

## Cues Resulting in Desire for Sexual Activity in Women

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### ABSTRACT

**Introduction.** A number of questionnaires have been created to assess levels of sexual desire in women, but to our knowledge, there are currently no validated measures for assessing cues that result in sexual desire. A questionnaire of this nature could be useful for both clinicians and researchers, because it considers the contextual nature of sexual desire and it draws attention to individual differences in factors that can contribute to sexual desire.

**Aim.** The aim of the present study was to create a multidimensional assessment tool of cues for sexual desire in women that is validated in women with and without hypoactive sexual desire disorder (HSDD).

**Methods.** Factor analyses conducted on both an initial sample (N = 874) and a community sample (N = 138) resulted in the Cues for Sexual Desire Scale (CSDS) which included four factors: (i) Emotional Bonding Cues; (ii) Erotic/Explicit Cues; (iii) Visual/Proximity Cues; and (iv) Implicit/Romantic Cues.

**Main Outcome Measures.** Scale construction of cues associated with sexual desire and differences between women with and without sexual dysfunction.

**Results.** The CSDS demonstrated good reliability and validity and was able to detect significant differences between women with and without HSDD. Results from regression analyses indicated that both marital status and level of sexual functioning predicted scores on the CSDS. The CSDS provided predictive validity for the Female Sexual Function Index desire and arousal domain scores, and increased cues were related to a higher reported frequency of sexual activity in women.

**Conclusions.** The findings from the present study provide valuable information regarding both internal and external triggers that can result in sexual desire for women. We believe that the CSDS could be beneficial in therapeutic settings to help identify cues that do and do not facilitate sexual desire in women with clinically diagnosed desire difficulties. **McCall K, and Meston C. Cues resulting in desire for sexual activity in women. J Sex Med 2006;3:838–852.**

**Key Words.** Sexual Desire; Female Sexual Dysfunction

### Introduction

Using a random probability sample, Laumann, Paik, and Rosen [1] reported that concerns regarding sexual desire are the largest sexual problem among women in the United States. In this sample of 1,486 women, approximately 32% of the women reported a lack of sexual interest. Although the statistics based on clinical samples of women reporting to sexual health clinics and/or gynecologic offices generally report somewhat lower estimates of sexual desire problems; the incidence of these concerns is still high [2–5]. Despite the high

prevalence of sexual desire concerns, there are currently no empirically validated treatments for hypoactive sexual desire disorder (HSDD) [6]. To date, evidence from clinical and research reports suggests that sexual desire problems are relatively difficult to treat and efforts to treat HSDD have often provided inconsistent results [7–9]. It is feasible that these inconsistencies could, in part, be accounted for by the highly complex and individualized nature of factors that facilitate and result in desire for sexual activity in women.

Reports from clinicians involved in the treatment of sexual desire concerns often include dis-

cussions of both internal and external triggers or cues that result in sexual desire. Based on his 20 years of psychiatry experience, Levine [10] proposed a list of 11 stimuli that result in sexual desire, including: (i) psychological intimacy; (ii) falling in love; (iii) viewing, reading about, or listening to people having explicitly described enjoyable sex; (iv) viewing, reading about, or listening to a romantic sequence between two personally appealing people; (v) invoking a fantasy that has been reliably erotic in the past; (vi) wanting to be pregnant; (vii) low doses of street drugs; (viii) enlightenment; (ix) repairing a recently troubled relationship; (x) reclaiming an errant lover; and (xi) alleviation from a previous form of sexual dysfunction. Consistent with Levine's perspectives, in their book, "Reclaiming Desire," Goldstein and Brandon [11] discuss the importance of one's receptivity to sexual cues in order to ignite feelings of sexual desire. Throughout the book, Goldstein and Brandon discuss various clinical vignettes in which external cues (e.g., romantic or erotic sexual escapades, provocative clothing, sexy music, swimming naked) were crucial in eliciting feelings of sexual desire. In Leiblum and Sachs's book, *Getting the Sex you Want* [12], the authors suggest many external solutions for women with low sexual desire, such as using sex toys or pornography, and engaging in masturbation or sexual visualization. They also discuss how certain music, tastes, and scents can create feelings of sexual desire for some women. Leiblum and Sachs acknowledge the individualized nature of sexual desire by encouraging women to experiment with many of these external resources to determine "what works for them." In Pridal and LoPiccolo's [13] multielement treatment of sexual desire disorders, they propose a behavioral intervention stage labeled as "drive induction" which involves assigning couples to attend to and record sexual cues in a "desire diary." The aim of this phase of treatment is to raise awareness of sexual cues and to implement behavioral interventions in which individuals attempt to increase exposure to these cues or stimuli.

Little empirical research has focused specifically on sexual desire cues. Exceptions include studies examining the relation between misjudgment of sexual cues and sexually aggressive behavior [14–16] and a study by Regan and Berscheid [17] that investigated potential gender differences in the beliefs about the causes of sexual desire. In this study, participants were given a broad definition of sexual desire and asked to answer a series of open-ended questions regarding their beliefs about the

causal antecedents of sexual desire. Results indicated that women more than men viewed sexual desire as caused by external factors (e.g., social or physical environment, relationship factors). Interestingly, both men and women believed that female sexual desire was caused by interpersonal factors (e.g., feeling of love) and physical environmental factors (e.g., romantic setting), whereas male sexual desire was caused by intraindividual factors (e.g., "maleness") and erotic factors (e.g., porn media).

A number of validated questionnaires have been created to assess levels of sexual desire in women (e.g., [18,19]), but to our knowledge, there are no validated measures intended for the assessment of cues that result in sexual desire. A questionnaire of this nature could be useful for both clinicians and researchers, because it considers the contextual nature of sexual desire and it draws attention to potential individual differences in the various factors that can contribute to sexual desire.

The overall aim of the present study was to create a multidimensional assessment tool of cues associated with sexual desire in women. Specifically, we hoped to empirically categorize stimuli associated with sexual desire and to validate this assessment tool in a clinical population of women with female sexual dysfunction (FSD), in particular, women with HSDD.

## Initial Methods

### *Phase I: Initial Item Generation and Factor Analyses*

Fifty women (age range 18–67 years) were involved in the item generation stage. Participants were recruited from community volunteers and students enrolled in a human sexuality course at the University of Texas. Participants were asked the following open-ended prompt, "What makes you desire sexual activity?" Sexual activity was defined as "kissing, petting, oral sex, intercourse, and/or masturbation." Participants were encouraged to list as many responses as possible. Overlapping responses were combined and yielded a total of 125 items.

The 125 generated items (see Appendix 1) were listed using a conventional questionnaire format with each item presented as a brief descriptive statement to which respondents rated the likelihood that a given item would make them desire sexual activity. The response choices were listed on a 5-point Likert scale, with scale interval anchors being: *Not at all likely* (1), *Somewhat likely* (2), *Moderately likely* (3), *Very likely* (4), and *Extremely likely* (5). This 125-item questionnaire,

a demographics questionnaire, and several other measures not relevant to the current study were administered to 874 females. Participants included students at the University of Texas and community volunteers. Sixty-four percent of the subjects identified themselves as Caucasian, 6% as African American, 16% as Hispanic, 13% as Asian, and 1% as other. Subjects ranged in age from 17 to 72 years (mean = 21 years, SD = 7 years). The questionnaires were administered to small groups of women, and a female research assistant was available to answer any potential questions. To help ensure confidentiality and anonymity, female respondents were asked to seal their completed questionnaires in a blank envelope and then deposit it into a large "drop box" containing numerous other identical envelopes.

