The Journal of Sex Research

ISSN: 0022-4499 (Print) 1559-8519 (Online) Journal homepage: http://www.tandfonline.com/loi/hjsr20

What Does Sexual Arousal Mean to You? Women With and Without Sexual Arousal Concerns Describe Their Experiences

Ariel B. Handy, Amelia M. Stanton & Cindy M. Meston

To cite this article: Ariel B. Handy, Amelia M. Stanton & Cindy M. Meston (2018): What Does Sexual Arousal Mean to You? Women With and Without Sexual Arousal Concerns Describe Their Experiences, The Journal of Sex Research, DOI: 10.1080/00224499.2018.1468867

To link to this article: https://doi.org/10.1080/00224499.2018.1468867

Published online: 10 May 2018.

Submit your article to this journal

Article views: 25

View related articles

View Crossmark data

Full Terms & Conditions of access and use can be found at
http://www.tandfonline.com/action/journalInformation?journalCode=hjsr20

THE JOURNAL OF SEX RESEARCH, *00*(00), 1–11, 2018
Copyright © The Society for the Scientific Study of Sexuality
ISSN: 0022-4499 print/1559-8519 online
DOI: https://doi.org/10.1080/00224499.2018.1468867

Taylor & Francis
Taylor & Francis Group

Check for updates

What Does Sexual Arousal Mean to You? Women With and Without Sexual Arousal Concerns Describe Their Experiences

Ariel B. Handy, Amelia M. Stanton, and Cindy M. Meston
Department of Psychology, University of Texas at Austin

Sexual arousal is frequently characterized by both subjective (i.e., mental) and physiological (e.g., genital) components. The nuances of these components, however, are difficult to capture via self-report instruments. Asking women to describe sexual arousal in their own words may therefore enhance our understanding of this construct. In the present study, women with (n = 190) and without (n = 610) arousal concerns were recruited online and wrote about their experience of sexual arousal. Seven clusters of words were extracted using automated text analysis, and the prominence of these clusters was compared between groups of women. The autonomic arousal cluster differed between groups such that women with arousal concerns invoked this cluster significantly less than did women with no such concerns. Furthermore, the context cluster significantly predicted group membership (odds ratio [OR] = 1.063); greater scores on this cluster were associated with arousal concerns. Results suggest that autonomic arousal and relationship factors may play important roles in arousal concerns. It is suggested that clinicians assess for aspects of the sexual relationship that may facilitate or hinder sexual arousal. Clinicians may also consider inquiring about the presence or appraisal of autonomic arousal (e.g., one's interpretation of an increase in heart rate or respiration) during sexual activity.

Sexual arousal is frequently characterized as having both subjective (i.e., mental) and physiological components (Basson, 2015). Subjective arousal is commonly conceptualized as being mentally "turned on" or positively engaged in one's mind (Althof et al., 2017), whereas physiological arousal typically incorporates both genital (e.g., lubrication) and extragenital (e.g., breast sensitivity, increased heart rate) experiences. Though researchers use the terms *subjective* and *physiological* to refer to these two components of arousal, a paucity of research has explored women's own conceptualizations of this topic. To address this, the present study examined written descriptions of sexual arousal in a sample of women with and without sexual arousal concerns.

Prior research has examined the factors that influence sexual arousal (Graham, Sanders, Milhausen, & McBride, 2004) and the overlap between sexual desire and arousal (Brotto, Heiman, & Tolman, 2009; Mitchell, Wellings, & Graham, 2014). In one such study, women in a series of focus groups were asked to discuss various cues for sexual arousal, highlight factors that excite or inhibit sexual arousal, and describe the relationship between sexual arousal and sexual desire (Graham et al., 2004). The focus group moderators utilized a discussion guide that included specific questions and a list of possible situations that could be used as prompts. When prompted, women commonly described sexual arousal as being either physical (e.g., tingling), cognitive (e.g., nervousness), or behavioral (e.g., sighing) in nature. Though the moderated focus group design undoubtedly helped participants formulate their conceptualizations of arousal, a potential limitation to this design is the degree to which the format and the exposure to other group members' opinions may have influenced women's responses. In the present study, we aimed to build on our existing knowledge of the ways in which women conceptualize sexual arousal by asking participants to write about arousal and then using this participant-driven data to extract clusters of words that appeared in the essays.

Understanding women's perceptions of sexual arousal is important for several reasons. First, if researchers are aware of the complexities of women's perceptions and experiences of sexual arousal, then they will be able to improve existing psychometric tools that measure sexual arousal. In a laboratory setting, the subjective experience of sexual arousal is frequently assessed with a questionnaire administered to participants before and after an erotic film. To reduce participant burden, these questionnaires are often short, with subscales comprising three to five items. The most commonly used questionnaire (known as the Film Scale; Heiman & Rowland, 1983) includes three subscales: autonomic arousal, genital arousal, and subjective arousal. The

Correspondence should be addressed to Cindy M. Meston, University of Texas at Austin, Department of Psychology, 108 East Dean Keeton Street, Stop A8000, Austin, TX 78712. E-mail: meston@psy.utexas.edu

autonomic and genital arousal subscales have five items each, and the subjective arousal subscale has three. Though the brevity of this scale facilitates the measure's utility, it likely takes away from the scale's ability to capture the more subtle nuances of sexual arousal.

There is also a clinical need to explore women's experiences of sexual arousal, as it is important for clinicians to know how to describe the various components of arousal in ways that will resonate with their clients. This is particularly relevant given the recent elimination of hypoactive sexual desire disorder and female sexual arousal disorder (FSAD) and creation of a single diagnosis (female sexual interest/arousal disorder [FSIAD]) in the newest edition of the *Diagnostic and Statistical Manual of Mental Disorders* (American Psychiatric Association, 2013). While there were many reasons for this diagnostic change, one is that researchers, clinicians, and clients may define sexual desire differently (e.g., Brotto, 2010). Language selection clearly has real-world implications, and it is critical that clinicians know when it is appropriate to diagnose a sexual disorder based on their clients' self-reported concerns.

Women's experiences of sexual arousal vary, and these differences may be most apparent among women with different levels of sexual function. Indeed, Sand and Fisher (2007) found that sexual function played a role in women's conceptualizations of the sexual response cycle. In this study, a random sample of 580 registered nurses completed the Female Sexual Function Index (FSFI; Rosen et al., 2000). They were then provided with descriptions of three models of sexual response: those of Masters and Johnson (1966), Kaplan (1977), and Basson (2002). Participants were instructed to select the model that they felt best described their own sexual experiences. Though all three models were chosen with equal frequency, women endorsing the Basson model had significantly lower FSFI domain scores than the women who endorsed either the Masters and Johnson (1966) model or the Kaplan (1977) model. A later study implemented qualitative methods to demonstrate the impact of sexual function on women's perceptions of their sexual experiences (Brotto et al., 2009). Researchers conducted in-depth interviews exploring the nature of sexual desire in a sample of middle-aged women with and without FSAD. Though many women conflated sexual arousal and sexual desire, women without FSAD were more likely to do so than were women with FSAD. It therefore appears as though sexual function influences women's conceptualizations of sexual arousal, though it is unclear what aspects of the sexual experience vary by sexual function. This study aimed to expand this line of research by applying a novel form of text analysis to women's written descriptions of sexual arousal.

