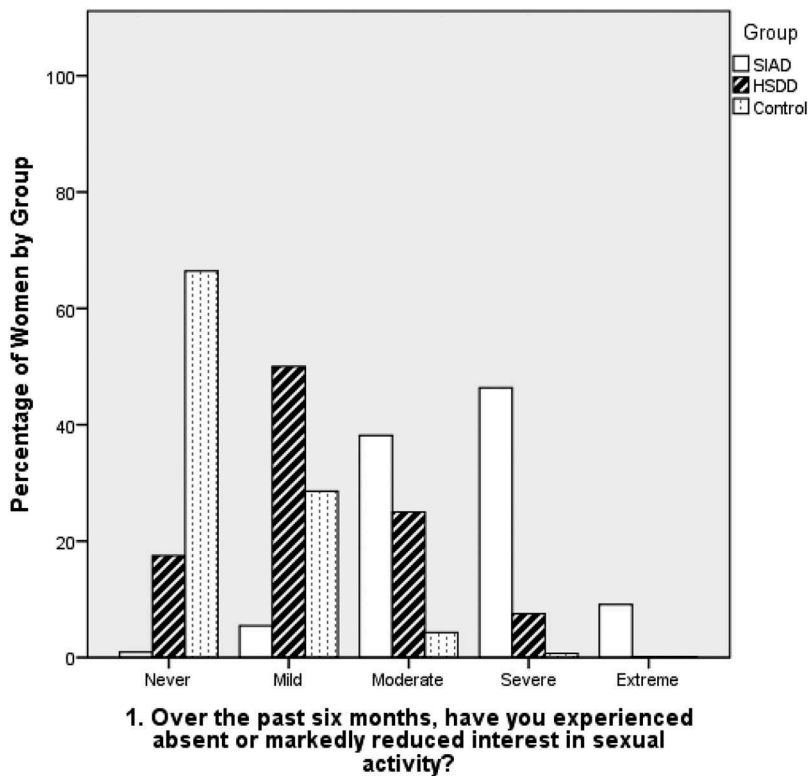


Figure 1. Proportion of women diagnosed with hypoactive sexual desire disorder (HSDD) and women with sexual interest/arousal disorder (SIAD) by severity rating for Item 1 on SIAD.

WOMEN WITH HSDD VS. SIAD

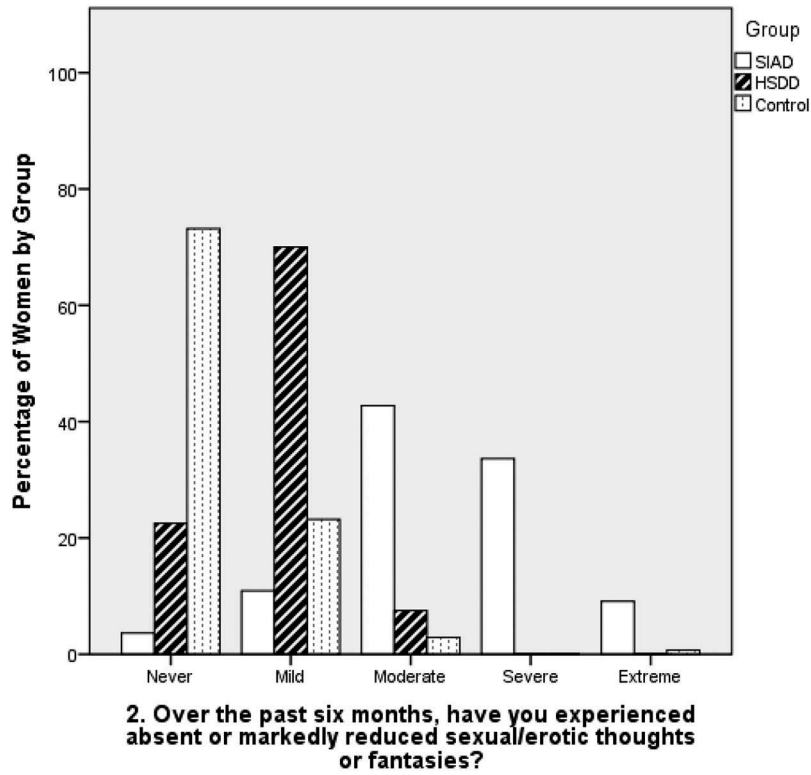


Figure 2. Proportion of women diagnosed with hypoactive sexual desire disorder (HSDD) and women with sexual interest/arousal disorder (SIAD) by severity rating for Item 2 on SIAD.

