

# Identifying the disruptions in the sexual response cycles of women with Sexual Interest/Arousal Disorder

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Various models have been conceptualized to explain human sexual response and sexual dysfunction. The present study used a circular model of sexual response, which distinguished between spontaneous and responsive desire, to investigate the location and number of breaks, defined as negative responses or the absence of positive responses, that occurred for women with low sexual desire. A total of 53 women who met diagnostic criteria for Sexual Interest/Arousal Disorder, and who were participating in a randomized trial of psychological treatment for low sexual desire participated (mean age = 39.0 years). They were instructed to complete a sexual response cycle worksheet based on a recent sexual encounter. Conceptual content analysis was used to identify the number and location of breaks within the cycle. Women's written free responses to the different components of the sexual response cycle were also analyzed. Breaks were most often found with respect to the biological and psychological factors that impact sexual arousal. Many women also identified breaks in their sexual response cycles in the link between sexual arousal to responsive desire. Taken together, these findings provide support for the relevance and application of a circular sexual response cycle for women with low sexual desire that emphasizes the responsive nature of desire.

**KEY WORDS:** Responsive desire, sexual desire, sexual dysfunction, sexual interest/arousal disorder, sexual response cycle

Low sexual desire, currently labelled as Sexual Interest/Arousal Disorder (SIAD) in the 5th edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5), is characterized by absent or reduced sexual interest or arousal along with significant personal distress (American Psychiatric Association, 2013). SIAD can be characterized by different expressions of sexual concern, including: reduced sexual thoughts or fantasies, reduced receptivity or initiation of sexual activity, fewer or less intense genital sensations, and lack of pleasure from sexual activity. However, the variability in how symptoms are expressed across different women, and how those different symptom profiles impact treatment decision making has not been entirely mapped out, making the treatment of low desire somewhat complex (McCabe & Goldhammer, 2013). Estimates vary across studies, with some showing 34–69% of women reporting low sexual desire within the last 4 weeks (Shifren, Monz, Russo, Segreti, & Johannes, 2008; Worsley, Bell, Gartoulla, & Davis, 2017) or within the last year (Mitchell et al., 2013).

Although sexuality theorists and clinicians have been interested in human sexual desire for centuries, sexual desire

only began to be systematically studied during the period of Masters and Johnson in the 1950s, and these foundational studies were limited to a focus on the physiological processes of arousal (excitement, plateau, orgasm, and resolution). Indeed, sexual desire was not even mentioned within their formulated human sex response cycle (Masters & Johnson, 1966). Later models would expand to encompass psychological components of motivation, such as Lief's (1977) model of sexual response that included sexual desire, and Kaplan's Triphasic Model (Kaplan 1977), which helped inform the categorization and diagnostic criteria of female sexual dysfunction for decades, beginning in 1980 with the publication of the DSM-III (American Psychiatric Association, 1980). The Triphasic Model comprised three phases: desire, excitement, and orgasm. Here, desire was defined as an appetitive internal state or drive, likened to hunger or thirst. Desire was controlled by the brain, whereas the excitement and orgasm phases only involved autonomic mechanisms in the genitals (Kaplan, 1977). As well, Kaplan (1979) offered explanations for low sexual desire, suggesting that desire could be impaired by physical and emotional ailments, yet also acknowledged

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that the causes for low sexual desire were still ambiguous. However, both Kaplan and Lief's models were not based on empirical research but rather from their clinical experience (Sutker & Adams, 2001).

The application of the four-phase model of Masters and Johnson has limitations, due to the focus on genital response (Basson, 2000; Tiefer, 1991). As well, this model adopts a definition of sexual desire that assumes its "spontaneous" nature (i.e., the experience of sexual desire that is felt intrinsically, and which then prompts an individual to seek sexual stimulation and arousal). However, the extent to which this represents the sexual desire experiences of all women in all situations is largely unknown. As a result, more recent models of sexual response have expanded their boundaries to allow different configurations of the desire-arousal relationship.