Over the past 10 years, there has been a marked increase in the use of natural language data to examine a range of psychological constructs and processes. Natural language data can include posts on social media platforms (e.g., Facebook, Reddit, Twitter), journal entries, and open-ended responses to prompts in a laboratory setting. Collecting and analyzing this type of data differs from traditional analyses of self-report measures in that natural language is purely inductive. Participants write down only what is personally meaningful, then computerized language-processing techniques, such as the meaning extraction method (MEM), calculate the degree to which words cluster together (Chung & Pennebaker, 2008). These semantic clusters represent collections of words that commonly co-occur across a large corpus (e.g., across many natural language samples that pertain to a specific topic or construct). Differences in invocation of these clusters can be observed across groups and over time, offering insights on domains such as personality (Yarkoni, 2010), core values (Boyd et al., 2015), and sexual self-schemas (Stanton, Boyd, Pulverman, & Meston, 2015).

The analysis of written language data may be particularly suitable for research on sex and sexuality. Tourangeau and Yan (2007) suggested that self-administered (e.g., questionnaire) methods of data collection, as opposed to interviewer-administered methods, may be particularly beneficial when inquiring about sensitive topics, such as sexual behaviors or illicit drug use. Specifically, they found that studies implementing both methods of data collection consistently found greater endorsement of sensitive topics in self-administered questionnaires. Based on the findings from Tourangeau and Yan (2007), if women are asked to write freely about their sexuality in a private setting, they may reveal information that they would otherwise have concealed in an interview.

We believe that applying the MEM to paragraphs written by women detailing their unique experiences of sexual arousal could provide meaningful and ecologically valid information about women's sexual arousal. From these writing samples, we sought to extract semantic clusters that will help build a comprehensive taxonomy of sexual arousal in women, as well as identify differences in arousal experiences based on sexual function. The purpose of the present study was twofold: (1) to explore how women construe their sexual arousal in their own words and (2) to examine whether these construals are different based on the presence/absence of sexual arousal concerns.

Method

Participants

Women were recruited through Amazon's Mechanical Turk (MTurk; http://www.mturk.com) from January to June 2017. Previous research evaluating the quality of data collected on MTurk has found the data to be as reliable and high in quality as responses gained through traditional recruitment methods (Buhrmester, Kwang, & Gosling, 2011). Women were told that the purpose of the study was "to examine how women experience sexual arousal." Cisgender females were eligible to participate if they were (1) least 18 years of age, (2) able to read and write in English, and (3) sexually active in the past four weeks. The advertisement was available only to individuals located

within the United States. Participants were compensated with $0.75 for taking parting in this study. See Table 1for participant characteristics.

Measures

Sexual function. To assess participants' level of sexual functioning, women completed the FSFI (Rosen et al., 2000), a 19-item self-report questionnaire that assesses desire, arousal, lubrication, orgasm, satisfaction, pain, and overall sexual functioning. Total scores range from 2 to 36, where poorer sexual function is represented by lower scores. The FSFI has been found to have good internal reliability (r = 0.89 to 0.97) and test-retest reliabilities (α = 0.79 to 0.88), and has confirmed discriminant validity in distinguishing women with sexual complaints from women without those complaints (Rosen et al., 2000; Ryding & Blom, 2015; Wiegel, Meston, & Rosen, 2005). In addition to completing the FSFI, women completed a brief sexual arousal assessment, which comprised asking about their current ability to become sexually aroused. Following this assessment, participants were prompted with the question "Do you think you currently have an arousal problem, whether that is difficulty becoming or staying aroused?" See Table 2 for results of the FSFI and Table 3 for results of the sexual arousal assessment.

Procedure

Participants reviewed and digitally signed the informed consent form, which was included at the start of the online questionnaire package. Participants were then provided with the following timed writing prompt:

> For the next 10 minutes, I would like you to write about your experience of sexual arousal. In your writing, I'd like you to describe what sexual arousal feels like for you. Please try to be as detailed as possible in your description of your sexual arousal. Describe the thoughts, sensations, and emotions that you experience when you are sexually aroused. I'd like you to really let go and explore what sexual arousal feels like for you.

The prompt was modeled after a prompt that was used in a previous sexuality study (Meston, Lorenz & Stephenson, 2013). A timer was set for 10 minutes to ensure that each participant remained on the page for the same minimum amount of time (i.e., women could write for longer than 10 minutes if desired, but the survey would not advance until 10 minutes had passed). After the written task, participants completed a series of questionnaires, including a demographic questionnaire, the FSFI, and the sexual arousal assessment. This study was approved by the Institutional Review Board (IRB) at the University of Texas at Austin.

Statistical Analyses

Linguistic analysis. Text data were analyzed using the MEM (Chung & Pennebaker, 2008). The MEM operates by reducing words to their present tense root, a process called lemmatization (e.g., all three words *seeing, saw*, and *sees* are reduced to *see*). In addition, closed-class and function words (e.g., articles and prepositions) are removed. The remaining words are then assessed for use by assigning each word a binary score (1 = present, 0 = absent) across the texts. The Meaning Extraction Helper (MEH; Boyd, 2014), a software developed to assist with topic modeling procedures, was used to automate these initial steps. This modeling procedure was implemented on the entire sample of essays; essays were not examined separately for women with and without arousal concerns.

Using IBM SPSS Statistical Version 23, principal components analyses (PCAs) with varimax rotation were performed using the binary scores matrices provided by the MEH software to identify clusters of commonly co-occurring words. Results from Bartlett's sphericity test (χ^2 = 48788.29) and the Kaiser–Meyer–Olkin metric (KMO = 0.56) indicated that factor-type modeling was appropriate. Based on the scree plots and eigenvalues presented in the PCAs, seven components were selected for inclusion. Components had eigenvalues above 2.83 and provided a significant increase to the cumulative percent variance accounted for by the model (12.49%). Within each component, words with loadings of 0.25 or higher were retained. The first two authors independently reviewed the words loading on to each component and developed cluster labels. These labels were compared and agreements on discrepancies were made.

Cluster scores were calculated to determine the prominence of each component (semantic cluster) in each participant's writing. This process consisted of summing the frequencies of each word within a given cluster.