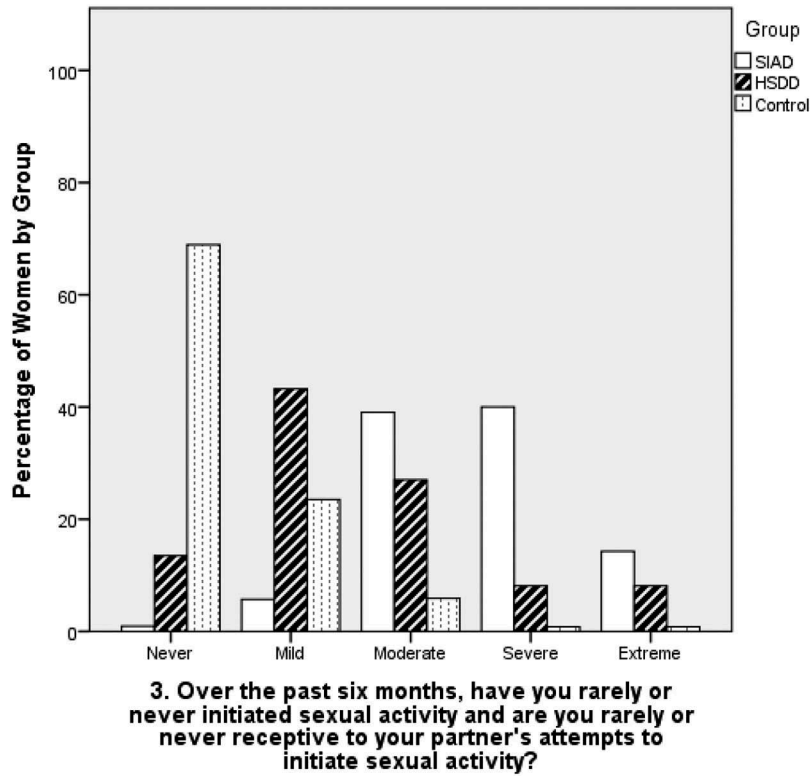


Figure 3. Proportion of women diagnosed with hypoactive sexual desire disorder (HSDD) and women with sexual interest/arousal disorder (SIAD) by severity rating for Item 3 on SIAD.

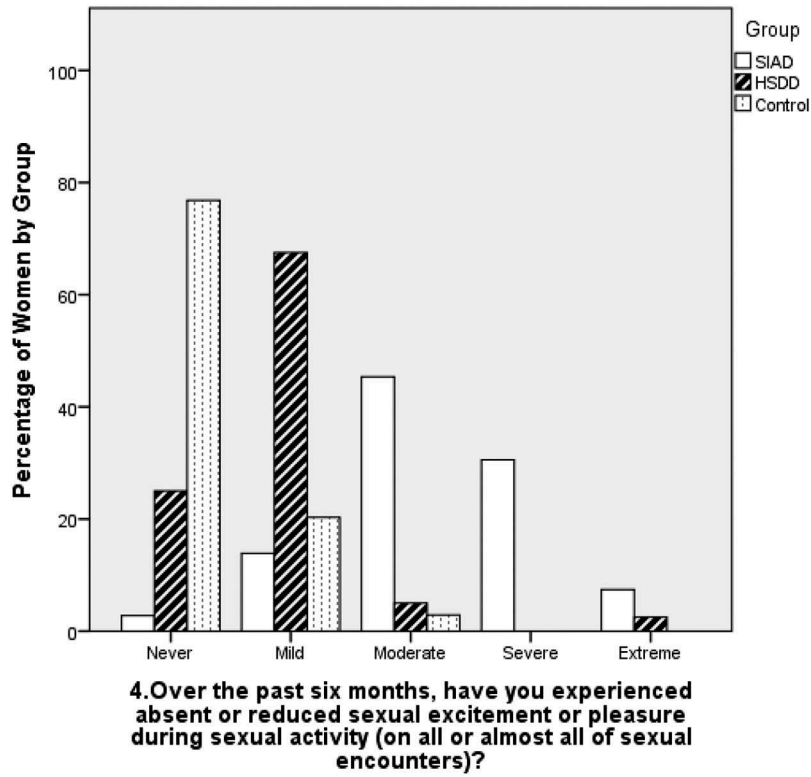


Figure 4. Proportion of women diagnosed with hypoactive sexual desire disorder (HSDD) and women with sexual interest/arousal disorder (SIAD) by severity rating for Item 4 on SIAD.