We completed a factor analysis based on principal components extraction followed by oblique rotation to simple structure via the Direct Oblimin method. Upon inspection of the corresponding screen plot, we extracted four factors with eight values exceeding a value of one. All factor loadings were to be limited to values  $>0.40$ . Factor 1 initially included 31 items that loaded greater than 0.40. Fifteen items were eliminated because of high inter-item correlations ( $>0.60$ ), three items were eliminated for theoretical reasons, and three items were eliminated because they cross-loaded on two or more factors. Factor 2 initially included 34 items that loaded greater than 0.40. Seventeen items were eliminated because of high inter-item correlations ( $>0.60$ ), six items were eliminated for theoretical reasons, and one item was eliminated because it cross-loaded on two or more factors. Factor 3 initially included 24 items that loaded greater than 0.40. Nine items were eliminated because of high inter-item correlations ( $>0.60$ ), four items were eliminated for theoretical reasons, and one item was eliminated because it cross-loaded on two or more factors. Factor 4 initially included 19 items that loaded greater than 0.40. Six items were eliminated because of high inter-item correlations ( $>0.60$ ), two items were eliminated for theoretical reasons, and one item was eliminated because it cross-loaded on two or more factors. In an effort to derive a more concise measure, several items that had high inter-item correlations and similar meaning/wording were collapsed into single items. The resulting 40-item scale included four factors (10 items within each) and was labeled the Cues for Sexual Desire Scale (CSDS). The factors of the CSDS were described as: Emotional Bonding Cues, Erotic/Explicit

Cues, Visual/Proximity Cues, and Romantic/Implicit Cues. See Table 1 for a list of final scale items and factor loadings; see Appendix 2 for the final version of the CSDS.

#### *Phase II: Validation on a Community Sample of Women with FSD and Age-Matched Controls*

##### **Procedure**

Participants were recruited through local radio and newspapers advertisements and were paid \$50.00 for participation in the study. Inclusion criteria included: age between 18 and 70 years, and current involvement in a stable, sexually active relationship. Participants who met these criteria completed interviews with a trained female clinician to determine whether or not they met Diagnostic and Statistical Manual (DSM-IV-TR) [20] criteria for any of the following sexual dysfunctions: HSDD, female sexual arousal disorder (FSAD), female orgasmic disorder (FOD), dyspareunia, vaginismus, or sexual aversion disorder.

##### **Measures**

Participants completed a basic participant information questionnaire, the Female Sexual Function Index (FSFI) [18], the Beck Depression Inventory (BDI) [21], and additional measures not relevant to the present study (for details, see Meston [22]).

In addition to asking about basic demographic information (e.g., age, education, ethnicity, and income), our participant information questionnaire also included questions regarding marital status (single vs. married vs. divorced), whether women had children (Yes or No), whether women were taking antidepressants or contraceptives (Yes or No), and frequency of sexual activity. Frequency of sexual activity was assessed through the following question "How often do you engage in sexual activity?" Answer choices included: "less than once per month," "1–2 times per month," "1–2 times per week," "3–4 times per week," and "more than 4 times per week."

The FSFI was used to assess current levels of sexual function. The FSFI is composed of 19 items divided into factor-analytic derived subscales: desire (two items), arousal (four items), lubrication (four items), orgasm (three items), satisfaction (three items), and pain (three items). In a recent article, Wiegel, Meston, and Rosen [23] reported internal consistency within each subscale to reflect values in an acceptable range (Cronbach's  $\alpha = 0.82$ – $0.98$ ). Rosen et al. [18] reported inter-item reliability values within the acceptable range for sexually healthy women (Cronbach's  $\alpha = 0.82$ –

**Table 1** Phase I factor analysis of the 40-item CSDS in initial sample

Item	Factors			
	1	2	3	4
<b>Emotional Bonding Cues</b>				
1. Feeling a sense of love with a partner	0.81			
2. Feeling a sense of security in your relationship	0.77			
3. Your partner is supportive of you	0.86			
4. Your partner does "special" or "loving" things for you	0.73			
5. Feeling a sense of commitment from a partner	0.77			
6. Your partner expresses interest in hearing about you	0.68			
7. Talking about the future with your partner	0.62			
8. Feeling protected by a partner	0.40			
9. Experiencing emotional closeness with a partner	0.45			
10. Feeling protective of a partner	0.54			
<b>Explicit/Erotic Cues</b>				
1. Watching an erotic movie		0.82		
2. Reading about sexual activity (e.g., pornographic magazine)		0.73		
3. Watching or listening to other people engage in sexual behavior/activity		0.73		
4. Talking about sexual activity or "talking dirty"		0.71		
5. Watching a strip tease		0.66		
6. Sensing your own or your partner's wetness, lubrication, or erection		0.69		
7. Asking for or anticipating sexual activity		0.64		
8. Hearing your partner tell you that he or she fantasized about you		0.61		
9. Having a sexual fantasy (e.g., having a sexual dream, daydreaming)		0.61		
10. You experience genital sensations (e.g., increased blood flow to genitals)		0.57		
<b>Visual/Proximity Cues</b>				
1. Seeing someone who is well-dressed or "has class"			0.58	
2. Seeing/talking with someone powerful			0.66	
3. Being in close proximity with attractive people			0.57	
4. Seeing/talking with someone famous			0.63	
5. Seeing a well-toned body			0.52	
6. Seeing/talking with someone wealthy			0.64	
7. Watching someone engage in physical activities (e.g., sports)			0.52	
8. Seeing someone act confidently			0.44	
9. Seeing/talking with someone intelligent			0.50	
10. Flirting with someone or having someone flirt with you			0.50	
<b>Romantic/Implicit Cues</b>				
1. Whispering into your partner's ear/having your partner whisper into your ear				0.61
2. Dancing closely				0.59
3. Watching a sunset				0.47
4. Having a romantic dinner with a partner				0.48
5. Watching a romantic movie				0.46
6. Being in a hot tub				0.50
7. Touching your partner's hair or face				0.54
8. Giving or receiving a massage				0.52
9. Laughing with a romantic partner				0.45
10. Smelling pleasant scents (e.g., perfume/cologne, shampoo, aftershave)				0.40

Factor loadings <0.40 have been suppressed. All factor loadings are absolute values.  
CSDS = Cues for Sexual Desire Scale.

0.92), as well as for women with diagnosed FSAD (Cronbach's  $\alpha = 0.89\text{--}0.95$ ). Test-retest reliabilities assessed using a 4-week interval ranged between Pearson's  $r = 0.79\text{--}0.86$  [18]. Additionally, Weigel, Meston, and Rosen [23] provided strong evidence of discriminant validity between women with and without sexual dysfunction for FSFI total score and each subscale score, although a high degree of overlap was present across various diagnostic groups.

The BDI is the most widely used instrument to assess severity of depressive symptoms. The BDI

is a 21-item questionnaire with well-published reliability and validity [21]. Past studies using the BDI have reported that scores above 16 are specific to major depression [24].

### Participants

Data from 138 women were included in the present analysis. Sixty-three women did not meet DSM-IV-TR [20] criteria for HSDD, FSAD, FOD, dyspareunia, vaginismus, or sexual aversion disorder. These women were considered sexually healthy controls and had a mean age of 26.1 years

(SD = 7.6 years, range = 18–53 years). Seventy-five women met criteria for some form of FSD and had a mean age of 28.6 years (SD = 8.7 years, range = 18–51 years). Thirty-two (23.1%) of these women met criteria for FSAD, 30 (21.7%) met criteria for HSDD, 48 (34.7%) met criteria for FOD, and seven (5%) met criteria for a sexual pain disorder. Thirty-two (23.2%) of the women with FSD met criteria for more than one sexual dysfunction (FSAD and HSDD, N = 3; FSAD and FOD, N = 8; FSAD and pain, N = 1; HSDD and FOD, N = 10; FSAD, HSDD, and FOD, N = 8; FSAD, FOD, and pain, N = 2).