Main outcome measure. The following analyses were conducted within the R (Team, 2016) environment using the bestglm (McLeod & Xu, 2017) package. The main outcome variable of the present study was self-identified arousal concern (0 = no concern, 1 = concern). The primary predictor variables were the seven semantic clusters derived from the writing prompt. First, we conducted a manipulation check to ensure that FSFI total scores predicted self-reported arousal concerns via a binary logistic regression. Then, to understand the relationships among the extracted clusters and FSFI total scores, zero-order correlations were calculated for the entire sample, as well as for each group individually (Table 4). To determine potential differences in FSFI total scores and the extracted clusters between women with and without arousal concerns, a series of analyses of variances (ANOVAs) was conducted.

Finally, binary logistic regressions were conducted to determine the predictive ability of the clusters on the endorsement of arousal concerns. As the FSFI score is a known predictor of sexual function and dysfunction (Rosen et al., 2000; Ryding & Blom, 2015; Wiegel et al., 2005), and is therefore not independent of the outcome variable (i.e., having an arousal concern), FSFI total score was controlled

for in separate binary logistic regressions examining the relationship between cluster scores and arousal concerns. This allowed us to assess the relationship between cluster score and arousal concerns while holding the level of sexual function constant. As sexual function has been found to decline with age (Hayes & Dennerstein, 2005), the aforementioned models were also run after controlling for age. No notable differences emerged; therefore, the results of this article are based on the models without age.

Results

Participant Characteristics

Eight hundred women (M_{age} = 36.18, *SD* = 12.01) participated in this study. Of these women, 190 self-identified as having an arousal concern. The majority of women identified as White (73%), a plurality identified as Christian (41%), and 47% reported holding a college degree. Most women (83%) identified as heterosexual, and 42% reported being in a committed relationship. Prior to examining between-group differences based on arousal concerns, analyses of independence, residual normality, and homoscedasticity were performed on each variable. After ensuring all parametric assumptions had been met, a series of multivariate analyses of variances with a Bonferroni adjustment for number of comparisons (k = 3; $\alpha/3 = 0.015$) and chi-square tests with a Bonferroni adjustment for number of comparisons (k = 8; $\alpha/8 = 0.006$) were computed. No significant differences were found on any variable.

Significant between-group differences emerged on all domains of the FSFI; these differences were maintained after applying a Bonferroni correction. Women with and without arousal concerns differed in their responses to the question "What level of intensity do you experience this [specific genital sensation] during sexual activity?" Possible responses to this question were *Lower intensity than in the past, No longer experiencing this*, and *Same as in the past*. Post hoc analyses revealed that women with arousal concerns endorsed experiencing sensations associated with sexual arousal (e.g., genital warmth, wetness) at a lower intensity or not at all with significantly greater frequency, whereas women without arousal concerns were significantly more likely to report no changes in sensations (see Tables 2 and 3 for descriptive statistics of the FSFI and the sexual arousal assessment).

Overall Semantic Clusters

The MEM identified seven core semantic clusters of women's sexual arousal experiences, which we labeled as foreplay, autonomic arousal, physical/mental arousal, context, fantasy, orgasm, and whole body. (See Table 4 for the 10 highest-loading words within each cluster.)

Here is an excerpt from the response that scored highest on the context cluster (12.50): "In order for me to be sexually aroused, a lot of factors need to come into play. I need to feel loved and attractive to my husband before I can even think about having sex. I need to feel my husband wants me and only me."

Following is an excerpt from another woman's response, which had a high score on the whole body cluster (9.76): "There is an excitement that surges through my body and weakness from my limbs as my body feels it more and more. My legs, lips, and fingertips quiver and I feel like my brain focuses completely on the goal of trying to make this feeling go on for as long as possible."

Sample responses for the remaining clusters can be found in the Appendix. When women with and without arousal concerns were analyzed together, FSFI total scores were significantly correlated with most of the clusters (but not the fantasy and whole body clusters, ps > .05). When the two groups of women were analyzed separately, FSFI total scores were correlated with the foreplay cluster for women without arousal concerns ($p < .01$) and with the autonomic arousal cluster for women with arousal concerns ($p < .05$). Zero-order correlations among the clusters and the FSFI total score are presented in Table 5.

Variability of Semantic Clusters by Arousal Concern Status

To assess for differences in cluster invocation between the two groups of women, a series of ANOVAs with Bonferroni adjustments for number of comparisons (k = 7; $\alpha/7 = 0.007$) was run. With all parametric assumptions met, a significant effect of group (i.e., arousal concern status) on the autonomic arousal cluster emerged, F (1, 783) = 13.64, $p < .001$, such that women without arousal concerns scored significantly higher on the autonomic arousal cluster (M = 2.55) than did women with arousal concerns (M = 1.75). This result indicates that women with arousal concerns compared to women without arousal concerns wrote less about physiological arousal (e.g., heart rate).

Predictive Ability of Semantic Clusters on Arousal Concern Status

To assess the predictive ability of cluster score on arousal concern status, we first conducted a series of binary logistic regressions with cluster score and FSFI total score predicting arousal concern status. After applying a Bonferroni adjustment for number of predictors (k = 8; $\alpha/8 = 0.006$), it was found that only the autonomic arousal cluster, $\beta = -0.154$, $p = 0.0002$, and the FSFI total score, $\beta = -0.308$, $p < 0.001$, significantly predicted having an arousal concern. That the FSFI total score significantly predicted having an arousal concern was a successful manipulation check; women with self-reported arousal concerns were identifiable via a reliable index of sexual function.

To account for the relationship between sexual function and arousal concerns, we ran a second series of binary