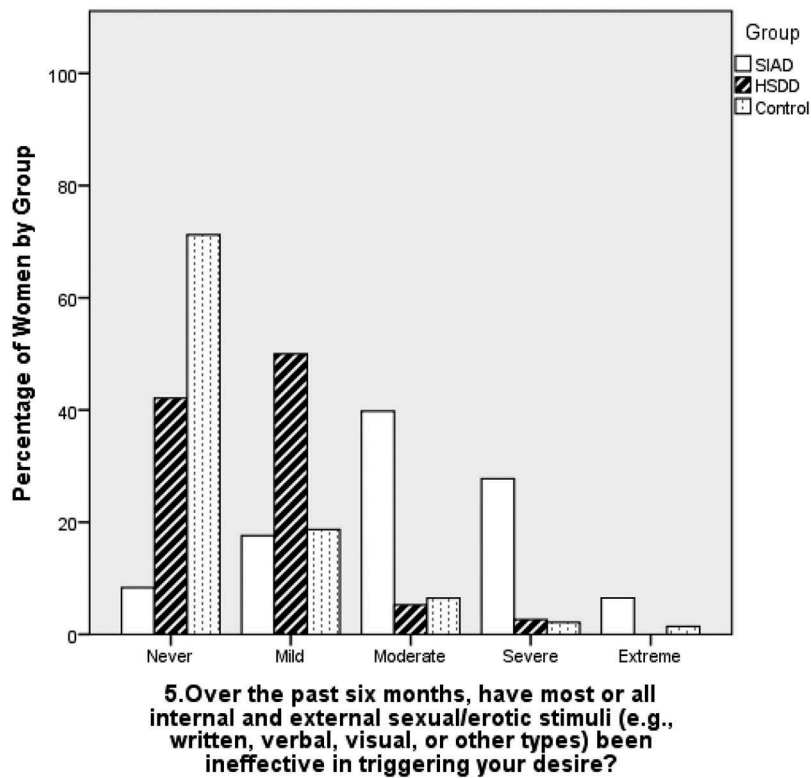


Figure 5. Proportion of women diagnosed with hypoactive sexual desire disorder (HSDD) and women with sexual interest/arousal disorder (SIAD) by severity rating for Item 5 on SIAD.

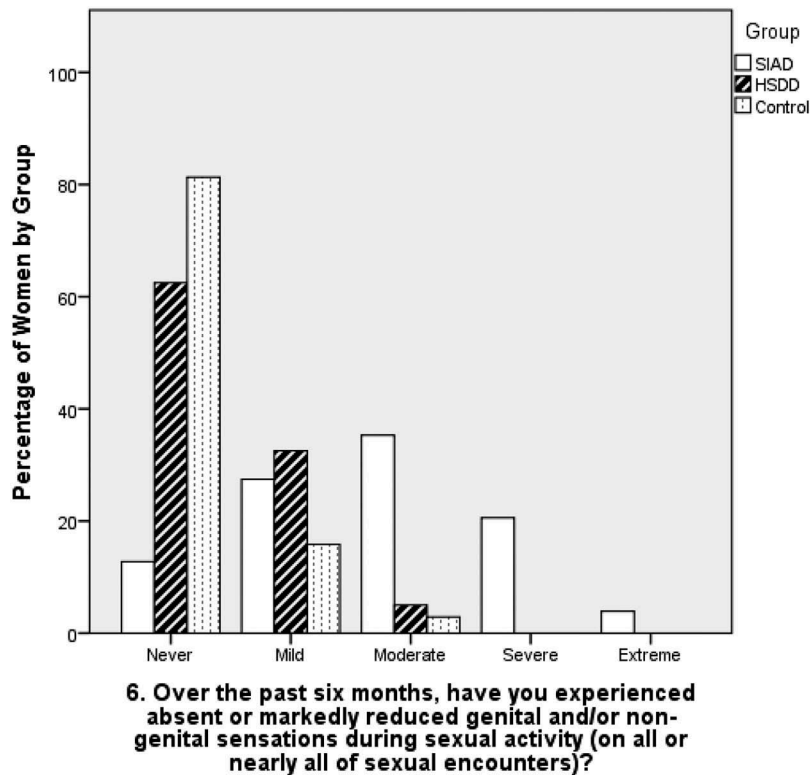


Figure 6. Proportion of women diagnosed with hypoactive sexual desire disorder (HSDD) and women with sexual interest/arousal disorder (SIAD) by severity rating for Item 6 on SIAD.

how many women diagnosed with HSDD would meet the diagnosis of SIAD and then comparing these two groups to each other and to a control group (i.e., women meeting neither diagnosis).