Participant characteristics are reported in Table 2. These participants represent a subset of

the women who participated in a FSFI validation study by Meston [22]. An independent samples *t*-test revealed that there were no significant age differences between sexually healthy women and women with FSD,  $t(2, 136) = -1.74, P = 0.09$ . Women with FSD had significantly higher scores on the BDI as compared with sexually healthy women,  $t(2, 136) = -2.83, P = 0.006$ . Consistent with this finding, likelihood ratios indicated that women with FSD were more likely to be currently taking antidepressant medication as compared with sexually healthy controls,  $LR(1) = 5.53, P = 0.02$ . Results from likelihood ratios also indicated that women with FSD were more likely to have reported having children as compared with

**Table 2** Phase II participant characteristics

	FSD N = 75	Controls N = 63	P value
Age			0.09
Mean ( $\pm$ SEM)	28.56 (8.7)	26.13 (7.6)	
Range	18–51	18–53	
BDI			0.006
Mean ( $\pm$ SEM)	10.39 (6.9)	7.17 (5.4)	
Range	0–30	0–22	
Ethnicity N (%)			0.77
Caucasian	55 (73.3)	44 (69.8)	
African American	3 (4.0)	2 (3.2)	
Hispanic	12 (16.0)	9 (14.3)	
Asian	3 (4.0)	6 (9.5)	
Other	2 (2.7)	2 (3.2)	
Education N (%)			0.58
High school/GED	13 (17.3)	6 (9.5)	
2 years of college	28 (37.3)	25 (39.7)	
4 years of college	27 (36.0)	24 (38.1)	
Graduate school	7 (9.3)	8 (12.7)	
Annual income N (%)			0.99
<50,000	47 (62.7)	40 (63.5)	
50,000–100,000	16 (21.3)	13 (20.6)	
>100,000	12 (16.0)	10 (15.9)	
Marital status N (%)			0.15
Married	15 (20.0)	7 (11.1)	
Divorced or single	60 (80.0)	56 (88.9)	
Have children (% Yes)	18 (25.4)	5 (9.3)	0.02
Birth control use (% Yes)	54 (72.0)	48 (76.2)	0.58
Antidepressant use (% Yes)	8 (11.0)	1 (1.6)	0.02
Frequency of sexual activity			0.09
<once per month	0 (0.0)	1 (1.6)	0.10
1–2 per month	11 (14.7)	7 (11.1)	
1–2 per week	43 (57.3)	27 (42.9)	
3–4 per week	17 (22.7)	17 (27.0)	
>4 per week	4 (5.3)	11 (17.5)	
FSFI domain scores* (mean $\pm$ SEM)			
Desire	3.9 (0.99)	4.4 (0.88)	0.002
Arousal	4.3 (1.1)	5.2 (0.75)	<0.001
Lubrication	4.6 (1.5)	5.4 (0.75)	<0.001
Orgasm	3.8 (1.6)	5.2 (1.0)	<0.001
Pain	5.1 (1.3)	5.8 (0.58)	<0.001
Satisfaction	4.3 (1.3)	4.9 (1.1)	0.01
Total	26.2 (4.6)	30.9 (3.3)	<0.001

The FSFI scores reported here were included in the calculation of the FSFI scores reported in Meston [22].

\*Higher scores represent higher levels of function for all domains except pain.

FSD = female sexual dysfunction; BDI = Beck Depression Inventory; GED = general educational development; FSFI = Female Sexual Function Index.



sexually healthy controls,  $LR(1) = 5.64, P = 0.02$ . Likelihood ratios indicated that the two groups did not significantly differ on race/ethnicity,  $LR(4) = 1.83, P = 0.77$ ; contraceptive use,  $LR(1) = 0.31, P = 0.58$ ; or marital status,  $LR(1) = 2.07, P = 0.15$ . Results from chi-squared analyses indicated the groups did not differ significantly on annual income,  $\chi(2) = 0.01, P = 0.99$ ; reported frequency of sexual activity,  $\chi(4) = 7.83, P = 0.10$ ; and educational background,  $\chi(3) = 1.96, P = 0.58$ . Univariate ANOVAs revealed significant differences in FSFI domain and total scores between women with FSD and sexually healthy women. That is, women with FSD reported lower levels of desire,  $F(1, 137) = 10.15, P = 0.002$ ; arousal,  $F(1, 137) = 29.36, P < 0.001$ ; lubrication,  $F(1, 137) = 16.06, P < 0.001$ ; orgasm,  $F(1, 137) = 37.05, P < 0.001$ ; satisfaction,  $F(1, 137) = 6.81, P = 0.01$ ; higher levels of sexual pain,  $F(1, 137) = 12.83, P < 0.001$ ; and overall FSFI total scores,  $F(1, 137) = 44.26, P < 0.001$  (see Table 2).

### Phase II: Confirmatory Factor Analyses

Based on our Phase I factor analysis results, we expected that a confirmatory factor analysis would demonstrate a clear, four-factor structure. To evaluate this, using the data from the 138 women included in our community sample, we conducted a principal components analysis on the 40 items, extracting four factors, and rotating the factors to oblique simple structure via the Direct Oblimin method. Item loadings of the resulting four factors are presented in Table 3. All four factors closely replicated those obtained in Phase I with the exception of one item from Factor 3 (i.e., "Seeing someone act confidently") which cross-loaded onto Factor 1 (i.e., 0.51 on Factor 3 vs. 0.47 on Factor 1). See Table 3.

### Intercorrelations

Separate values to represent the four factors of Emotional Bonding Cues, Erotic/Explicit Cues, Visual/Proximity Cues, and Romantic/Implicit Cues were scored by taking an average of the responses to the 10 constituent items assigned to each factor. Intercorrelations among the resulting four factor values are presented in Table 4 separately for Phase I initial sample ( $N = 874$ ); and Phase II full community sample ( $N = 138$ ), sexually healthy controls from the community sample ( $N = 63$ ), the combined group of women with FSD from the community sample ( $N = 75$ ), and women with HSDD from the community sample ( $N = 30$ ). Most notably, correlations between Emo-

tional Bonding Cues and Romantic/Implicit Cues were high in magnitude for all subsamples of FSD and sexually healthy women (all  $r_s > 0.64$ ). Also noteworthy, correlations between Emotional Bonding Cues and Visual/Proximity Cues and correlations between Erotic/Explicit Cues and Visual/Proximity Cues indicated moderate relationships (range of 0.37–0.59) in all groups, except for women with HSDD. In this group of women, correlations between these factors were lower,  $r = 0.16$  and  $r = 0.13$ , respectively (see Table 4).

### Reliability

Cronbach's coefficient alphas for the four factors of the CSDS are presented in Table 5 for the Phase I initial sample ( $N = 874$ ) and the Phase II full community sample ( $N = 138$ ). All alphas were  $> 0.78$  for both samples.

### Discriminant Validity

The ability of the CSDS to differentiate between sexually healthy women and women with FSD, and between sexually healthy women and a subset of FSD women with a specific diagnosis of HSDD was assessed by comparing the mean responses of these women on each of the four factors and the total scale of the CSDS. Results from between-group (HSDD vs. Controls) ANOVAs revealed significant differences between sexually healthy women and women with HSDD on all four factors and total score of the CSDS. Between-group ANOVAs that compared sexually healthy women and women with FSD revealed significant differences between groups on the CSDS total score, but there were no significant differences between groups for each factor of the CSDS. It is important to note that for all four factors and total score of the CSDS, women in the HSDD group had the lowest scores, sexually healthy controls had the highest scores, and women in the FSD combined group score values were between these two groups (See Table 6 for means ( $\pm$ SD) for each individual item, factor, and total scores of CSDS by participant group).

### Concurrent/Divergent Validity

Concurrent validity was assessed by calculating relations between the four factor scores and the total score of the CSDS with the FSFI desire domain scores for women with HSDD ( $N = 30$ ). Correlational results indicated that, although the two scales are related, they clearly do not measure the same construct (range in Pearson's correlation coefficients = 0.10–0.24, with none reaching statistical significance).