Table 1. *Participant Characteristics*

	No Arousal Concerns (N = 610)		Arousal Concerns (N = 190)				Entire Sample (N = 800)	
	M (SD)	n (%)	M (SD)	n (%)	F	χ^2	M (SD)	n (%)
Age	35.81 (12.07)		37.36 (11.75)		2.43		36.18 (12.01)	
Age of sexual debut	17.63 (3.67)		17.65 (3.29)		0.01		17.64 (3.58)	
Relationship length (months)	109.20 (111.13)		139.18 (126.32)		4.24		116.82 (115.82)	
Menopausal status[a]						4.03		
Premenopausal		475 (78)		137 (72)				612 (77)
Perimenopausal		35 (6)		18 (9)				53 (7)
Postmenopausal		100 (16)		35 (19)				135 (16)
NSE history[b]						5.33		
Yes		174 (29)		71 (37)				245 (31)
No		436 (71)		119 (63)				555 (69)
Sexual orientation						7.45		
Heterosexual		507 (83)		158 (83)				665 (83)
Bisexual		61 (10)		21 (11)				82 (10)
Lesbian		20 (3)		5 (3)				25 (3)
Asexual		2 (.3)		2 (1)				4 (.5)
Pansexual		11 (2)		2 (1)				13 (2)
Queer		6 (1)		1 (.5)				6 (.7)
Other		3 (.5)		1 (.5)				5 (.6)
Relationship status						13.57		
Single (not dating)		40 (7)		10 (5)				50 (6)
Single (casually dating)		78 (13)		13 (7)				91 (11)
In a committed relationship		185 (30)		47 (25)				232 (29)
Living with partner(s)		58 (9)		23 (12)				81 (10)
Married		243 (40)		97 (51)				340 (43)
Other		6 (1)		0 (0)				6 (1)
Yearly household income						2.75		
Less than $50,000		304 (50)		87 (46)				391 (49)
$50,001 to $100,000		242 (40)		75 (40)				317 (40)
More than $100,000		64 (10)		28 (14)				92 (11)
Race/ethnicity						6.32		
African American/Black		62 (10)		17 (9)				79 (10)
Asian		37 (6)		10 (5)				47 (5)
Caucasian/White		445 (73)		139 (73)				584 (73)
Hispanic/Latin American		36 (6)		13 (7)				49 (6)
Middle Eastern		1 (.1)		2 (1)				3 (.4)
Native American/Aboriginal		11 (2)		6 (3)				17 (2)
Other		18 (3)		3 (2)				21 (3)
Religious beliefs						6.08		
Atheist/agnostic		97 (16)		30 (16)				127 (15)
Buddhism		5 (1)		3 (2)				8 (1)
Catholicism		79 (13)		22 (12)				101 (12)
Christianity		250 (41)		83 (43)				333 (42)
Native American/Aboriginal beliefs		4 (.6)		1 (.5)				5 (.6)
Hinduism		7 (1)		2 (1)				9 (1)
Islam		8 (1)		3 (2)				11 (1)
Judaism		9 (1)		1 (.5)				10 (1)
Not religious		103 (17)		36 (19)				139 (17)
Spiritual/New Age		30 (5)		6 (3)				36 (5)
Wicca		2 (.3)		2 (1)				7 (.9)
Other		13 (2)		1 (.5)				14 (2)
Highest level of education						3.65		
High school degree/GED		66 (11)		18 (9)				84 (11)
Some college		189 (31)		47 (25)				236 (30)
College degree		280 (46)		97 (51)				377 (47)
Advanced degree (MA, etc.)		75 (12)		28 (15)				103 (12)

Note. No significant differences emerged between the two groups of women.

[a]Menopausal status was determined by the question "What is your menopausal status?" with a brief description of each stage (i.e., pre-, peri-, and postmenopause).

[b]Women were classified as having a history of nonconsensual sexual experiences (NSEs) if they answered positively to the question "Have you ever had a nonconsensual sexual experience (e.g., sexual abuse, sexual assault, rape …)?"

Table 2. *Female Sexual Function Index Scores by Group*

	No Arousal Concerns, *M* (*SD*) (*N* = 610)	Arousal Concerns, *M* (*SD*) (*N* = 190)	*F*	Entire Sample, *M* (*SD*) (*N* = 800)
Desire	4.28 (1.12)	3.10 (1.05)	165.39***	4.00 (1.21)
Arousal	4.91 (0.96)	3.21 (1.18)	401.98***	4.51 (1.25)
Lubrication	5.24 (0.91)	3.54 (1.26)	408.32***	4.84 (1.24)
Orgasm	4.87 (1.19)	3.41 (1.42)	199.68***	4.53 (1.39)
Satisfaction	4.94 (1.16)	3.86 (1.39)	114.50***	4.68 (1.30)
Pain	5.10 (1.21)	4.36 (1.37)	49.84***	4.92 (1.28)
Total	29.37 (4.55)	21.50 (5.15)	405.21***	27.50 (5.77)

***$p < 0.001$.

logistic regressions controlling for sexual function (i.e., FSFI total score was entered into the equation as a covariate). After applying a Bonferroni correction for the number of clusters ($k = 7$; $\alpha/8 = 0.007$), the only cluster that significantly predicted having an arousal concern was the context cluster, $\beta = 0.062$, $p = 0.004$. As the score on the context cluster increased by one standardized point, the odds of reporting an arousal concern increased by 1.063 (95% confidence interval [CI] = 1.00 to 1.13). A comparison of the predicted probabilities against true class values indicated that the logistic regression correctly classified 82.5% of cases. Taken together, these results indicate that writing about the contextual aspects of the sexual experience was positively linked with having an arousal concern, above and beyond the effects of overall sexual function.

Discussion

This study provides a linguistic exploration of the ways in which women describe the concept of sexual arousal. Participants responded to an open-ended writing prompt in which they were asked to express how they experience sexual arousal. Using the MEM, seven core semantic clusters emerged from participants' essays: foreplay, autonomic arousal, physical/mental arousal, context, fantasy, orgasm, and whole body. These results confirm previous research indicating that bodily arousal (as indicated by the Autonomic arousal and whole body clusters) and relationships (as indicated by the foreplay and context clusters) are also key players in women's experience of sexual arousal (e.g., Graham et al., 2004). The influence of sexual function (i.e., whether participants identified as having an arousal problem) on women's writing was also examined.

Table 3. *Results of the Sexual Arousal Assessment*

	No Arousal Concerns, *n* (%) (*N* = 610)		Arousal Concerns, *n* (%) (*N* = 190)		
	Yes	No	Yes	No	χ^2
Have you ever experienced pleasurable sexual feelings in your genitals from stimulation of your genital area?	572 (94)	38 (6)	174 (92)	16 (8)	0.293
What level of intensity do you currently experience this during sexual activity?					126.062***
Lower intensity than in the past	103 (18)		106 (61)		
No longer experiencing this	15 (3)		7 (4)		
Same as in the past	454 (79)		61 (35)		
Have you ever experienced genital pulsing/throbbing?	471 (77)	139 (23)	146 (77)	44 (23)	0.011
What level of intensity do you currently experience this during sexual activity?					105.764***
Lower intensity than in the past	111 (25)		84 (58)		
No longer experiencing this	18 (4)		24 (16)		
Same as in the past	342 (71)		38 (26)		
Have you ever experienced clitoral fullness, pressure, or engorgement?	402 (66)	208 (34)	108 (57)	82 (43)	5.145
What level of intensity do you currently experience this during sexual activity?					79.109***
Lower intensity than in the past	87 (22)		57 (53)		
No longer experiencing this	13 (3)		18 (17)		
Same as in the past	302 (75)		33 (30)		
Have you ever experienced genital warmth?	456 (75)	154 (25)	131 (69)	59 (31)	2.500
What level of intensity do you currently experience this during sexual activity?					113.844***
Lower intensity than in the past	78 (17)		73 (56)		
No longer experiencing this	16 (4)		19 (15)		
Same as in the past	362 (79)		39 (29)		
Have you ever experienced genital wetness/lubrication?	570 (93)	40 (7)	174 (92)	16 (8)	0.773
What level of intensity do you currently experience this during sexual activity?					172.352***
Lower intensity than in the past	121 (21)		109 (57)		
No longer experiencing this	14 (2)		26 (15)		
Same as in the past	435 (77)		39 (28)		