Overall, the results of the present study demonstrate that the SIAD diagnostic category, despite its stricter criteria, does not prevent women in an excessively exclusionary way from receiving a diagnosis of sexual dysfunction. Contrary to the results of the Sarin et al. (2013) study, in which only 42% of women with HSDD met criteria for SIAD, we found that the majority (73.5%) of women who received a diagnosis of HSDD also received a diagnosis when *DSM-5* SIAD criteria were used. In other words, nearly three-quarters of women diagnosed with HSDD continued to have a diagnosis of SIAD. One explanation for the disparate findings between the present study and the findings of Sarin et al. (2013) is that the present study used operational criteria for HSDD and SIAD that were based on the actual *DSM* diagnoses, whereas Sarin et al. (2013) made diagnostic decisions on the basis of “several reasoned assumptions” (p. 1097), without explicitly assessing for the SIAD criteria. This may have resulted in the large number of women excluded in their study due to the overly restrictive criteria that they imposed. Moreover, the present study was based on a sample size that was nearly 10 times the size of the sample used by Sarin et al. (2013) (i.e., $n = 151$ versus $n = 16$). By reducing the margin of error, the larger sample size in this study provides a more precise

representation of the eligibility of the SIAD diagnosis for women diagnosed with HSDD. The findings of the present study bring into question several of the conclusions made by Sarin et al. (2013), most ostensibly that diagnostic eligibility problems are compounded when using *DSM-5* operationalization for SIAD.

Although we found that most women with HSDD continued to meet a diagnosis of SIAD, we also found that those with SIAD had more severe symptoms compared to those with HSDD. Specifically, Figures 1 through 6 depict the distribution of responses to each of the six SIAD criteria and indicate a significantly higher percentage of women in the SIAD group describing their symptoms as moderate, severe, or extreme, compared to those in the HSDD group. Criterion 1 (desire for sex) and criterion 3 (initiation of and receptivity to sexual activity) showed the least amount of discrepancy between the two groups, with one-third of women with HSDD endorsing at least moderate intensity of reduced sexual desire and 40% endorsing at least moderate reductions in receptivity and initiation. Surprisingly, only 7.5% of women with HSDD reported a moderate to severe loss of sexual thoughts/fantasies, whereas 85% of women with SIAD did so. This finding is surprising given that the diagnostic criteria for HSDD require persistently or recurrently absent sexual fantasies (APA, 2000). It is possible that because the operational criteria for HSDD do not include the severity and duration of criteria, that women meeting criteria for HSDD may do so even after only a

minimal/mild reduction in sexual fantasies and/or that the duration of their reduced fantasies was for fewer than six months. Alternatively, it may be that women with a lesser degree of symptomatology (i.e., those in the HSDD group) were engaging in more sexual activity and evoking fantasies as a means of boosting sexual arousal (for a review, see Brotto, 2010c).

Three of the SIAD criteria had 7.5% or less of women with HSDD scoring at least moderately on each of them. These were item 4 (absent or reduced sexual excitement or pleasure), item 5 (reduced responsive desire), and item 6 (absent or reduced genital and/or nongenital sensations). Of note, these three were new criteria in the SIAD diagnosis that were arrived at on the basis of thorough literature reviews (Brotto, 2010c; Graham, 2010a) and expert feedback on proposed criteria. To explain our findings, we note others have found that arousal/lubrication problems are more likely to be experienced among women diagnosed with HSDD who experience severe symptomatology (Maserejian et al., 2012). Because women in the HSDD group showed mild symptomatology compared to women in the SIAD group, it is reasonable to assume that arousal/lubrication problems were less pronounced in this group. When we consider that arousal increases the likelihood that a responsive-type of desire will occur during sexual activity—even when engaged in for nonsexual reasons (e.g., bonding, partner pleasing; Basson, 2000)—it is understandable why women in the HSDD group were underrepresented in the moderate to severe range on these items (sexual pleasure, responsive desire, and genital sensations). This further indicates that the women with HSDD who no longer met diagnostic criteria when *DSM-5* SIAD criteria were used were those with mild symptomatology, many not even warranting a diagnosis of a sexual disorder. Some may interpret their scores on the measure of SIAD as indicating a healthy sexual response.