**Table 3** Phase II confirmatory factor analysis of the 40-item CSDS in a community sample

Item	Factors			
	1	2	3	4
<b>Emotional Bonding Cues</b>				
1. Feeling a sense of love with a partner	0.75			
2. Feeling a sense of security in your relationship	0.76			
3. Your partner is supportive of you	0.79			
4. Your partner does "special" or "loving" things for you	0.70			
5. Feeling a sense of commitment from a partner	0.89			
6. Your partner expresses interest in hearing about you	0.66			
7. Talking about the future with your partner	0.66			
8. Feeling protected by a partner	0.56			
9. Experiencing emotional closeness with a partner	0.49			
10. Feeling protective of a partner	0.62			
<b>Explicit/Erotic Cues</b>				
1. Watching an erotic movie		0.76		
2. Reading about sexual activity (e.g., pornographic magazine)		0.75		
3. Watching or listening to other people engage in sexual behavior/activity		0.83		
4. Talking about sexual activity or "talking dirty"		0.65		
5. Watching a strip tease		0.57		
6. Sensing your own or your partner's wetness, lubrication, or erection		0.59		
7. Asking for or anticipating sexual activity		0.55		
8. Hearing your partner tell you that he or she fantasized about you		0.68		
9. Having a sexual fantasy (e.g., having a sexual dream, daydreaming)		0.66		
10. You experience genital sensations (e.g., increased blood flow to genitals)		0.43		
<b>Visual/Proximity Cues</b>				
1. Seeing someone who is well-dressed or "has class"			0.65	
2. Seeing/talking with someone powerful			0.76	
3. Being in close proximity with attractive people			0.71	
4. Seeing/talking with someone famous			0.69	
5. Seeing a well-toned body			0.59	
6. Seeing/talking with someone wealthy			0.78	
7. Watching someone engage in physical activities (e.g., sports)			0.51	
8. Seeing someone act confidently	0.47		0.51	
9. Seeing/talking with someone intelligent			0.61	
10. Flirting with someone or having someone flirt with you			0.62	
<b>Romantic/Implicit Cues</b>				
1. Whispering into your partner's ear/having your partner whisper into your ear				0.62
2. Dancing closely				0.73
3. Watching a sunset				0.60
4. Having a romantic dinner with a partner				0.68
5. Watching a romantic movie				0.63
6. Being in a hot tub				0.61
7. Touching your partner's hair or face				0.52
8. Giving or receiving a massage				0.71
9. Laughing with a romantic partner				0.57
10. Smelling pleasant scents (e.g., perfume/cologne, shampoo, aftershave)				0.51

Factor loadings which are inconsistent with those from Phase I have been placed in italics. CSDS = Cues for Sexual Desire Scale.

### Predictors of Sexual Desire Cues

Predictors of how women scored on the different factors of the CSDS were examined using simple linear regression analyses. The examined predictor variables included: age, level of sexual dysfunction (FSFI total scores), marital status (single/divorced vs. married), having children (Yes/No), and depressive symptomology (BDI scores).

Age, depressive symptomology, and whether a woman had children were not significant predictors of the CSDS total score or any of the individual factor scores. Level of sexual functioning

significantly predicted Factor 1 (i.e., Emotional Bonding Cues), Factor 2 (Erotic/Explicit Cues), Factor 4 (Romantic/Implicit Cues), and total scores of the CSDS. That is, women with higher sexual function scores had higher scores for Factors 1, 2, and 4 and total score of the CSDS (all  $t_s \geq 2.28$ , all  $P_s \leq 0.03$ ). Additionally, marital status significantly predicted Factor 1 and total scores of the CSDS. Specifically, unmarried women indicated higher scores for Emotional/Bonding Cues and total score values for the CSDS. For further details, see Table 7.

**Table 4** CSDS factor intercorrelations

	Emotional Bonding Cues	Erotic Explicit Cues	Visual/Proximity Cues	Romantic/Implicit Cues
Initial sample (N = 874)				
Emotional Bonding Cues	1.00	0.37	0.57	0.66
Erotic Explicit Cues	—	1.00	0.41	0.51
Visual/Proximity Cues	—	—	1.00	0.57
Romantic/Implicit Cues	—	—	—	1.00
Full community sample (N = 138)				
Emotional Bonding Cues	1.00	0.31**	0.44**	0.67**
Erotic Explicit Cues	—	1.00	0.37**	0.41**
Visual/Proximity Cues	—	—	1.00	0.44**
Romantic/Implicit Cues	—	—	—	1.00
Community sample, controls only (N = 63)				
Emotional Bonding Cues	1.00	0.17**	0.48**	0.64**
Erotic Explicit Cues	—	1.00	0.35**	0.28**
Visual/Proximity Cues	—	—	1.00	0.38**
Romantic/Implicit Cues	—	—	—	1.00
Community sample, all FSD women (N = 75)				
Emotional Bonding Cues	1.00	0.40**	0.39**	0.68**
Erotic Explicit Cues	—	1.00	0.38**	0.51**
Visual/Proximity Cues	—	—	1.00	0.48**
Romantic/Implicit Cues	—	—	—	1.00
Community sample, HSDD women only (N = 30)				
Emotional Bonding Cues	1.00	0.35**	0.16**	0.71**
Erotic Explicit Cues	—	1.00	0.13**	0.33**
Visual/Proximity Cues	—	—	1.00	0.27**
Romantic/Implicit Cues	—	—	—	1.00

\*\*Correlation is significant at the 0.01 level (two-tailed).

CSDS = Cues for Sexual Desire Scale; FSD = female sexual dysfunction; HSDD = hypoactive sexual desire disorder.

### Predictive Validity of CSDS

To begin examining the predictive validity of the CSDS, we conducted simple linear regression analyses using all four factor scores of the CSDS as predictor variables and FSFI desire and arousal domain scores as outcome variables. Additionally, separate univariate ANOVAs were conducted using each CSDS factor score as the dependent variable and frequency of sexual activity as the independent variable. In particular, we were interested in whether these cues for sexual desire predicted the frequency of sexual activity, frequency and degree of sexual interest or desire, and frequency and degree feelings of being sexually aroused.

Factor 2 (i.e., Erotic/Explicit Cues) and Factor 4 (i.e., Implicit/Romantic Cues) both significantly

predicted FSFI desire domain scores and FSFI arousal domain scores, whereas Factors 1 (i.e., Emotional Bonding Cues) and Factor 3 (i.e., Visual/Proximity Cues) did not significantly predict either FSFI desire or arousal domain scores (see Table 8). Univariate ANOVAs revealed that the four factors and total score of the CSDS also predicted frequency of sexual activity,  $F(4, 134) = 2.67, P = 0.04$ ,  $F(4, 134) = 3.28, P = 0.01$ ,  $F(4, 134) = 1.37, P = 0.07$ ,  $F(4, 134) = 3.18, P = 0.01$ ,  $F(1, 134) = 3.46, P = 0.01$ , respectively, for Factors 1, 2, 3, 4, and total score of the CSDS. Examination of the means showed that as cues for sexual desire increased, reported frequency of sexual activity generally increased as well.

**Table 5** CSDS factor reliability

Factor	Initial sample N = 874	Full community sample N = 139	Community sample, HSDD women only N = 30	Community sample, all FSD women N = 75	Community sample, control women only N = 63
Emotional Bonding Cues	0.91	0.92	0.92	0.93	0.90
Erotic Explicit Cues	0.90	0.87	0.78	0.86	0.87
Visual/Proximity Cues	0.87	0.87	0.87	0.88	0.87
Romantic/Implicit Cues	0.86	0.88	0.88	0.88	0.89

Cronbach's alpha (range = -1.00 to +1.00).  
CSDS = Cues for Sexual Desire Scale.