The Dual Control Model (DCM), considers individual variation in sexual response (Bancroft, 1999; Bancroft & Graham, 2011; Bancroft, Graham, Janssen, & Sanders, 2009). Here sexual response and sexual behaviour are contingent on the excitatory and inhibitory system and how they interact (Bancroft, 1999). This model emphasizes the role of cognitive processing of sexual stimuli, and outlines the requirement of not just the presence of sexual stimuli, but also the lack of stimulus blockade (Kurpisz, Mak, Lew-Starowicz, Nowosielski, & Samochowiec, 2015). The DCM proposes that individuals are more likely to have low sexual desire if they have low sexual excitation or high sexual inhibition (Bancroft et al., 2009). The DCM also accounts for how social and cultural context influences how sexual stimuli are processed, as the influence of culture is mediated by psychological and neurophysiological characteristics such as genetics, early childhood experience and learning, and social scripts regarding human sexuality (Bancroft et al., 2009; Kurpisz et al., 2015). Unlike past models of response, the DCM distinguishes between mental and physiological sexual arousal (Janssen & Bancroft, 2007).

More recent models, such as the Incentive Motivation Model (IMM), arose from broader theoretical frameworks on motivation theory, which garnered significant scientific support (Singer & Toates, 1987; Toates, 2009). According to Laan and Both (2008), and consistent with the predictions of the IMM, sexual arousal and desire are responses to relevant stimuli, regardless of whether one is aware of the stimuli. From this perspective, and just like other emotions, sexual desire and arousal are not spontaneous, but rather responsive to triggers. Biological factors (e.g., hormones) and past sexual experiences affect the strength and direction of an individual's sexual response to stimuli (Both, Spiering, Everaerd, & Laan, 2004). Given its emphasis on effective triggers, the IMM is probably best able to accommodate variability across women, and especially women who experience low sexual desire.

Informed by the empirical findings of the IMM as it was applied to sexual response, and also by the clinical histories of many patients seeking treatment of low sexual desire, Basson (2000; 2001a) further elaborated upon Kaplan's original concept of responsive sexual desire. She integrated responsive

desire within a new circular human sexual response cycle which was originally developed to apply to both men and women (Basson, 2001a), but over the years, has been described, perhaps erroneously, as a model applying mostly to women's sexual desire. The circular model differentiates between spontaneous desire and responsive desire, and the factors that influence how receptive an individual may be to a sexual encounter.

According to the model (Figure 1), an individual begins at a place of sexual neutrality, where motivation and willingness to engage in a sexual encounter may result from any number of sexual or non-sexual reasons. These may include, but are not limited to desire for emotional closeness, increasing self-esteem, or avoiding an argument with one's partner (Meston & Buss, 2007). This model also accommodates the desire to become sexually aroused as an initial motivator for seeking sexual stimuli (Basson, 2000). Along with a compelling reason for sex, the individual must be exposed to potent sexual stimuli that are relevant and effective for them. Basson considers two aspects of sexual stimuli: (1) how stimuli are processed on a subconscious level that results in an objective genital response, and (2) the context of the stimuli that is cognitively appraised and influences subjective feelings of arousal (Basson, 2002). Basson's model also addresses the biological and psychological factors that influence the processing of sexual stimuli, and in turn elicit sexual arousal. The crux of the model rests upon the sexual arousal to sexual desire link, which makes it differ fundamentally from early models of sexual response that predicate sexual arousal upon feeling sexual desire. The circular model further goes on to emphasize the importance of the outcome (whether it is emotionally and/or physically rewarding) in impacting future motivations for sex.

Although routinely used in the sex therapy setting (Gehring, 2003), Basson's model has not been given careful evaluation in research. A very simplified version of the circular sexual response cycle, one that assesses purely emotional intimacy-related reasons for seeking sex, has been studied. Specifically, Sand and Fisher (2007) evaluated a large random sample of nurses on whether they endorsed a sexual response cycle that was based upon intimacy reasons as being the only motivators for sex compared to the traditional Masters and Johnson, and Kaplan triphasic models of sex. They found no single model was favoured over another (Sand & Fisher, 2007). However, women who endorsed the intimacy-based model of desire were more likely to have questionnaire scores in the sexual dysfunction range.