***$p < 0.001$.

Table 4. *The Highest Loading Words in Each Semantic Cluster*

Foreplay		Autonomic Arousal		Physical/Mental Arousal		Context		Fantasy		Orgasm		Whole Body	
Kiss	0.524	Breathe	0.469	Physical	0.417	Young	0.416	Woman	0.376	Climax	0.371	Blood	0.469
Tongue	0.453	Heart	0.458	Sensation	0.361	Age	0.414	Fantasy	0.360	Bring	0.371	Normal	0.452
Neck	0.426	Skin	0.422	Arousal	0.355	Relationship	0.378	Clit	0.346	Reach	0.358	Flow	0.450
Rub	0.415	Beat	0.412	Increase	0.347	Year	0.370	Man	0.325	Build	0.342	Leg	0.411
Tease	0.414	Fast	0.357	Stimulation	0.341	Love	0.336	Look	0.322	Slow	0.334	Sort	0.399
Finger	0.392	Face	0.346	Area	0.323	Lot	0.321	Guy	0.318	Long	0.319	Arm	0.396
Breast	0.391	Send	0.324	Contact	0.309	Time	0.306	Deep	0.302	Release	0.313	Clitoris	0.387
Mouth	0.389	Breath	0.319	Vaginal	0.308	Life	0.297	Situation	0.300	Point	0.299	Generally	0.378
Suck	0.363	Lip	0.315	Focus	0.307	Important	0.297	Easily	0.269	Day	0.294	State	0.367
Foreplay	0.342	Touch	0.309	Body	0.297	Enjoy	0.295	Alone	0.269	Finally	0.286	Masturbate	0.350

Table 5. *Zero-Order Correlations Between the Female Sexual Function Index (FSFI) Total Score and Each Semantic Cluster by Group*

Variable	1. FSFI Total	2. Foreplay	3. Autonomic Arousal	4. Physical/Mental Arousal	5. Context	6. Fantasy	7. Orgasm	8. Whole Body
Whole-group correlations (N = 800)								
1	1							
2	0.115**	1						
3	0.150**	0.017	1					
4	0.077*	−0.161	0.006	1				
5	−0.073*	−0.011	−0.225**	0.002	1			
6	0.028	0.051	−0.050	−0.124**	−0.051	1		
7	0.071*	−0.110**	−0.143**	0.047	−0.084*	−0.096**	1	
8	0.004	0.083*	0.022	0.072*	−0.089*	−0.010	−0.042	1
No arousal concerns correlations (N = 610)								
1	1							
2	0.149**	1						
3	0.071	0.009	1					
4	0.022	−0.204**	0.011	1				
5	−0.033	0.018	−0.226**	0.007	1			
6	0.065	0.074	−0.042	−0.121**	−0.097*	1		
7	0.046	−0.104*	−0.142**	0.067	−0.054	−0.112**	1	
8	−0.017	0.052	0.053	0.049	−0.062	0.002	−0.040	1
Arousal concerns correlations (N = 190)								
1	1							
2	0.108	1						
3	0.167*	0.044	1					
4	0.097	−0.037	−0.060	1				
5	0.000	−0.089	−0.186*	−0.014	1			
6	−0.024	−0.014	−0.077	−0.132	−0.075	1		
7	0.134	−0.127	−0.171*	−0.017	−0.158*	−0.049	1	
8	0.051	0.173*	−0.097	0.140	−0.166*	−0.047	−0.048	1

*$p < 0.05$; **$p < 0.01$.

The seven semantic clusters identified in the present study are frequently associated with sexual arousal in the scientific literature, which bolsters the validity of this study's findings. For example, the Film Scale (Heiman & Rowland, 1983), a self-report instrument that is typically used in the laboratory to determine level of arousal following an erotic stimulus, assesses autonomic, physical, and mental arousal. Physical and mental arousal, as well as fantasy and orgasm, are included in clinical assessments of sexual dysfunction (American Psychiatric Association, 2013). The interplay among sexual stimuli (e.g., fantasy), physiological arousal, and mental arousal is also highlighted in a number of models of sexual response, including Barlow's (1986) model of sexual dysfunction, the information processing model (Janssen, Everaerd, Spiering, & Janssen, 2000) and the dual control model (Bancroft & Janssen, 2000).

A few important thematic differences emerged between the essays written by women with and women without arousal concerns. Women without arousal concerns used significantly more words that loaded onto the autonomic arousal cluster than did women with arousal concerns, which highlights the importance of general bodily sensations in the overall experience of sexual arousal. Comparably, the autonomic arousal cluster was positively correlated with FSFI total score for women *with* arousal

concerns; as women with arousal concerns' scores on the autonomic arousal cluster increased, their FSFI scores *also* increased. We offer two potential explanations for this finding: (1) women with arousal concerns may interpret sensations associated with autonomic arousal differently, or (2) they may not experience these sensations altogether. With respect to the former, women without arousal concerns may conceptualize bodily reactions and sensations (e.g., feeling flushed or hot) as critical components of the sexual experience. It is possible that women with arousal concerns may not appraise these general bodily sensations as sexual or may not associate them with sexual activity. If a woman struggles to become aroused, these bodily cues (e.g., rapid heart rate) may take on a negative valence, as she may associate them with feelings of fear or anxiety, or uncertainty related to how her body will perform. This explanation is supported by both Barlow's model of sexual dysfunction (Barlow, 1986) and the information processing model (Janssen et al., 2000) of sexual arousal. Barlow's (1986) model posits that sexual dysfunction can emerge from the misinterpretation of bodily sensations, as well as from attentional focus on performance and other nonerotic cues. According to this model, the interpretation of sexual arousal sensations as anxiety can lead to an increase in anxious autonomic arousal, which then affects one's ability to become sexually aroused in the future, contributing to a negative feedback loop. A similar phenomenon is associated with high levels of anxiety sensitivity; among individuals with high anxiety sensitivity, an increase in heart rate may be interpreted as the onset of a heart attack, rather than as a natural response to a stimulus that increases autonomic arousal (e.g., exercise, caffeine; Taylor, 2014). The information processing model (Janssen et al., 2000) suggests that, for individuals with sexual dysfunction, sexual stimuli may activate threat-related memories, which may maintain the sexual dysfunction. It is possible that women without arousal concerns look for genital arousal sensations as well as bodily sensations that are potentially more salient, such as increased heart rate, to determine their arousal state. The combination of these two types of sensations may lead them to conclude that they have adequate arousal during sexual activity. Misinterpretation of or a lack of attention to these cues could therefore be a maintaining factor in sexual arousal dysfunction.