**Table 6** CSDS discriminant validity

Item	HSDD (N = 30) mean (±SD)	Controls (N = 62) mean (±SD)	FSD combined (N = 72) mean (±SD)
Emotional Bonding Cues	2.65 (0.88)*	3.10 (0.84) <sup>†</sup>	2.86 (0.95)
1. Feeling a sense of love with a partner	2.80 (1.22)	3.50 (1.18)	3.17 (1.26)
2. Feeling a sense of security in your relationship	2.40 (1.30)	3.05 (1.27)	2.67 (1.33)
3. Your partner is supportive of you	3.00 (1.19)	3.37 (1.32)	3.16 (1.25)
4. Your partner does "special" or "loving" things for you	2.73 (1.08)	3.27 (1.01)	2.99 (1.13)
5. Feeling a sense of commitment from a partner	2.46 (1.32)	2.89 (1.18)	2.67 (1.36)
6. Your partner expresses interest in hearing about you	2.30 (1.12)	2.94 (1.10)	2.63 (1.26)
7. Talking about the future with your partner	1.93 (0.86)	2.54 (1.20)	2.27 (1.11)
8. Feeling protected by a partner	2.63 (1.25)	2.81 (1.09)	2.65 (1.25)
9. Experiencing emotional closeness with a partner	3.60 (1.19)	4.27 (0.85)	3.92 (1.09)
10. Feeling protective of a partner	2.03 (1.10)	2.18 (1.27)	2.11 (1.21)
Explicit/Erotic Cues	3.31 (0.65)*	3.78 (0.80) <sup>†</sup>	3.63 (0.77)
1. Watching an erotic movie	3.20 (1.16)	3.32 (1.46)	3.35 (1.27)
2. Reading about sexual activity (e.g., pornographic magazine)	3.32 (1.06)	3.43 (1.42)	3.27 (1.26)
3. Watching or listening to other people engage in sexual behavior/activity	2.86 (1.30)	3.21 (1.39)	3.19 (1.35)
4. Talking about sexual activity or "talking dirty"	3.07 (1.14)	3.76 (1.14)	3.56 (1.18)
5. Watching a strip tease	2.79 (1.37)	2.67 (1.23)	3.04 (1.32)
6. Sensing your own or your partner's wetness, lubrication, or erection	3.48 (0.87)	4.41 (0.87)	3.97 (0.94)
7. Asking for or anticipating sexual activity	3.57 (0.94)	4.49 (0.78)	4.00 (0.97)
8. Hearing your partner tell you that he or she fantasized about you	3.11 (1.20)	4.06 (1.13)	3.53 (1.23)
9. Having a sexual fantasy (e.g., having a sexual dream, daydreaming)	3.57 (1.00)	3.87 (1.04)	3.78 (1.06)
10. You experience genital sensations (e.g., increased blood flow to genitals)	3.93 (1.02)	4.60 (0.75)	4.37 (0.84)
Visual/Proximity Cues	1.94 (0.75)*	2.27 (0.80) <sup>†</sup>	2.09 (0.79)
1. Seeing someone who is well-dressed or "has class"	1.67 (1.09)	1.94 (1.05)	1.80 (1.16)
2. Seeing/talking with someone powerful	1.60 (0.89)	2.02 (1.25)	1.85 (1.21)
3. Being in close proximity with attractive people	2.33 (1.32)	2.63 (1.30)	2.59 (1.29)
4. Seeing/talking with someone famous	1.50 (0.92)	1.65 (0.92)	1.58 (1.03)
5. Seeing a well-toned body	2.23 (1.22)	2.68 (1.06)	2.44 (1.14)
6. Seeing/talking with someone wealthy	1.21 (0.63)	1.44 (0.78)	1.30 (0.76)
7. Watching someone engage in physical activities (e.g., sports)	1.96 (1.23)	2.22 (1.30)	2.03 (1.17)
8. Seeing someone act confidently	1.77 (1.07)	2.50 (1.29)	2.12 (1.21)
9. Seeing/talking with someone intelligent	2.39 (1.47)	2.79 (1.49)	2.60 (1.42)
10. Flirting with someone or having someone flirt with you	3.00 (1.09)	2.78 (1.29)	2.95 (1.08)
Romantic/Implicit Cues	2.59 (0.78) <sup>**</sup>	3.11 (0.86) <sup>†</sup>	2.84 (0.80)
1. Whispering into your partner's ear or having your partner whisper into your ear	2.40 (1.16)	3.35 (1.25)	2.72 (1.23)
2. Dancing closely	3.20 (1.10)	3.59 (1.09)	3.33 (1.08)
3. Watching a sunset	1.93 (1.02)	2.17 (1.17)	2.00 (0.96)
4. Having a romantic dinner with a partner	2.67 (1.06)	3.41 (1.15)	3.03 (1.13)
5. Watching a romantic movie	2.40 (1.10)	3.03 (1.20)	2.83 (1.23)
6. Being in a hot tub	2.77 (1.22)	3.37 (1.32)	3.25 (1.22)
7. Touching your partner's hair or face	2.23 (1.28)	2.59 (1.20)	2.39 (1.16)
8. Giving or receiving a massage	3.21 (1.13)	3.67 (1.22)	3.40 (1.18)
9. Laughing with a romantic partner	2.30 (1.40)	2.56 (1.25)	2.40 (1.22)
10. Smelling pleasant scents (e.g., perfume, cologne, shampoo, aftershave)	2.67 (0.96)	3.37 (1.26)	3.00 (1.19)
CSDS total score	10.45 (2.16) <sup>**</sup>	12.31 (2.45) <sup>†</sup>	11.45 (2.58) <sup>*</sup>

\*Significant difference from controls.

<sup>†</sup>Significant difference from HSDD.<sup>‡</sup>Significant difference from FSD combined.

CSDS = Cues for Sexual Desire Scale; FSD = female sexual dysfunction; HSDD = hypoactive sexual desire disorder.

## Discussion

The purpose of the present study was to create a multidimensional assessment of cues associated with sexual desire in women. The resulting 40-item CSDS provided four distinct factors that highlight different clusters of cues associated with female sexual desire. These factors were labeled as: (i) Emotional Bonding Cues; (ii) Erotic/Explicit

Cues; (iii) Visual/Proximity Cues; and (iv) Implicit/Romantic Cues. The CSDS reflected validity by successfully demonstrating predictable differences between women with and without HSDD.

A secondary analysis was conducted to examine whether specific individual characteristics of the women in our sample predicted their CSDS total score and/or individual factor scores. Variables which were examined included: age, level of sexual

**Table 7** Simple linear regression for the prediction of the CSDS

CSDS	Statistical Test				
	R <sup>2</sup>	F	B	t	P
Factor 1	0.06	2.56			0.03*
Age			-0.02	-0.19	0.85
Children			-0.06	-0.55	0.58
Marital status			0.23	2.36	0.02*
BDI total			0.17	1.68	0.10
FSFI total			0.23	2.28	0.03*
Factor 2	0.17	5.63			<0.001*
Age			-0.18	-1.85	0.07
Children			0.07	0.79	0.43
Marital status			0.03	0.33	0.75
BDI total			0.12	1.29	0.20
FSFI total			0.40	4.22	<0.001*
Factor 3	0.03	1.07			0.38
Age			-0.08	-0.77	0.44
Children			0.03	0.29	0.77
Marital status			0.09	0.94	0.35
BDI total			0.16	1.54	0.13
FSFI total			0.12	1.14	0.26
Factor 4	0.07	2.84			0.01*
Age			0.03	0.32	0.75
Children			-0.01	-0.12	0.91
Marital status			0.15	1.60	0.11
BDI total			0.02	0.21	0.84
FSFI total			0.30	3.00	0.003*
Factor total	0.11	3.93			0.003*
Age			0.08	0.84	0.40
Children			0.01	0.06	0.95
Marital status			0.17	1.86	0.05*
BDI total			0.16	1.58	0.19
FSFI total			0.34	3.48	0.001*

\*Significant at the 0.05 level.

Factor 1 = Emotional Bonding Cues, Factor 2 = Erotic/Explicit Cues, Factor 3 = Visual/Proximity Cues, and Factor 4 = Romantic/Implicit Cues.  
FSD = female sexual dysfunction; BDI = Beck Depression Inventory; FSFI = Female Sexual Function Index.

dysfunction, marital status, having children, and depressive symptomology. When all variables were entered into one regression equation, a woman's age, having children, and depressive symptomology did not predict scores on the CSDS. This finding is particularly interesting given that past research has often indicated that age, having children, and depression are strongly linked to sexual desire. For example, in Laumann, Paik, and Rosen's report [1], the prevalence of sexual dysfunction decreased with increased age for women (with the exception of vaginal lubrication concerns) and Cyranowski, Frank, Cherry, Houck, and Kupfer [25] found a strong link between depressive symptoms and sexual desire. One possible explanation for these discrepant findings could be related to a restricted range in our sample. However, given that ages ranged from 18 to 53 years, BDI scores ranged from 0 to 30 and 23 of the 138 women in our sample had chil-

dren, it is unlikely that these differences could be solely accounted for by a restricted range in our data. It is possible, that although desire itself may "wax and wane" throughout life and across situations, that cues that result in sexual desire may reflect a more stable pattern.