A more recent replication of this design similarly found that no single model accounted for either women's or men's sexual response (Giraldi, Kristensen, & Sand, 2015). They found that participants who did not present with symptoms of sexual dysfunction endorsed linear models of sexual response more and women who experienced sexual dysfunction endorsed the circular model significantly more. It is unfortunate indeed that both of these studies presented such a narrow view of Basson's circular sexual response cycle which focused

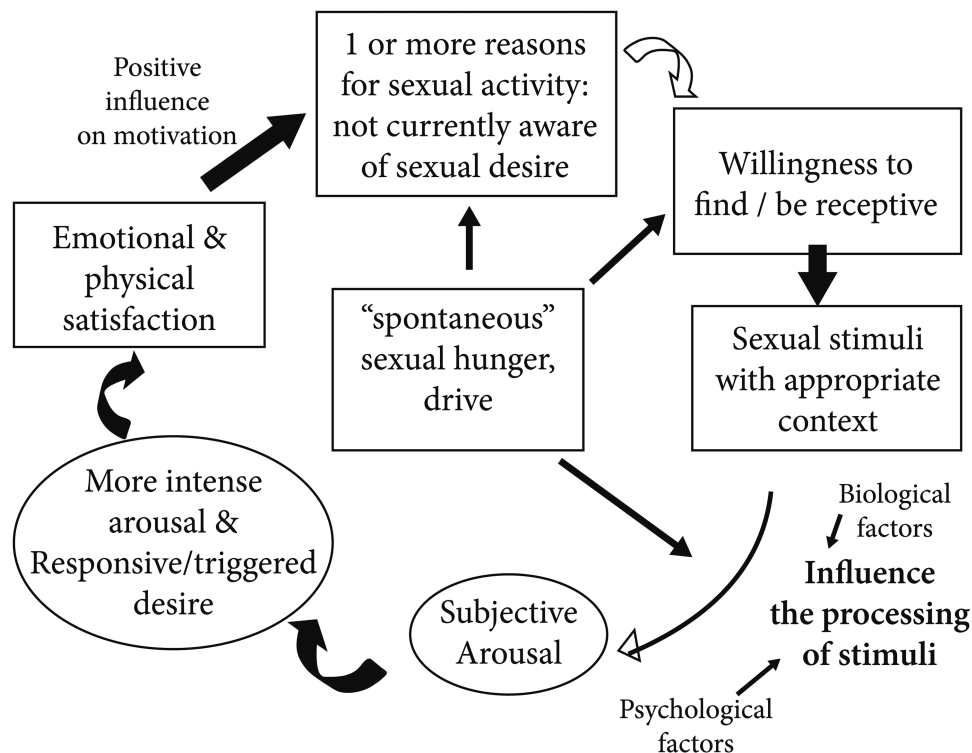


Figure 1. Basson's model of the sexual response cycle, which begins with sexual neutrality

solely on emotional intimacy based reasons for sex. Furthermore, the composite nature of Basson's model, which accounts for the experience of spontaneous and responsive desire, was neglected (Brotto, Graham, Paterson, Yule, & Zucker, 2015).

In a similar study, Ferenidou, Kirana, Fokas, Hatzichristou, and Athanasiadis (2016), examined individual variation in the endorsement of different sexual response cycles among women. Using a merged linear model comprised of Masters and Johnson's, and Kaplan's model and a circular model of sexual response, they found that most women alternated between endorsing the linear and circular model. Women who experienced sexual concerns or had sex for reasons of insecurity were more likely to endorse the circular model. However, like Giraldo et al. (2015), the circular model presented was not an accurate depiction of Basson's original model (which emphasized myriad different motivations for sex) and rather focused narrowly on emotional intimacy as a motivator (Driscoll et al., 2017).

To date, no research has taken a detailed evaluation of the different aspects of the circular sexual response cycles and the patterns endorsed by women with sexual desire difficulties, despite evidence from clinical histories that the model is very relevant to them (Basson, 2001b). The aim of the present study was to utilize Basson's model and identify where the interruptions or breaks, defined as negative responses or the absence of positive responses, occurred in the sexual response cycles of women who have low sexual desire, in an effort to

determine how applicable the model is for women with SIAD. Qualitative assessments had the goal of allowing us to describe the types of factors that interrupt women's sexual response cycles.

## METHOD

### Participants

Women in the present set of analyses were participants in a larger randomized trial of psychological treatment for low sexual desire. The inclusion criteria were as follows: between the ages of 19–65, fluent in English, and meeting diagnostic criteria for SIAD. Women who had a psychiatric or medical condition that would prevent group participation or completion of daily homework were excluded. As well, those with Borderline Personality Disorder were excluded.