An alternative explanation is that women with arousal concerns may not experience autonomic arousal to the same extent as their healthy counterparts. If a woman's sexual arousal concern has a physiological etiology (e.g., cardiovascular disease, neurovascular problems), it is possible that these cues may be notably minimized or missing altogether. The sympathetic branch of the autonomic nervous system, which helps regulate unconscious, autonomic actions, plays an important role in female sexual arousal (e.g., Meston, 2000). When the sympathetic nervous system is compromised, there may be too much or too little activation to facilitate genital sexual arousal (Lorenz, Harte, Hamilton, & Meston, 2012). If this is the case, there may also be decreases in the extragenital physiological sensations that are associated with sexual arousal, such as increased heart rate, sweating, pupil dilation, hardening and erection of the nipples, and flushing of the skin. Therefore, for women with arousal dysfunction that is primarily driven by physiological factors, the obvious indicators of autonomic arousal may be lacking.

Interestingly, the context cluster significantly predicted group status after controlling for sexual function. Women with arousal concerns used words that loaded onto the context cluster significantly more than women without arousal concerns. Words in the context cluster are associated with topics such as relationship, age, and love; a high score on this cluster may indicate that the setting in which a sexual experience occurs is important to the overall feeling of sexual arousal for these women. This is not to say that intimate relationships are a component of their experience of sexual arousal, but rather that the type of relationship or the setting in which a sexual experience occurs may be influential. Similarly, it is possible that women with arousal concerns have more arousal contingencies than women without arousal concerns. This is supported by Sand and Fisher's (2007) finding that women with sexual difficulties were more likely to select Basson's (2002) circular or relational model of sexual arousal. It appears as though the relationship plays a larger role in the sexual experience for women with arousal concerns; women with no such concerns may be less affected by these relationship factors.

The relationship between context and sexual arousal concerns and sexual dysfunction more generally is not novel to this study. In fact, there is strong support for examining sexual function and dysfunction within the context of a relationship (Brotto et al., 2016). Brotto and colleagues (2016) argued that, as sexual behavior most often occurs within a dyad, each individual brings his or her own wants, needs, and concerns to a sexual encounter. If one partner is unsatisfied in the relationship, for example, it is likely that this concern will affect the couple's sexual relationship and can be a predisposing or maintaining factor for sexual dysfunction. Though it is often difficult to discern whether relational difficulties precede sexual difficulties or vice versa, treating these two concerns concurrently yields the greatest long-term results. For most patients struggling with sexual dysfunction, solely targeting the sexual concern, rather than also working to improve the quality of the relationship, will not be sufficient for resolving their sexual concerns. Relationship satisfaction (Witting et al., 2008), communication between partners (Byers, 2005), and attachment style (Butzer & Campbell, 2008) have all been shown to play important roles in women's sexual function. Similar results have been reported in both younger (Montesi et al., 2013) and older (Dennerstein, Lehert, & Burger, 2005; Dundon & Rellini, 2010) couples.

The dual control model (DCM; Bancroft, 1999) also offers some insight into the association between sexual arousal and the context of the sexual experience. The DCM suggests that sexual response is modulated by both

excitatory and inhibitory processes. It is thought that these processes work together to develop individual differences in the propensity for sexual arousal. Though the DCM was originally developed based on the psychophysiology of the male sexual response, it has been applied to women's response patterns as well (Graham, Sanders, & Milhausen, 2006). In the validation study for the Sexual Excitation/Sexual Inhibition Inventory for Women, more than 650 women responded to a series of general statements about arousability and inhibition. Factor analyses of the female data yielded a relationship importance factor, something which had not emerged in a comparable analysis on men (Janssen, Vorst, Finn, Bancroft, & Janssen, 2002). This factor also loaded onto the inhibitory (rather than the excitatory) domain. Graham and colleagues (2006) suggested this factor reflects the need for a sexual experience to be housed within a relationship context to best facilitate sexual arousal. Furthermore, the variability in women's endorsement of this factor indicated that relationships may play a larger role in sexual response for some women than for others. Taken together, the findings from the present study as well as those from previous research highlight the importance of considering sexual function within the context of the sexual relationship.

Though a strength of this study is that the MEM allowed for the large-scale examination of linguistic data, there are also limitations to this approach. For example, the MEM is somewhat insensitive to valence. Though the MEM is highly sensitive to semantic context, which often reveals some aspects of valence, the procedure can only partially capture this construct. However, it is important to understand that the MEM is not a word-counting approach. Although statements such as "I love fantasy" and "I'm not able to have sexual fantasies" may both load onto a "fantasy"' cluster, the words surrounding the word *fantasy* in the "I love fantasy" example may be very different than the words surrounding "I'm not able to have sexual fantasies" in the second example. If *fantasy* occurs more often in the context of other positively valenced words, then *fantasy* would load more highly onto a cluster of more positive words than onto a cluster of more negative words. Given its higher loading, *fantasy* would then be retained in the more positive word cluster. Furthermore, much of the richness of the women's writing was lost in the analytic process. As the MEM examines the co-occurrence of words in a given essay, details that would have been gained through qualitative methods are lost. In future studies, researchers could consider complementing the MEM with a word-counting software, such as the Linguistic Inquiry and Word Count program, which captures valence well. Furthermore, as women were not prompted to write about specific aspects of sexual arousal, their essays could have reflected the aspects of sexual arousal that they felt like writing about in the moment rather than the totality of their sexual arousal experiences. This could have led to artificial between-group differences in the endorsement of various clusters. However, we feel as though this heterogeneity could also have contributed to the diversity of participants' responses by highlighting the aspects of sexual arousal that were most important to each individual woman.

It is important to note that women in this study were not formally diagnosed with FSIAD. To meet diagnostic criteria for FSIAD, women must report experiencing at least three of the following during a clinical assessment: reduced or absent sexual interest, fantasies, initiation of sexual activity, sexual pleasure, arousal, genital or nongenital sensations. These concerns must have persisted for at least six months and lead to clinically meaningful distress (American Psychiatric Association, 2013). As study participants were recruited online, no clinical assessment was performed. Rather, the grouping of these women was based on self-identification. Women were asked if they believed that they had an arousal problem in the form of a yes/no question. The specific aspects of FSIAD, including duration and distress, were not assessed. Therefore, these results are limited in that they may not generalize to a clinical population. However, these groups of women differed significantly on all FSFI domains, and the FSFI total scores of women with arousal concerns fell below the clinical cutoff of 26.55, which has been used to indicate poor sexual function (Wiegel et al., 2005).

As this study took place online and required participants to write for 10 minutes, the sample was biased toward educated individuals (as evidenced in the writing styles and vocabulary range) with access to the Internet. Furthermore, it is possible that women who were comfortable taking part in this study had reflected on their sexual experiences in the past and were therefore willing to write about them. We also cannot be certain that all participants were women; it is possible that men could have selected "female" for both screening questions (i.e., gender identity and biological sex) and taken part in this study. Finally, though there was some diversity in sexual orientation, too few women identified as an orientation other than heterosexual to conduct analyses on the relationship between cluster invocation and sexual orientation. The applicability of these results to women of sexual orientations other than heterosexual is therefore limited.