Taken together, findings on the endorsement of the six SIAD criteria suggest that the SIAD diagnostic category may prevent healthy individuals with mild (and possibly transient) sexual problems from receiving a diagnosis, while remaining sufficiently sensitive to diagnose those with a disorder (i.e., more persistent and severe sexual dysfunction). Importantly, difficulties with responding to sexual cues to trigger arousal and desire simultaneously are common (74.07%) in women with SIAD but rare, in fact less frequent than in controls, in women with HSDD.

We also compared the two groups on a validated measure of sexual desire and response using the SIDI-F. Women with SIAD attained significantly lower scores (representative of more significant sexual dysfunction) on average across the majority (11 of the 13) of SIDI-F items compared to the HSDD group. A greater degree of sexual dysfunction in the SIAD group was observed in the following areas: satisfaction with sexual aspects of the relationship; receptivity; desire frequency; desire satisfaction; desire distress; positive sexual thoughts; reaction to erotica; arousal frequency; arousal ease; arousal continuation; and orgasm ease/achievement. These

results suggest the SIAD diagnostic category “raises the bar” by distinguishing between mild and moderate-severe symptomatology, thus fulfilling its original intention.

Two SIDI-F items—initiation and nonsexual affection—showed no statistically significant difference between groups. As nonsexual affection does not map onto HSDD or SIAD criteria, we were not surprised to see little difference between groups. With regard to initiation, one possible explanation for the similarly low scores between groups is that women in the HSDD group, while showing lower levels of symptomatology compared to those in the SIAD group, were not asymptomatic. Even a mild or transient reduction in libido may explain a decrease in willingness to initiate sexual activity. This may be especially true for women who are in unsatisfying sexual relationships (note that although we excluded women for whom low desire was largely attributable to relationship discord, many of our participants may still have experienced some degree of relationship distress). Alternatively, this finding may be a result of traditional gender-role norms, which establish more permissibility for men to initiate sexual activity than for women (Muehlenhard & McCoy, 1991) and, in that way, have little to do with women’s levels of desire. Women in both groups by definition were experiencing distress about their sexuality; this alone might well preclude them from initiating sex.

In addition to assessing the degree to which women with an HSDD diagnosis would remain eligible for diagnosis when using *DSM-5* SIAD criteria, this study sought to systematically compare women in the HSDD group to those in the SIAD group on a series of demographic characteristics, including age, ethnicity, employment status, sexual orientation, and relationship status. No statistically significant difference was observed between groups with respect to any of the demographic characteristics examined. These findings suggest that women with HSDD and those with SIAD are similar with regard to a host of demographic characteristics. More generally, these results provide evidence of SIAD being a diagnostic category that does not bias or discriminate on the basis of demographic characteristics (i.e., age, ethnicity, sexual orientation, employment status), an important finding given that measurement invariance has not yet been studied with respect to SIAD.

Implications

Overall, the findings of the present study counter the concern that SIAD criteria exclude large numbers of women with moderate-marked HSDD (rather than severe) from diagnosis or treatment (Clayton et al., 2012a, 2012b). On the contrary, this study shows that the SIAD diagnostic category may be better at capturing more severe forms of dysfunction and across a broader array of manifestations of desire. Moreover, applying this diagnosis may also address concerns about diagnosing normative or adaptive changes in low desire that should not warrant treatment (Mitchell et al., 2013; Mitchell et al., 2016).

Limitations

There are limitations to this study that must be considered. First, although the total sample size was robust, and women received a face-to-face clinical interview to make the diagnosis of HSDD and SIAD, the two groups were unbalanced with regard to sample size, with considerably more women in the SIAD group than in the HSDD group. Future studies should seek to replicate the current methodology using larger sample sizes. Another possible limitation is that the majority of women were recruited from the community and not from a treatment center. It is possible that recruitment from a sample of treatment seekers may have revealed more similarities in the characteristics of women with HSDD and SIAD, given that treatment seekers tend to have a longer duration of low desire (Maserejian et al., 2010). Finally, given that women in this study were part of a larger study that involved salivary hormone collection, it is possible that they are not representative of the larger group of women with low desire who elect not to participate in research.