Of the 85 women enrolled in the larger study, 32 women did not participate in the current study for the following reasons: two declined to share their worksheets as they felt the information on their worksheets was too personal ( $n = 2$ ), 10 women did not respond to the request for obtaining the worksheets ( $n = 10$ ), seven women had dropped out of the treatment study ( $n = 7$ ), two women reportedly lost their worksheets ( $n = 2$ ), and two women had not yet completed their second assessment, when worksheets were collected ( $n = 2$ ). As well, due to changes in the assessment measures, six

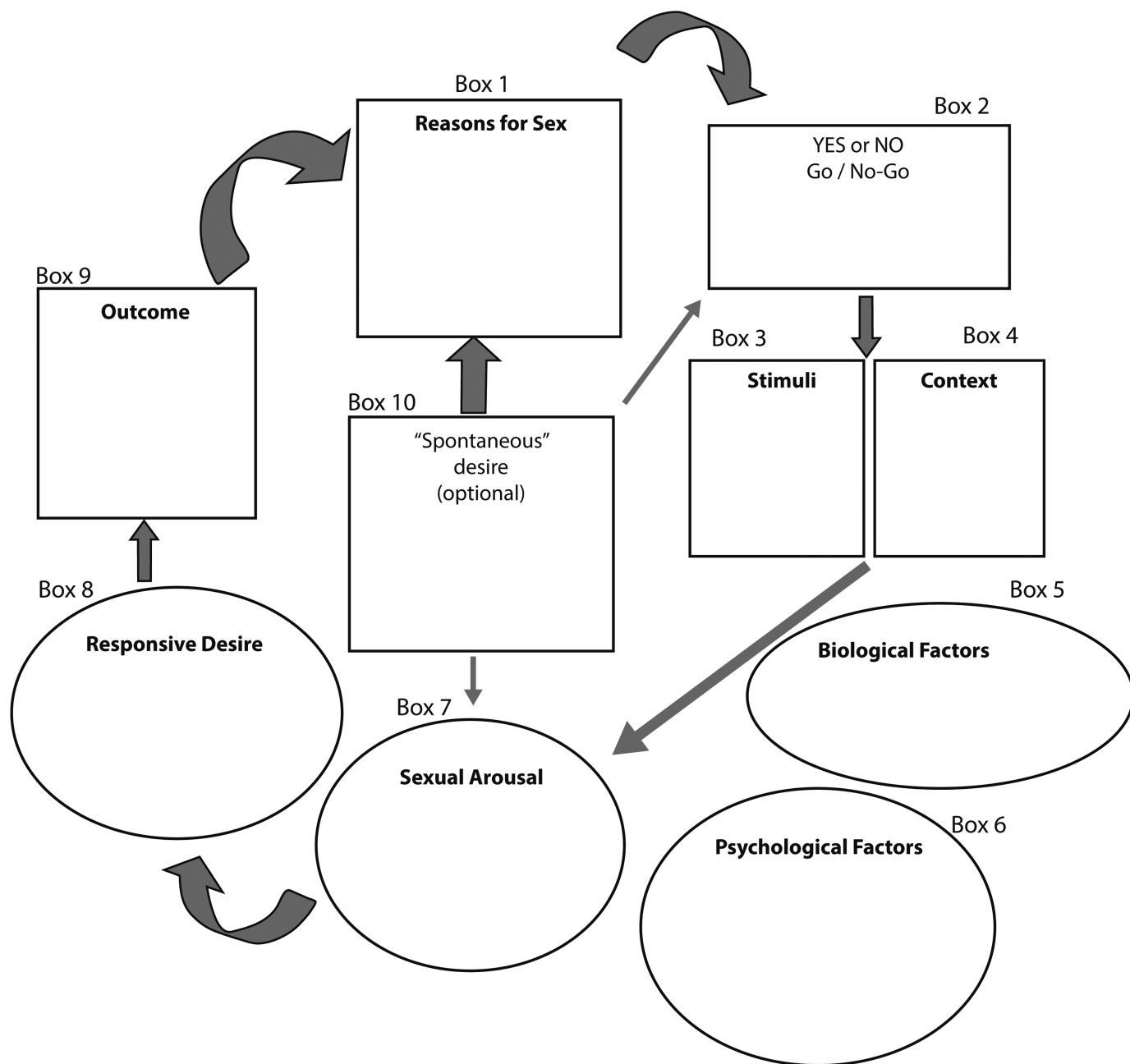


Figure 2. Sexual response cycle worksheet adapted from Basson's model

participants' worksheets were excluded ( $n = 6$ ). In addition, three participants' worksheets were blank and were thus excluded ( $n = 3$ ). The final sample consisted of 53 women who provided completed worksheets ( $n = 53$ ).