Despite these limitations, the results of this study have potential implications for clinicians working with women with sexual arousal concerns. Clinicians could assess clients' appraisals of bodily sensations during sexual arousal and the associations of these bodily sensations with specific concerns. If it is determined that clients have negative associations with bodily sensations that occur during sexual arousal, then clinicians could encourage them to consider these sensations as part of the sexual experience and therefore strengthen the link between sexual and autonomic arousal. Alternatively, if clients are not noticing extragenital sensations during sexual arousal, then mindfulness-based treatments may be appropriate as mindfulness cultivates interoception, or the awareness of internal bodily changes. Indeed, one study examining the effects of an eight-week mindfulness-based cognitive therapy for women with sexual interest/arousal

disorder found significant gains in self-reported sexual function from pre- to posttreatment (Paterson, Handy, & Brotto, 2017).

It is also recommended that clinicians assess the role of the relationship when treating sexual dysfunction. Results from the present study and the extant literature (Brotto et al., 2016) highlight the importance of interpersonal relationships in the development and maintenance of sexual dysfunction. When a client presents with an arousal concern, clinicians should assess for aspects of her sexual relationship that may facilitate or hinder her experience of arousal. Exploring additional contextual factors that may be at play is also warranted. Clinicians could address the clients' relationship concerns in tandem with their sexual concerns, which may yield longer-lasting results than solely treating the sexual concerns.

Evaluations of women's appraisals of their bodily sensations leading up to and during sexual arousal could benefit our understanding of women's sexual concerns. Future research should examine the effect of altering women's appraisal of their bodily sensations to facilitate sexual arousal. Furthermore, for women seeking treatment for difficulties with sexual arousal, these concerns should be considered within the greater context of the partnered relationship.

References

Althof, S. E., Meston, C. M., Perelman, M. A., Handy, A. B., Kilimnik, C. D., & Stanton, A. M. (2017). Opinion paper: On the diagnosis/classification of sexual arousal concerns in women. *The Journal of Sexual Medicine*, *14*, 1365–1371. doi:10.1016/j.jsxm.2017.08.013

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, Virginia: American Psychiatric Publishing.

Bancroft, J. (1999). Central inhibition of sexual response in the male: A theoretical perspective. *Neuroscience and Biobehavioral Reviews*, *23*, 763–784. doi:10.1016/S0149-7634(99)00019-6

Bancroft, J., & Janssen, E. (2000). The dual control model of male sexual response: A theoretical approach to centrally mediated erectile dysfunction. *Neuroscience and Biobehavioral Reviews*, *24*, 571–579. doi:10.1016/S0149-7634(00)00024-5

Barlow, D. H. (1986). Causes of sexual dysfunction: The role of anxiety and cognitive interference. *Journal of Consulting and Clinical Psychology*, *54*, 140–148. doi:10.1037/0022-006X.54.2.140

Basson, R. (2002). A model of women's sexual arousal. *Journal of Sex & Marital Therapy*, *28*, 1–10. doi:10.1080/009262302317250963

Basson, R. (2015). Human sexual response. *Handbook of Clinical Neurology*, *130*, 11–18. doi:10.1016/B978-0-444-63247-0.00002-X

Boyd, R. L. (2014). *MEH: Meaning Extraction Helper (Version 1.4.15)*.

Boyd, R. L., Wilson, S. R., Pennebaker, J. W., Kosinski, M., Stillwell, D. J., & Mihalcea, R. (2015). Values in words: Using language to evaluate and understand personal values. *Proceedings of the Ninth International AAAI Conference on Web and Social Media*, 31–40.

Brotto, L. A. (2010). 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., Atallah, S., Johnson-Agbakwu, C., Rosenbaum, T., Abdo, C., Byers, E. S., … Wylie, K. (2016). Psychological and interpersonal dimensions of sexual function and dysfunction. *The Journal of Sexual Medicine*, *13*, 538–571. doi:10.1016/j.jsxm.2016.01.019

Brotto, L. A., Heiman, J. R., & Tolman, D. L. (2009). Narratives of desire in mid-age women with and without arousal difficulties. *Journal of Sex Research*, *46*, 387–398. doi:10.1080/00224490902792624

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science*, *6*, 3–5. doi:10.1177/1745691610393980

Butzer, B., & Campbell, L. (2008). Adult attachment, sexual satisfaction, and relationship satisfaction: A study of married couples. *Personal Relationships*, *15*, 141–154. doi:10.1111/j.1475-6811.2007.00189.x

Byers, E. S. (2005). Relationship satisfaction and sexual satisfaction: A longitudinal study of individuals in long-term relationships. *Journal of Sex Research*, *42*, 113–118. doi:10.1080/00224490509552264

Chung, C. K., & Pennebaker, J. W. (2008). Revealing dimensions of thinking in open-ended self-descriptions: An automated meaning extraction method for natural language. *Journal of Research in Personality*, *42*, 96–132. doi:10.1016/j.jrp.2007.04.006

Dennerstein, L., Lehert, P., & Burger, H. (2005). The relative effects of hormones and relationship factors on sexual function of women through the natural menopausal transition. *Fertility and Sterility*, *84*, 174–180. doi:10.1016/j.fertnstert.2005.01.119

Dundon, C. M., & Rellini, A. H. (2010). More than sexual function: Predictors of sexual satisfaction in a sample of women age 40–70. *The Journal of Sexual Medicine*, *7*, 896–904. doi:10.1111/j.1743-6109.2009.01557.x

Graham, C. A., Sanders, S. A., & Milhausen, R. R. (2006). Sexual Excitation/Sexual Inhibition Inventory for Women: Psychometric properties. *Archives of Sexual Behavior*, *35*, 397–409. doi:10.1007/s10508-006-9041-7

Graham, C. A., Sanders, S. A., Milhausen, R. R., & McBride, K. R. (2004). Turning on and turning off: A focus group study of the factors that affect women's sexual arousal. *Archives of Sexual Behavior*, *33*, 527–538. doi:10.1023/B:ASEB.0000044737.62561.fd

Hayes, R., & Dennerstein, L. (2005). The impact of aging on sexual function and sexual dysfunction in women: A review of population-based studies. *The Journal of Sexual Medicine*, *2*, 317–330. doi:10.1111/j.1743-6109.2005.20356.x

Heiman, J. R., & Rowland, D. L. (1983). Affective and physiological sexual response patterns: The effects of instructions on sexually functional and dysfunctional men. *Journal of Psychosomatic Research*, *27*, 105–116. doi:10.1016/0022-3999(83)90086-7

Janssen, E., Everaerd, W., Spiering, M., & Janssen, J. (2000). Automatic processes and the appraisal of sexual stimuli: Toward an information processing model of sexual arousal. *Journal of Sex Research*, *37*, 8–23. doi:10.1080/00224490009552016