Conclusion

Overall, these findings suggest that SIAD captures the majority of women diagnosed with HSDD. Recent efforts to revert to implementing HSDD criteria and replace SIAD (Goldstein et al., 2017; Parish et al., 2016) do not seem warranted.

Acknowledgement

We wish to acknowledge funding from the Canadian Institutes for Health Research. We wish to also thank Melissa Moses and Chanel Wood for assistance in data collection. The authors report no conflicts of interest.

References

- American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: Author.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., Text rev.). Washington, DC: Author.
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.
- Balon, R. (2008). The DSM criteria of sexual dysfunction: Need for a change. *Journal of Sex and Marital Therapy, 34*, 186–197. doi:10.1080/00926230701866067
- Balon, R., & Clayton, A. H. (2014). Female sexual interest/arousal disorder: A diagnosis out of thin air. *Archives of Sexual Behavior, 43*, 1227–1229. doi:10.1007/s10508-013-0247-1
- Balon, R., & Clayton, A. H. (2015). Further commentary on DSM-5 FSIAD diagnosis. *Journal of Sexual Medicine, 12*, 576–577. doi:10.1111/jsm.12770
- Balon, R., Segraves, R. T., & Clayton, A. (2007). Issues for DSM-V: Sexual dysfunction, disorder, or variation along normal distribution: Toward rethinking DSM criteria of sexual dysfunctions. *American Journal of Psychiatry, 164*, 198–200. doi:10.1176/ajp.2007.164.2.198
- Basson, R. (2000). The female sexual response: A different model. *Journal of Sex & Marital Therapy, 26*, 51–65. doi:10.1080/009262300278641
- Basson, R. (2001). Human sex-response cycles. *Journal of Sex and Marital Therapy, 27*, 33–43. doi:10.1080/00926230152035831
- Basson, R. (2002). Rethinking low sexual desire in women. *British Journal of Obstetrics and Gynaecology, 109*, 357–363. doi:10.1111/j.1471-0528.2002.01002.x
- Binik, Y. M. (2010). The DSM diagnostic criteria for vaginismus. *Archives of Sexual Behavior, 39*, 278–291. doi:10.1007/s10508-009-9560-0
- Brotto, L. A. (2010a). The DSM diagnostic criteria for hypoactive sexual desire disorder in men. *Journal of Sexual Medicine, 7*, 2015–2030. doi:10.1111/j.1743-6109.2010.01860.x
- Brotto, L. A. (2010b). The DSM diagnostic criteria for hypoactive sexual desire disorder in women. *Archives of Sexual Behavior, 39*, 221–239. doi:10.1007/s10508-009-9543-1
- Brotto, L. A. (2010c). The DSM diagnostic criteria for sexual aversion disorder. *Archives of Sexual Behavior, 39*, 271–277. doi:10.1007/s10508-009-9534-2
- Carvalho, A. A., Brotto, L. A., & Leal, I. (2010). Women's motivations for sex: Exploring the *Diagnostic and Statistical Manual*, Text Revision criteria for hypoactive sexual desire and female sexual arousal disorders. *Journal of Sexual Medicine, 7*, 1454–1463. doi:10.1111/j.1743-6109.2009.01693.x
- Clayton, A. H., DeRogatis, L. R., Rosen, R. C., & Pyke, R. (2012a). Intended or unintended consequences? The likely implications of raising the bar for sexual dysfunction diagnosis in the proposed DSM-V revisions: 1. For women with incomplete loss of desire or sexual receptivity. *Journal of Sexual Medicine, 9*, 2027–2039. doi:10.1111/j.1743-6109.2012.02850.x
- Clayton, A. H., DeRogatis, L. R., Rosen, R. C., & Pyke, R. (2012b). Intended or unintended consequences? The likely implications of raising the bar for sexual dysfunction diagnosis in the proposed DSM-V revisions: 2. For women with loss of subjective sexual arousal. *Journal of Sexual Medicine, 9*, 2040–2046. doi:10.1111/j.1743-6109.2012.02859.x
- Clayton, A. H., Goldfischer, E. R., Goldstein, I., DeRogatis, L., Lewis-D'Agostino, D. J., & Pyke, R. (2009). Validation of the Decreased Sexual Desire Screener (DSDS): A brief diagnostic instrument for generalized acquired female hypoactive sexual desire disorder (HSDD). *Journal of Sexual Medicine, 6*, 730–738. doi:10.1111/j.1743-6109.2008.01153.x
- Clayton, A. H., Segraves, R. T., Leiblum, S., Basson, R., Pyke, R., Cotton, D., ... Wunderlich, G. R. (2006). Reliability and validity of the Sexual Interest and Desire Inventory—Female (SIDI-F), a scale designed to measure severity of female hypoactive sexual desire disorder. *Journal of Sex and Marital Therapy, 32*, 115–135. doi:10.1080/00926230500442300
- Connaughton, C., McCabe, M., & Karantzas, G. (2016). Conceptualization of the sexual response models in men: Are there differences between sexually functional and dysfunctional men? *Journal of Sexual Medicine, 13*, 453–463. doi:10.1016/j.jsxm.2015.12.032
- Derogatis, L. R., Sand, M., Balon, R., Rosen, R., & Parish, S. J. (2016). Toward a more evidence-based nosology and nomenclature for female sexual dysfunctions—Part I. *Journal of Sexual Medicine, 13*, 1881–1887. doi:10.1016/j.jsxm.2016.09.014
- Ferenidou, F., Kirana, P. S., Fokas, K., Hatzichristou, D., & Athanasiadis, L. (2016). Sexual response models: Toward a more flexible pattern of women's sexuality. *Journal of Sexual Medicine, 13*, 1369–1376. doi:10.1016/j.jsxm.2016.07.008
- Giraldi, A., Kristensen, E., & Sand, M. (2015). Endorsement of models describing sexual response of men and women with a sexual partner: An online survey in a population sample of Danish adults ages 20–65 years. *Journal of Sexual Medicine, 12*, 116–128. doi:10.1111/jsm.12720
- Goldstein, I., Kim, N. N., Clayton, A. H., DeRogatis, L. R., Giraldi, A., Parish, S. J., ... Stahl, S. M. (2017). Hypoactive sexual desire disorder: International Society for the Study of Women's Sexual Health (ISSWSH) expert consensus panel review. *Mayo Clinic Proceedings, 92*, 114–128. doi:10.1016/j.mayocp.2016.09.018