### Materials

**Sexual Response Cycle.** Basson's model of the sexual response cycle was adapted into a worksheet (Figure 2). The worksheet outlined the cycle and instructed participants to reflect upon a recent sexual encounter, specifically addressing the following domains of the cycle: their reasons for sex (box 1);

willingness to move forward with a sexual encounter based on these reasons alone (box 2); the stimuli and context that help in becoming aroused (box 3 and 4); any biological and psychological factors that help or hinder becoming aroused (box 5 and 6); the extent to which the combination of "reasons," "stimuli," and "context" lead to the experience of sexual arousal, as well as the physical and mental signs of sexual arousal that were experienced (box 7); the extent to which sexual desire is felt due to awareness of sexual arousal (box 8); and the outcome of the sexual experience and how the outcome makes it more or less likely to accept or initiate

a future sexual encounter (box 9). Because the spontaneous desire component of the cycle (box 10) was labelled as optional, we cannot determine if a blank box was indicative of a break and therefore will not be analyzed here.

**Demographic Questionnaire.** The following demographic information was collected: age, ethnicity, level of education, employment status, sexual orientation, relationship status, reproductive history, medical and psychological history, and history of sexual assault. Specifically, age, ethnicity, education, and relationship status were reported in these analyses.

## Procedure

**The study was approved by the Clinical Research Ethics Board at University of British Columbia.** Women who inquired about the treatment study were assessed for eligibility through a phone interview conducted by a trained research assistant, and then met with a trained doctoral-level clinical psychology graduate student for an in-person interview. Upon determining eligibility, women were asked to sign a consent form and randomly assigned to one of two treatment groups, which consisted of eight weekly two-hour group sessions with women experiencing similar sexual concerns, and led by two experienced facilitators. Homework exercises were assigned weekly.

In week two, facilitators discussed and drew out the sexual response cycle, illustrating each component step by step, after which women completed the worksheet at home according to their own sexual experiences. All women in the treatment study were sent an email requesting the collection of their sexual response cycle worksheets for the purpose of examining the breaks that might occur. For the participants who consented to sharing their worksheets, they were collected at the following post-treatment assessment, where the worksheets were photocopied and the originals were returned to the participants.

## Data analysis

To address our primary research question, conceptual content analysis was used to identify the existence of breaks in the cycle. Specifically, breaks were defined as negative responses or the absence of positive responses. Breaks were identified with the following coding scheme: Box 1: based on the literature regarding the approach-avoidance theory (Gable & Impett, 2012; Muise, Boudreau, & Rosen, 2017), we coded women's reasons for sex as either positive/approach reasons (i.e., to attain a positive outcome, such as emotional closeness), negative/avoidance reasons (i.e., to avoid a negative outcome, such as to avoid an argument), or both, with a break identified as present if women listed only negative/avoidance reasons or no reasons for sex. Box 2: women's willingness to move forward with a sexual encounter based on her reasons alone was coded as having a break if her reasons for sex were negative/avoidance reasons, if she had no reasons for sex, or if she stated she was not willing to move forward with a sexual encounter irrespective of the reasons for sex listed.

Box 3: breaks were identified if women did not report any stimuli that could elicit a sexual response for her. Box 4: breaks were identified if women did not report any context-related factors that facilitated sexual response, or if she listed a contextual factor (e.g., fear of someone walking in) that interrupted her sexual arousal. Box 5: if women reported biological factors that hinder arousal (e.g., use of sex-interfering medications; fatigue), this was coded as a break. Box 6: if no psychological factors that help with arousal were reported (e.g., mental focus on sensations), this was coded as a break. If psychological factors that hinder arousal were reported (e.g., distractions, negative self-judgement, body image concerns), this was coded as a break. Box 7: if women did not report any signs of sexual arousal, this was coded as a break. Box 8: if women did not report responsive desire that emerged in response to arousal, this was coded as a break. Box 9: if women reported that the outcome was not emotionally rewarding or if it was not physically rewarding (regardless of how she defined rewarding), this was coded as a break. In total, there were a possible 11 breaks that could occur throughout the sexual response cycle. Associations between breaks within the sexual response cycle and age were also examined.