Factors which did predict CSDS scores included marital status and level of sexual functioning. Specifically, women with higher levels of sexual dysfunction had lower scores on Factors 1, 2, and 4 and total score of the CSDS. The fact that a woman's level of sexual functioning was related to cues for sexual desire seems intuitive as the relative lack of cues for sexual desire could be partly responsible and/or related to present sexual concerns or problems. Additionally, married women had lower scores for Emotional/Bonding Cues and total score values for the CSDS as compared with women who were unmarried. The finding that married women endorsed fewer cues for sexual desire is inconsistent with Laumann, Paik, and Rosen's [1] findings that unmarried women had elevated rates of sexual problems as compared with married women. It is possible that as length of relationship increases, although sexual desire increases, habituation to specific sexual cues also occurs.

Also interesting to note, examination of domain intercorrelations indicated that correlations between Emotional Bonding Cues and Visual/Proximity Cues and correlations between Erotic/Explicit Cues and Visual/Proximity Cues were lower for women with HSDD as compared with all groups of women examined in this study. This finding is theoretically interesting, as it suggests that these constructs may be related to a lesser degree in women with sexual desire problems.

**Table 8** Linear regression results of predictive validity of CSDS

CSDS	Statistical Test				
	R <sup>2</sup>	F	B	t	P
FSFI desire domain	0.07	10.63			0.001*
CSDS Factor 1			0.05	0.49	0.624
CSDS Factor 2			0.31	3.42	0.001*
CSDS Factor 3			-0.04	-0.39	0.700
CSDS Factor 4			0.22	1.94	0.05*
FSFI arousal domain	0.04	6.80			0.01*
CSDS Factor 1			0.05	0.43	0.67
CSDS Factor 2			0.34	3.69	<0.001*
CSDS Factor 3			-0.16	-1.74	0.08
CSDS Factor 4			0.22	1.93	0.05*

\*Significant at the 0.05 level.

Factor 1 = Emotional Bonding Cues, Factor 2 = Erotic/Explicit Cues, Factor 3 = Visual/Proximity Cues, and Factor 4 = Romantic/Implicit Cues.  
CSDS = Cues for Sexual Desire Scale; FSFI = Female Sexual Function Index.

An investigation of the predictive validity of the CSDS indicated that although CSDS total scores did predict FSFI desire and domain scores, inspection of each factor showed that only Factors 2 (i.e., Erotic/Explicit Cues) and 4 (i.e., Romantic/Implicit Cues) significantly predicted FSFI desire and arousal domain scores. Additionally, CSDS total score and each factor score was related to reported frequency of sexual activity, such that women who indicated having more cues for sexual desire were more likely to engage in more frequent sexual activity.

In summary, findings from the present study provide valuable information regarding both internal and external triggers that can result in sexual desire for women. In 1998, the Sexual Function Health Council of the American Foundation of Urologic Disease invited experts in the field of sexual health to a consensus conference to consider and discuss the diagnostic criteria being used for FSDs [26]. Many researchers and clinicians felt that the DSM-IV [20] diagnostic categories being used for FSD were limited, and the publications that have resulted from this meeting and subsequent discussions (e.g., [26–29]) have been an attempt to review and update the classification of female sexual problems. One of the major modifications was in the conceptualization of female sexual desire and the diagnostic criteria for HSDD in women. The new conceptualization of sexual desire emphasizes the importance of considering a woman's receptivity to sexual stimuli, in addition to her intrinsic or innate feelings of sexual desire. This change was based on the observation that the majority of women report infrequent "spontaneous desire" [30–33] and because sexual desire is frequently experienced only after exposure to sexual stimuli [28]. Subsequently, sexual interest/desire disorder was redefined as: "Absent or diminished feelings of sexual interest or desire, absent sexual thoughts or fantasies and a lack of responsive desire," whereas the "additional lack of responsive desire is essential to the diagnosis of dysfunction" [28]. Thus, concerns with low sexual desire in women are currently being viewed more as an inability to "trigger" or access desire when sexual stimuli are present, as opposed to a lack of spontaneous feelings of sexual desire. The present article provides a comprehensive empiric categorization of such triggers for sexual desire in women.

The ongoing discussion regarding the conceptualization of female sexual desire dysfunction, as well as the findings from the present study, draws

attention to the limitations of using the DSM-IV-TR criteria for HSDD as entry criteria when recruiting for clinical trials evaluating treatments for low sexual desire in women. (For a review and recommendations regarding outcome measurements in clinical trials of FSD, see [34].)

Limitations of the present study worth noting include the young age of women in the community sample (mean age = 27.5 years, SD = 8.3 years) and the relatively small sample size of women with HSDD (N = 30). Given the prevalence of reported changes in sexual desire for women undergoing menopausal transition [35,36], we are currently investigating the reliability and validity of the CSDS in pre- and postmenopausal women with and without diagnosed HSDD. If the findings reported here are replicated, then we believe the CSDS can be used to inform both researchers and clinicians regarding how a particular woman is attending and responding to sexual cues. In particular, we believe that the CSDS could be beneficial in therapeutic settings to help identify cues that do and do not facilitate sexual desire in women with clinically diagnosed desire difficulties. This knowledge would inform both the patient and the clinician of specific areas to target in attempting to enhance sexual desire.

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#### References

- 1 Laumann EO, Paik A, Rosen RC. Sexual dysfunction in the United States: Prevalence and predictors. *J Am Med Assoc* 1999;10:537–45.
- 2 Chandraiah S, Levenson JL, Collins JB. Sexual dysfunction, social maladjustment, and psychiatric disorders in women seeking treatment in a premen-