- Graham, C. A. (2010a). The *DSM* diagnostic criteria for female sexual arousal disorder. *Archives of Sexual Behavior*, *39*, 240–255. doi:10.1007/s10508-009-9535-1
- Graham, C. A. (2010b). The *DSM* diagnostic criteria for female orgasmic disorder. *Archives of Sexual Behavior*, *39*, 256–270. doi:10.1007/s10508-009-9542-2
- Graham, C. A., Brotto, L. A., & Zucker, K. J. (2014). Response to Balon and Clayton (2014): Female sexual interest/arousal disorder is a diagnosis more on firm ground than thin air. *Archives of Sexual Behavior*, *43*, 1231–1234. doi:10.1007/s10508-013-0248-0
- Kaplan, H. S. (1977). Hypoactive sexual desire. *Journal of Sex and Marital Therapy*, *3*(1), 3–9. doi:10.1080/00926237708405343
- Kaplan, H. S. (1979). *Disorders of sexual desire*. New York, NY: Brunner/Mazel.
- Laan, E., & Both, S. (2008). What makes women experience desire? *Feminism and Psychology*, *18*, 505–514. doi:10.1177/0959353508095533
- Laan, E., & Janssen, E. (2007). How do men and women feel? Determinants of subjective experiences in sexual arousal. In E. Janssen (Ed.), *The psychophysiology of sex* (pp. 278–290). Bloomington: Indiana University Press.
- Lief, H. I. (1977). What's new in sex research? Inhibited sexual desire. *Medical Aspects of Human Sexuality*, *11*, 94–95.
- Maserejian, N. N., Parish, S. J., Shifren, J. L., Huang, L., Gerstenberger, E., & Rosen, R. C. (2010). Healthcare utilization in women diagnosed hypoactive sexual desire disorder: Interim baseline results from the HSDD Registry for Women. *Journal of Women's Health*, *19*, 2001–2009. doi:10.1089/jwh.2010.2152
- Maserejian, N. N., Shifren, J., Parish, S. J., Segraves, R. T., Huang, L., & Rosen, R. C. (2012). Sexual arousal and lubrication problems in women with clinically diagnosed hypoactive sexual desire disorder: Preliminary findings from the Hypoactive Sexual Desire Disorder Registry for Women. *Journal of Sex and Marital Therapy*, *38*, 41–62. doi:10.1080/0092623X.2011.569642
- Masters, W. H., & Johnson, V. E. (1966). *Human sexual response*. Boston, MA: Little, Brown.
- Meana, M. (2010). Elucidating women's (hetero) sexual desire: Definitional challenges and content expansion. *Journal of Sex Research*, *47*, 104–122. doi:10.1080/00224490903402546
- Meston, C. M., & Buss, D. M. (2007). Why humans have sex. *Archives of Sexual Behavior*, *36*, 477–507. doi:10.1007/s10508-007-9175-2
- Mitchell, K. R., Jones, K. G., Wellings, K., Johnson, A. M., Graham, C. A., Datta, J., ... Field, N. (2016). Estimating the prevalence of sexual function problems: The impact of morbidity criteria. *Journal of Sex Research*, *53*, 955–967. doi:10.1080/00224499.2015.1089214
- Mitchell, K. R., Mercer, C. H., Ploubidis, G. B., Jones, K. G., Datta, J., Field, N., ... Clifton, S. (2013). Sexual function in Britain: Findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3). *The Lancet*, *382*, 1817–1829. doi:10.1016/S0140-6736(13)62366-1