In addition, the frequency of responses was calculated for the following components that together impact sexual arousal: reasons for sex, stimuli, context, helping biological factors, hindering biological factors, helping psychological factors, and hindering psychological factors. For example, all reported reasons for sex were transcribed and amalgamated into a list, then the presence of these reasons in women's worksheets were tallied. This process was carried out for all components listed above. Two coders completed all analyses and Cronbach's alpha was calculated to determine reliability between their analyses.

## RESULTS

### Sample characteristics

Participants ( $n = 53$ ) ranged in age from 19 to 64 years ( $M = 39.0$  years,  $SD = 13.1$  years). Participants were primarily Euro-Caucasian (81%), with others identifying as East Asian (4%), South Asian (4%), Latin American (2%), Middle Eastern (2%), or biracial (7%). A total of 96% of women reported having at least some post-secondary education. The relationship status of participants was reported as follows: 75% of women were in a relationship, 11% were single, 11% were dating, and 2% chose not to disclose their relationship status.

### Breaks in the cycle

Conceptual content analysis was used to examine the interruptions throughout participants' sexual response cycles. Women experienced an average of 5.1 ( $SD = 1.9$ ) breaks out of a possible 11 breaks. The number of women who experienced breaks in their sexual response cycle worksheets, with

Table 1. Percentage of Women Who Experienced Breaks throughout the Sexual Response Cycle

Location of break in cycle	<i>n</i>	%
Reasons for sex	4	7.5
Willingness	16	30.2
Stimuli	3	5.7
Context	3	5.7
Biological helping factors	43	81.1
Biological hindering factors	46	86.8
Psychological helping factors	42	79.3
Psychological hindering factors	48	90.6
Sexual arousal	18	34.0
Responsive desire	24	45.3
Outcome	23	43.4

respect to each component of the cycle, is summarized in Table 1. Reasons for sex (Box 1) had breaks for 7.5% of women, indicating that for 7.5% of the sample, their sexual response cycle was interrupted due to a lack of effective reasons for engaging in sexual activity. Breaks were present in willingness to engage in a sexual encounter based on the listed reasons alone (Box 2), for 30% of women. Few women had breaks in the stimuli (5.7%) and context (5.7%) component of the cycle (Boxes 3 and 4). A large proportion of women had breaks in the biological and psychological promoters and inhibitors of sexual arousal (Boxes 5 and 6). Specifically, 81.1% of women did not identify any facilitating biological factors. Hindering biological factors (e.g., illness, pain, arthritis, medication) were present in the cycles of 87% of women. As well, 90.6% of women had hindering psychological factors (e.g., body image issues, fear of pain, fear of judgement), while 79% did not list any facilitatory psychological factors (e.g., concentration on cues). A total of 34% of the women reported a break in their cycle leading up to sexual arousal, and nearly half the women noted that sexual arousal did not trigger desire for them. Moreover, 43.4% of the women reported that the outcome of the sexual encounter did not reinforce a positive motivation for sex on future encounters. There was no significant relationship between age and total number of breaks throughout the cycle; however, a significant medium correlation was found between age and reporting a physically and/or emotionally rewarding outcome,  $r(51) = .36, p = .008$ .

### Frequency of responses

Frequency of responses for the stages of the cycle that impact sexual arousal and desire were calculated. Specifically, women's reasons for sex, stimuli, context, biological factors, and psychological factors are reported below. Many of the items that women reported as reasons for sex, stimuli, context, and biological and psychological factors were only endorsed by a single individual (e.g., only one woman reported lactation as a biological hindering factor, while another woman was the only person to report feeling physically healthy as a biological helping factor). In other words, a large portion of

Table 2. Proportion of Unique Responses for Each Component of the Cycle

Component of cycle	Total responses	Percent of unique responses
Reasons for sex	46	56.5
Stimuli	41	34.2
Context	47	51.1
Hindering biological factors	26	53.9
Helping biological factors	12	75.0
Hindering psychological factors	41	34.2
Helping psychological factors	14	85.7

responses were unique responses. However, there were items that many women endorsed (e.g., 70% of women listed emotional closeness as a reason for sex) (Table 2). In addition, the three most frequently endorsed items for each of these components are reported below (Table 3).