- strual syndrome clinic. *Int J Psychiatry Med* 1991; 21:189–204.
- 3 Bhui K, Herriot P, Dein S, Watson JP. Asians presenting to a sex and marital therapy clinic. *Int J Soc Psychiatry* 1994;40:194–204.
  - 4 Fass R, Fullerton S, Naliboff B, Hirsh T, Mayer EA. Sexual dysfunction in patients with irritable bowel syndrome and non-ulcer dyspepsia. *Digestion* 1998; 59:78–85.
  - 5 Jamieson D, Steege J. The prevalence of dysmenorrhea, dyspareunia, pelvic pain, and irritable bowel syndrome in primary care practices. *Obstet Gynecol* 1996;1:55–8.
  - 6 Heiman JR, Meston CM. Empirically validated treatments for sexual dysfunction. In: Dobson KS, Craig KD, eds. *Empirically supported therapies: Best practice in professional psychology*. New York: Sage Publications; 1998:259–303.
  - 7 DeAmicis L, Goldberg DC, LoPiccolo J, Friedman J, Davies L. Clinical follow-up of couples treated for sexual dysfunction. *Arch Sex Behav* 1985;14:467–89.
  - 8 LoPiccolo J, Heiman JR, Hogan DR, Roberts CW. Effectiveness of single therapists versus cotherapy teams in sex therapy. *J Consult Clin Psychol* 1985; 53:287–94.
  - 9 Kilmann PR, Boland JP, Norton SP, Davidson E, Caid C. Perspectives of sex therapy outcome: A survey of AASECT providers. *J Sex Marital Ther* 1986;12:116–38.
  - 10 Levine SB. What patients mean by love, intimacy, and sexual desire. In: Levine SB, Risen CB, eds. *Handbook of clinical sexuality for mental health professionals*. New York: Brunner-Routledge; 2003: 21–36.
  - 11 Goldstein A, Brandon M. *Reclaiming desire: Four keys to finding your lost libido*. New York: St. Martin's Press; 2004.
  - 12 Leiblum S, Sachs J. *Getting the sex you want: A woman's guide to becoming proud, passionate, and pleased in bed*. New York: Crown Publishers; 2002.
  - 13 Pridal CG, LoPiccolo J. Multielement treatment of desire disorders: Integration of cognitive, behavioral, and systemic therapy. In: Leiblum SR, Rosen RC, eds. *Principles and practice of sex therapy*. New York: Guilford Press; 2000:57–81.
  - 14 Abbey A, Zawacki T, Buck PO. The effects of past sexual assault perpetration and alcohol consumption on men's reactions to women's mixed signals. *J Soc Clin Psychol* 2005;24:129–55.
  - 15 McDonel EC, McFall RM. Construct validity of two heterosocial perception skill measures for assessing rape proclivity. *Violence Vict* 1991;6:17–30.
  - 16 Kenyon-Jump R. Detection of sexual cues: An assessment of nonaggressive and sexually coercive college males. *Dissert Abstr Int* 1993;53B:6557.
  - 17 Regan PC, Berscheid E. Gender differences in beliefs about the causes of male and female sexual desire. *Pers Relat* 1995;2:345–58.
  - 18 Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R. The female sexual function index (FSFI): A multi-dimensional self-report instrument for the assessment of female sexual function. *J Sex Marital Ther* 2000;26:191–208.
  - 19 Sills T, Wunderlich G, Pyke R, Segraves RT. The sexual interest and desire inventory—Female (SIDIF): Item response analyses of data from women diagnosed with hypoactive sexual desire disorder. *J Sex Med* 2005;2:801–18.
  - 20 American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*, 4th edn. Washington, DC: Author; 2000:493–522.
  - 21 Beck AT, Steer RA, Garbin MG. Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clin Psychol Rev* 1988;8:77–100.
  - 22 Meston CM. Validation of the Female Sexual Function Index (FSFI) in women with Female Orgasmic Disorder and in women with Hypoactive Sexual Desire Disorder. *J Sex Marital Ther* 2003;29: 39–46.
  - 23 Wiegel M, Meston C, Rosen RC. The female sexual function index (FSFI): Cross-validation and development of clinical cutoff scores. *J Sex Marital Ther* 2005;31:1–20.
  - 24 Canals J, Blade J, Carbajo G, Domenech-Llaberia E. The beck depression inventory: Psychometric characteristics and usefulness in nonclinical adolescents. *Eur J Psychol Assess* 2001;17:63–8.
  - 25 Cyranowski JM, Frank E, Cherry C, Houck P, Kupfer DJ. Prospective assessment of sexual function in women treated for recurrent major depression. *J Psychiatr Res* 2004;38:267–73.
  - 26 Leiblum S. Critical overview of the new consensus-based definitions and classification of female sexual dysfunction. *J Sex Marital Ther* 2001;27:159–68.
  - 27 Basson R, Berman J, Burnett A, Derogatis L. Report of the international consensus development conference on female sexual dysfunction: Definitions and classifications. *J Sex Marital Ther* 2001;27:83–94.
  - 28 Basson R, Leiblum S, Brotto L, Derogatis L. Definitions of women's sexual dysfunction reconsidered: Advocating expansion and revision. *J Psychosom Obstet Gynaecol* 2003;24:221–9.
  - 29 Basson R, Leiblum S, Brotto L, Derogatis L. Revised definitions of women's sexual dysfunction. *J Sex Med* 2004;1:40–8.
  - 30 Lunde L, Larson GK, Fog E, Gardé K. Sexual desire, orgasm, and sexual fantasies: A study of 625 Danish women born in 1910, 1936 and 1958. *J Sex Educ Ther* 1991;17:111–5.
  - 31 Hill CA, Preston LK. Individual differences in the experience of sexual motivation: Theory and measurement of dispositional sexual motives. *J Sex Res* 1996;33:27–45.
  - 32 Galyer KT, Conaglen HM, Hare A, Conaglen JV. The effect of gynecological surgery on sexual desire. *J Sex Marital Ther* 1999;25:81–8.



- 33 Regan P, Berscheid E. Belief about the states, goals and objects of sexual desire. *J Sex Marital Ther* 1996;22:110–20.
- 34 Althof SE, Rosen RC, Derogatis L, Cory E. Outcome measurement in female sexual dysfunction clinical trials: Review and recommendations. *J Sex Marital Ther* 2005;31:153–66.
- 35 Dennerstein L, Goldstein I. Postmenopausal female sexual dysfunction: At a crossroads. *J Sex Med* 2005;2:116–7.
- 36 Dennerstein L, Hayes RD. Confronting the challenges: Epidemiological study of female sexual dysfunction and the menopause. *J Sex Med* 2005;2:118–32.

## Appendix 1

### Instructions:

Different factors cause different people to desire sexual activity (e.g., intercourse, kissing, oral sex, petting, masturbation). Use the scale below to indicate what the likelihood is that each of the following factors or cues would lead you to *desire* sexual activity.

	1 Not at all likely	2 Somewhat likely	3 Moderately likely	4 Very likely	5 Extremely likely
1 Touching your partner's hair	1	2	3	4	5
2 Laughing with a romantic partner	1	2	3	4	5
3 Dancing closely	1	2	3	4	5
4 Whispering into your partner's ear	1	2	3	4	5
5 Nibbling on your partner's neck	1	2	3	4	5
6 Seeing/talking with someone powerful	1	2	3	4	5
7 Engaging in competitive physical activity with a partner (i.e., tennis)	1	2	3	4	5
8 Engaging in competitive nonphysical activity with a partner (i.e., Scrabble)	1	2	3	4	5
9 Feeling protected by a partner	1	2	3	4	5
10 Achieving a success (e.g., promotion, good grade)	1	2	3	4	5
11 Experiencing emotional closeness with a partner	1	2	3	4	5
12 You experience genital sensations	1	2	3	4	5
13 Being in close proximity with attractive people	1	2	3	4	5
14 Talking about sexual activity	1	2	3	4	5
15 Having a romantic dinner with a partner	1	2	3	4	5
16 Being in a hot tub	1	2	3	4	5
17 Watching movies	1	2	3	4	5
18 Engaging in intercourse	1	2	3	4	5
19 Giving a massage	1	2	3	4	5
20 Being naked with someone of the opposite sex	1	2	3	4	5
21 Smelling pleasant scents (e.g., perfume/cologne, shampoo, aftershave)	1	2	3	4	5
22 Receiving direct physical genital stimulation	1	2	3	4	5
23 Having a sexual dream	1	2	3	4	5
24 Seeing someone dressed provocatively	1	2	3	4	5
25 Touching your partner's hair	1	2	3	4	5
26 Watching a sunset	1	2	3	4	5
27 Sharing a private smirk/grin	1	2	3	4	5
28 Seeing someone who is well-dressed or "has class"	1	2	3	4	5
29 Seeing a well-toned body	1	2	3	4	5
30 Talking about past shared experiences with a partner	1	2	3	4	5
31 Feeling like you look good	1	2	3	4	5
32 Anticipating sexual activity	1	2	3	4	5
33 Wearing sexy underwear	1	2	3	4	5
34 Holding hands	1	2	3	4	5
35 Reading a pornographic magazine	1	2	3	4	5
36 "Talking dirty"	1	2	3	4	5
37 Sensing your own/your partner's erection	1	2	3	4	5
38 Seeing your partner dressed up	1	2	3	4	5
39 Resolving a "heated" fight	1	2	3	4	5
40 Flirting with someone	1	2	3	4	5
41 Having someone flirt with you	1	2	3	4	5
42 Talking about the future with your partner	1	2	3	4	5
43 Watching a strip tease	1	2	3	4	5
44 Seeing/talking with someone famous	1	2	3	4	5
45 Soft kissing	1	2	3	4	5
46 Seeing/talking with someone wealthy	1	2	3	4	5
47 You experience increased blood flow to the genitals	1	2	3	4	5
48 Feeling a sense of connectedness	1	2	3	4	5
49 Being dressed up	1	2	3	4	5