Janssen, E., Vorst, H., Finn, P., Bancroft, J., & Janssen, E. (2002). The sexual inhibition (SIS) and sexual excitation (SES) scales: I. Measuring sexual inhibition and excitation proneness in men. *The Journal of Sex Research*, *39*, 114–126. doi:10.1080/00224490209552130

Kaplan, H. S. (1977). Hypoactive sexual desire. *Journal of Sex & Marital Therapy*, *3*, 3–9. doi:10.1080/00926237708405343

Lorenz, T. A., Harte, C. B., Hamilton, L. D., & Meston, C. M. (2012). Evidence for a curvilinear relationship between sympathetic nervous system activation and women's physiological sexual arousal. *Psychophysiology*, *49*, 111–117. doi:10.1111/j.1469-8986.2011.01285.x

Masters, W. H., & Johnson, V. E. (1966). *Human sexual response* (1st ed.). Little, Brown & Co: Oxford, England.

McLeod, A. I., & Xu, C. (2017). bestglm: Best Subset GLM.

Meston, C. M. (2000). Sympathetic nervous system activity and female sexual arousal. *The American Journal of Cardiology*, *86*, 30–34. doi:10.1016/S0002-9149(00)00889-4

Meston, C. M., Lorenz, T. A., & Stephenson, K. R. (2013). Effects of expressive writing on sexual dysfunction, depression, and PTSD in women with a history of childhood sexual abuse: Results from a randomized clinical trial. *The Journal of Sexual Medicine*, *10*, 2177–2189.

Mitchell, K. R., Wellings, K. A., & Graham, C. A. (2014). How do men and women define sexual desire and sexual arousal? *Journal of Sex & Marital Therapy*, *40*, 17–32. doi:10.1080/0092623X.2012.697536

Montesi, J. L., Conner, B. T., Gordon, E. A., Fauber, R. L., Kim, K. H., & Heimberg, R. G. (2013). On the relationship among social anxiety,

intimacy, sexual communication, and sexual satisfaction in young couples. *Archives of Sexual Behavior*, *42*, 81–91. doi:10.1007/s10508-012-9929-3

Paterson, L. Q. P., Handy, A. B., & Brotto, L. A. (2017). A pilot study of eight-session mindfulness-based cognitive therapy adapted for women's sexual interest/arousal disorder. *Journal of Sex Research*, *54*, 850–861. doi:10.1080/00224499.2016.1208800

Rosen, R. C., Brown, C., Heiman, J. R., Leiblum, S. R., Meston, C. M., Shabsigh, R., … D'Agostino, R. (2000). The female sexual function index (FSFI): A multidimensional self-report instrument for the assessment of female sexual function. *Journal of Sex & Marital Therapy*, *26*, 191. doi:10.1080/009262300278597

Ryding, E. L., & Blom, C. (2015). Validation of the Swedish version of the female sexual function index (FSFI) in women with hypoactive sexual desire disorder. *Journal of Sexual Medicine*, *12*, 341–349. doi:10.1111/jsm.12778

Sand, M., & Fisher, W. A. (2007). Women's endorsement of models of female sexual response: The nurses' sexuality study. *Journal of Sexual Medicine*, *4*, 708–719. doi:10.1111/j.1743-6109.2007.00496.x

Stanton, A. M., Boyd, R. L., Pulverman, C. S., & Meston, C. M. (2015). Determining women's sexual self-schemas through advanced computerized text analysis. *Child Abuse and Neglect*, *46*, 78–88. doi:10.1016/j.chiabu.2015.06.003

Taylor, S. (Ed.). (2014). *Anxiety sensitivity: Theory, research, and treatment of the fear of anxiety* (1st ed.). New York, NY: Routledge.

Team, R. C. (2016). *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing.

Tourangeau, R., & Yan, T. (2007). Sensitive questions in surveys. *Psychological Bulletin*, *133*, 859–883. doi:10.1037/0033-2909.133.5.859

Wiegel, M., Meston, C. M., & Rosen, R. C. (2005). The Female Sexual Function Index (FSFI): Cross-validation and development of clinical cutoff scores. *Journal of Sex & Marital Therapy*, *31*, 1–20. doi:10.1080/00926230590475206

Witting, K., Santtila, P., Alanko, K., Harlaar, N., Jern, P., Johansson, A., … Sandnabba, N. K. (2008). Female sexual function and its associations with number of children, pregnancy, and relationship satisfaction. *Journal of Sex and Marital Therapy*, *34*, 89–106. doi:10.1080/00926230701636163

Yarkoni, T. (2010). Personality in 100,000 words: A large-scale analysis of personality and word use among bloggers. *Journal of Research in Personality*, *44*, 363–373. doi:10.1016/j.jrp.2010.04.001

Appendix

This appendix provides excerpts from responses that scored highest on each additional semantic cluster. Cluster scores are indicated within parentheses.

Foreplay (10.65)

"I get very sexually aroused when my husband kisses me deeply. I love it when he reaches down and feels my private parts while he is kissing me. I get so turned on that I can hardly wait until we have intercourse. Foreplay is so wonderful. He not only kisses me deeply, he kisses my entire body. I love him sucking my breasts and I especially enjoy when he performs oral sex on me as he squeezes my nipples. I can't lie still because it feels so good."

Autonomic Arousal (3.35)

"Sexual arousal feels amazing. It feels like someone has turned on a button and loosened up all of your inhibitions and let them go. Your body goes limp, you are sweating, and your pulse is racing until it feels like your heart will just pop out of your chest. You feel a slight warmth in your skin, but it doesn't burn, it feels like something has been awoken inside of you that you want to feel again and again."

Physical/Mental Arousal (5.97)

"My first physical sign of arousal is a tingling around my vagina. If the arousal is intense, which is usually only when I am with my partner, then I usually feel sore or even ache for stimulation. My body is very reactive to arousal, and I have no issues 'getting wet' when aroused. I can usually feel the sensation quickly when beginning sexual contact and feeling that sensation only makes me more aroused. I tend to block out other thoughts when I am 'in the mood' and get very focused on sexual activity."

Fantasy (2.34)

"I am attracted to both men and women, so when I am excited by a 'fantasy,' the object varies. It may be about a woman who seduces me, or a man who overpowers me. Both involve my initial denial of the aggressor, and then giving into their advances. More typically, however, there is no seduction part of the fantasy—I just drop right into imagining whatever I would most prefer to experience in order to relieve my arousal."

Orgasm (2.96)

"It feels like a slow buildup towards an incredible climax, like a slow wave gathering strength far out at sea. The sensations of my body are heightened and I can feel a sort of tension building, and when orgasm happens all of that tension explodes outward like a burst dam. Afterwards there is a feeling of sublime relaxation."