**Reasons for sex.** Overall, more than 80% of the total reasons for sex reported were positive/approach reasons. Most notably, 70% of women listed emotional closeness as a reason for sex, 37% listed to make their partner happy as a reason, and 35% listed the need for physical pleasure. The most frequently reported negative/avoidance reasons were obligation or to "get it over with" (14%), and felt guilty or to avoid guilt (12%).

**Stimuli and context.** The majority of women listed touching or cuddling as a required stimulus for sexual arousal (63%). As well, 32% of women reported kissing as required stimuli. The most frequently reported context was the need for privacy (42%), that the sexual encounter not occur too late in the day (26%), and a sexual encounter not to be rushed (25%).

**Biological factors.** The most frequently reported hindering biological factor was pain or discomfort, with 32% of women experiencing this. Second to this was fatigue with 26% of women endorsing this. Only 19% of women reported having at least one helping biological factor for sexual arousal, with the most frequently endorsed being the use of alcohol or drugs (3%) and menstruation (4%).

**Psychological factors.** A third (31%) of women reported being distracted as a hindering factor, as well as 26% of women reported memories of past experiences hindering their sexual arousal. Body image was listed as a hindering factor for 25% of women. Helping psychological factors were reported among only 21% of women. Specifically, 5% reported feeling sexy or attractive as a helping factor, as well as feeling safe (3%).

Cronbach's alpha was run to determine if there was agreement between two coders' judgement on whether breaks were present throughout the sexual response cycles, as well as for amalgamating the list of responses for women's reasons for sex, stimuli, context, biological factors, and psychological factors. There was strong agreement between the two coders' judgements,  $\alpha = .89$  (95% CI, .82 to .94),  $p < .005$ .

Table 3. Three Most Frequently Endorsed Responses for Each Component of the Sexual Response Cycle

	Most frequent responses	%
Reasons for sex	Emotional closeness	69.8
	Make partner happy	36.8
	Sexual pleasure	34.9
Stimuli	Touching/cuddling	63.2
	Kissing	32.1
	Smell of partner	17.9
Context	Need for privacy	41.5
	Not too late in day/evening	26.4
	Not rushed	24.5
Biological hindering factors	Pain/discomfort	32.1
	Fatigue	26.4
	Body non-responsive sexually	17.0
Biological helping factors	Menstruation	3.8
	Drugs or alcohol	2.8
	Not tired	2.8
Psychological hindering factors	Distracted/can't focus	31.1
	Memories from past	26.4
	Body image	25.5
Psychological helping factors*	Feeling sexy/attractive	4.7
	Feeling safe	2.8

Note. \*Remaining psychological helping factors not listed due to same amount of endorsement

## DISCUSSION

The present study used Basson's model of circular sexual response to identify the location and frequency of breaks occurring for 53 women with Sexual Interest/Arousal Disorder. Women's qualitative data were examined to assess their responses within the framework of the sexual response cycle to better understand the interruptions that occur throughout the cycle. Our results found breaks in every stage of the sexual response cycle; however, certain points in the cycle had breaks occurring for women more so than others.

A total of 8% of women reported having no reasons or only negative reasons for sex, with emotional closeness being the most endorsed reason for sex (70%). This mirrors previous findings looking at women's reasons for sex, which also found desire for emotional closeness to be the most endorsed motivation (Leigh, 1989). More than one-third of women also reported sexual pleasure as a motivation for sex. This finding was also similar to Meston and Buss' (2007) examination of reasons for sex among an undergraduate sample, which found physical pleasure to be the most frequently endorsed item. These findings support the applicability of Basson's composite model, which accounts for sexual and intimacy-based reasons for sex.

While most women (94%) reported relevant sexual stimuli needed to facilitate sexual arousal, one-third of women did not report the experience of sexual arousal even with the presence of sexual stimuli. A possible explanation for this is the cognitive appraisal of stimuli, which may have inhibited sexual arousal. This interpretation stems from not only the DCM

(Bancroft, 1999), but also the IMM (Both et al., 2004), in addition to Basson's model (2000), which all emphasize that more than the presence of relevant stimuli is required to facilitate sexual arousal. The stimuli may not have been potent enough or the context of the sexual encounter hindered the processing of sexual stimuli.