## Appendix 1 Continued

	1 Not at all likely	2 Somewhat likely	3 Moderately likely	4 Very likely	5 Extremely likely	
50	Alcohol consumption	1	2	3	4	5
51	Having a sexual fantasy (daydreaming)	1	2	3	4	5
52	Feeling lonely	1	2	3	4	5
53	Reading about sexual activity	1	2	3	4	5
54	Engaging in eye contact	1	2	3	4	5
55	Asking for sex or sexual activity	1	2	3	4	5
56	Listening to other people engage in sexual behavior/activity	1	2	3	4	5
57	Feeling a desire to have children	1	2	3	4	5
58	Getting high on drugs	1	2	3	4	5
59	Having your partner whisper into your ear	1	2	3	4	5
60	Dressing provocatively (you)	1	2	3	4	5
61	Feeling a sense of commitment from a partner	1	2	3	4	5
62	Talking "baby talk"	1	2	3	4	5
63	Hearing your partner talking "baby talk"	1	2	3	4	5
64	Receiving gifts from your partner	1	2	3	4	5
65	Hearing a sexy voice	1	2	3	4	5
66	Engaging in oral sex	1	2	3	4	5
67	Engaging in risky sexual behavior (i.e., having sex in public)	1	2	3	4	5
68	Engaging in intimate conversation	1	2	3	4	5
69	Watching a romantic movie	1	2	3	4	5
70	Tickling each other	1	2	3	4	5
71	Play wrestling with your partner	1	2	3	4	5
72	Taking a walk with your partner	1	2	3	4	5
73	Having a picnic in the park with your partner	1	2	3	4	5
74	You experience an increased heart rate	1	2	3	4	5
75	Watching someone engage in physical activities (e.g., sports)	1	2	3	4	5
76	Watching your partner or helping your partner get dressed for a "formal"	1	2	3	4	5
77	Watching other people engage in sexual behavior/activity	1	2	3	4	5
78	Hearing your partner tell you that he or she fantasized about you	1	2	3	4	5
79	Your partner does "special" things for you	1	2	3	4	5
80	Your partner is supportive of you	1	2	3	4	5
81	Reading a romance novel	1	2	3	4	5
82	Feeling strong emotions for your partner	1	2	3	4	5
83	Feeling anger	1	2	3	4	5
84	Receiving a massage	1	2	3	4	5
85	Engaging in masturbation	1	2	3	4	5
86	Lying against someone's body	1	2	3	4	5
87	Being told you are loved	1	2	3	4	5
88	Engaging in playful behavior	1	2	3	4	5
89	Seeing/talking with someone intelligent	1	2	3	4	5
90	You have the "itch"	1	2	3	4	5
91	Saying "I love you"	1	2	3	4	5
92	Engaging in physical activity with your partner (i.e., running)	1	2	3	4	5
93	Having someone flatter you	1	2	3	4	5
94	You experience heavy breathing	1	2	3	4	5
95	When your partner does "loving" things for you	1	2	3	4	5
96	Engaging in more "kinky" or creative sexual behavior than usual	1	2	3	4	5
97	Wearing no underwear (you)	1	2	3	4	5
98	Listening to poetry	1	2	3	4	5
99	Watching an erotic movie	1	2	3	4	5
100	Being in a fearful situation	1	2	3	4	5
101	Seeing your partner after absence	1	2	3	4	5
102	Feeling calm and relaxed	1	2	3	4	5
103	Touching your partner's genitals	1	2	3	4	5
104	Acting out fantasies	1	2	3	4	5
105	Feeling a sense of security in your relationship	1	2	3	4	5
106	Trying new sexual positions	1	2	3	4	5
107	Snuggling with your partner	1	2	3	4	5
108	Engaging in petting	1	2	3	4	5
109	Experiencing grief/trauma together	1	2	3	4	5
110	Deep kissing	1	2	3	4	5
111	Laying together	1	2	3	4	5
112	Seeing/talking with someone successful	1	2	3	4	5
113	Sharing a sense of humor	1	2	3	4	5
114	Engaging in heavy petting	1	2	3	4	5
115	Listening to someone talk intelligently	1	2	3	4	5
116	Feeling a sense of love with a partner	1	2	3	4	5
117	Receiving a love letter/card	1	2	3	4	5
118	Sending a love letter/card	1	2	3	4	5

## Appendix 1 Continued

		1 Not at all likely	2 Somewhat likely	3 Moderately likely	4 Very likely	5 Extremely likely
119	Seeing someone act confidently	1	2	3	4	5
120	Feeling jealous	1	2	3	4	5
121	Your partner expresses interest in hearing about you	1	2	3	4	5
122	Your partner takes charge of a problem situation	1	2	3	4	5
123	Winning a sports game	1	2	3	4	5
124	Feeling protective of a partner	1	2	3	4	5
125	Sensing your own/your partner's wetness or lubrication	1	2	3	4	5

## Appendix 2

## Final Version of the Cues for Sexual Desire Scale (CSDS)

## Instructions:

Different factors cause different people to desire sexual activity (e.g., intercourse, kissing, oral sex, petting, masturbation). Use the scale below to indicate what the likelihood is that each of the following factors or cues would lead you to *desire* sexual activity.

		1 Not at all likely	2 Somewhat likely	3 Moderately likely	4 Very likely	5 Extremely likely
1	Feeling a sense of love with a partner	1	2	3	4	5
2	Seeing/talking with someone intelligent	1	2	3	4	5
3	Watching an erotic movie	1	2	3	4	5
4	Smelling pleasant scents (e.g., perfume, cologne, shampoo, aftershave)	1	2	3	4	5
5	Watching or listening to other people engage in sexual behavior/activity	1	2	3	4	5
6	Your partner expresses interest in hearing about you	1	2	3	4	5
7	Seeing/talking with someone famous	1	2	3	4	5
8	Being in a hot tub	1	2	3	4	5
9	Experiencing emotional closeness with a partner	1	2	3	4	5
10	Asking for or anticipating sexual activity	1	2	3	4	5
11	Talking about the future with your partner	1	2	3	4	5
12	Seeing/talking with someone powerful	1	2	3	4	5
13	Having a romantic dinner with a partner	1	2	3	4	5
14	Watching someone engage in physical activities (e.g., sports)	1	2	3	4	5
15	Talking about sexual activity or "talking dirty"	1	2	3	4	5
16	Laughing with a romantic partner	1	2	3	4	5
17	Sensing your own or your partner's wetness, lubrication, or erection	1	2	3	4	5
18	Feeling protective of a partner	1	2	3	4	5
19	Hearing your partner tell you that he or she fantasized about you	1	2	3	4	5
20	Giving or receiving a massage	1	2	3	4	5
21	Your partner is supportive of you	1	2	3	4	5
22	Dancing closely	1	2	3	4	5
23	Seeing someone who is well-dressed or "has class"	1	2	3	4	5
24	Feeling a sense of commitment from a partner	1	2	3	4	5
25	Being in close proximity with attractive people	1	2	3	4	5
26	Touching your partner's hair or face	1	2	3	4	5
27	You experience genital sensations (e.g., increased blood flow to genitals)	1	2	3	4	5
28	Seeing/talking with someone wealthy	1	2	3	4	5
29	Your partner does "special" or "loving" things for you	1	2	3	4	5
30	Seeing someone act confidently	1	2	3	4	5
31	Having a sexual fantasy (e.g., having a sexual dream, daydreaming)	1	2	3	4	5
32	Flirting with someone or having someone flirt with you	1	2	3	4	5
33	Watching a romantic movie	1	2	3	4	5
34	Seeing a well-toned body	1	2	3	4	5
35	Feeling a sense of security in your relationship	1	2	3	4	5
36	Watching a sunset	1	2	3	4	5
37	Reading about sexual activity (e.g., pornographic magazine)	1	2	3	4	5
38	Whispering into your partner's ear/having your partner whisper into your ear	1	2	3	4	5
39	Watching a strip tease	1	2	3	4	5
40	Feeling protected by a partner	1	2	3	4	5