- Muehlenhard, C. L., & McCoy, M. L. (1991). Double standard/double bind: The sexual double standard and women's communication about sex. *Psychology of Women Quarterly*, *15*, 447–461. doi:10.1111/j.1471-6402.1991.tb00420.x
- Nowosielski, K., Wróbel, B., & Kowalczyk, R. (2016). Women's endorsement of models of sexual response: Correlates and predictors. *Archives of Sexual Behavior*, *45*(2), 291–302. doi:10.1007/s10508-015-0611-4
- Öberg, K., Fugl-Meyer, A. R., & Fugl-Meyer, K. S. (2004). On categorization and quantification of women's sexual dysfunctions: An epidemiological approach. *International Journal of Impotence Research*, *16*, 261–269. doi:10.1038/sj.ijir.3901151
- Parish, S. J., Goldstein, A. T., Goldstein, S. W., Goldstein, I., Pfafs, J., Clayton, A. H., ... Komisaruk, B. (2016). Toward a more evidence-based nosology and nomenclature for female sexual dysfunctions—Part II. *Journal of Sexual Medicine*, *13*, 1888–1906. doi:10.1016/j.jsxm.2016.09.020
- Pyke, R. E., & Clayton, A. H. (2015). Psychological treatment trials for hypoactive sexual desire disorder: A sexual medicine critique and perspective. *Journal of Sexual Medicine*, *12*, 2451–2458. doi:10.1111/jsm.13056
- Sarin, S., Amsel, R. M., & Binik, Y. M. (2013). Disentangling desire and arousal: A classificatory conundrum. *Archives of Sexual Behavior*, *42*, 1079–1100. doi:10.1007/s10508-013-0100-6
- Segraves, R. T. (2010a). Considerations for a better definition of male orgasmic disorder in *DSM-V*. *Journal of Sexual Medicine*, *7*, 690–695. doi:10.1111/j.1743-6109.2009.01683.x
- Segraves, R. T. (2010b). Considerations for an evidence-based definition of premature ejaculation in the *DSM-V*. *Journal of Sexual Medicine*, *7*, 672–679. doi:10.1111/j.1743-6109.2009.01682.x
- Segraves, R. T. (2010c). Considerations for diagnostic criteria for erectile dysfunction in *DSM-V*. *Journal of Sexual Medicine*, *7*, 654–660. doi:10.1111/j.1743-6109.2009.01684.x
- Segraves, R. T., Balon, R., & Clayton, A. (2007). Reviews: Proposal for changes in diagnostic criteria for sexual dysfunctions. *Journal of Sexual Medicine*, *4*, 567–580. doi:10.1111/j.1743-6109.2007.00455.x
- Singer, B., & Toates, F. M. (1987). Sexual motivation. *Journal of Sex Research*, *23*, 481–501. doi:10.1080/00224498709551386
- Tiefer, L. (1991). Historical, scientific, clinical, and feminist criticisms of “the human sexual response cycle” model. *Annual Review of Sex Research*, *2*, 1–23. doi:10.1080/10532528.1991.10559865
- Toates, F. (2009). An integrative theoretical framework for understanding sexual motivation, arousal, and behavior. *Journal of Sex Research*, *46*, 168–193. doi:10.1080/00224490902747768