Few women (6%) reported lacking the context they needed to experience sexual arousal. Almost half of women reported the need for privacy, and one-quarter of women reported the need for a sexual encounter to occur not too late and to be not rushed. These contextual needs have been observed previously in clinical settings, with the need for an "appropriate atmosphere" and for sex to not feel like a hurdle communicated as important (Basson, 2001b). Like the stimuli component of the cycle, there was a difference in the number of women who reported having the necessary context and one third of women who reported not experiencing sexual arousal. A possible explanation for this could be while almost all women were able to identify the context they needed to facilitate sexual arousal, these contextual needs did not actually manifest during their sexual encounters.

Biological and psychological factors hindering the experience of sexual arousal were reported by almost all women (87% and 91%, respectively). These areas of the sexual response cycle had breaks for more women compared to any other component of the cycle. This is not entirely surprising, as biological and psychological factors have been previously found to affect one's receptivity to sexual stimuli (Brotto et al., 2016; Laan & Both, 2008). Biological hindering factors, such as depression (reported by 11% of women in the current

study), have been well-documented in terms of their inhibitory effects on sexual responsiveness (McCabe et al., 2010). Ferguson (2001) conducted a review on the effects of antidepressants on sexual arousal, with results showing that most classes of antidepressants negatively impacted sexual responsiveness. As well, fatigue, which was reported by one third of our sample, has been documented to play a role in the inhibition of sexual stimuli (Basson, 2001a). Similar psychological factors were also reported in Graham, Sanders, Milhausen, and McBride's (2004) focus group study, which explored factors that excite or inhibit sexual arousal in women. Themes emerged such as positive body image and partner's acceptance of one's body, which related to current findings, as only 2% of women reported positive body image as a psychological facilitating factor and more than one quarter of women reported body image issues as a hindrance.

While only one third of women did not experience sexual arousal, almost half of women did not experience feelings of responsive desire. These findings confirm that among women with SIAD responsive desire, even in the presence of sexual arousal, may not take place. Other factors beyond the awareness of one's own sexual arousal may impact responsive desire, such as psychological factors. Women may not have a positive reaction to feelings of sexual arousal nor does the experience of arousal necessarily result in the desire to continue with a sexual encounter (Basson, 2002).

Almost half of women reported that the outcome of the sexual encounter did not reinforce a positive motivation for future sexual encounters. This suggests that women may be continuing to engage in sexual activity although it does not elicit physically and/or emotionally positive outcomes for them in a way that would elicit a motivation for sex in the future. Clinical observations have found that physically and emotionally disappointing sex can result in feelings of confusion and resentment, which can lead to avoidance of future sexual encounters (Basson, 2001a). From these clinical observations it has also been suggested that low sexual desire and aversion to sexual activity may exist on a continuum, with women who feel like they cannot reject an invitation for sexual activity to be more aversive to sex (Basson, 2010). Much of the research looking at the impact of negative sexual experiences has focused on trauma, such as childhood sexual abuse (e.g., Aaron, 2012; Najman, Dunne, Purdie, Boyle, & Coxeter, 2005), and as such, there is a need to also empirically examine the impact of consensual but disappointing or undesired sexual experiences on future sexual encounters.

### Limitations

Because participants were from a larger ongoing treatment study, which involved a 15-month time commitment and exclusion criteria based on ability to attend group treatment and completion of daily homework exercises, our sample may be different in some way from women who were unable to commit to the study or had other reasons that precluded them from participating, and as such, our findings may not be generalizable to all women with SIAD. Limitations of this

study also included the inability to make comparisons to women without sexual concerns, as there was no inclusion of a control group of women without sexual desire concerns. In addition, given the possibility of a reporting bias, it may be that feelings of embarrassment or a sense that the requested information was too personal may have impacted how women completed the worksheets.

### Implications

While Basson's circular sexual response model has been used in clinical settings to identify interruptions in patients' sexual response cycles, and has been described as therapeutic (Basson, 2001b), there has been no empirical examination of the breaks that occur throughout the cycle. This study is the first to empirically examine Basson's composite circular model of sexual response with the goal of identifying the breaks that occur throughout the cycle for women with SIAD. The findings presented here provide support for the utility of this model in identifying where and how often women with low desire experience disruptions in their sexual response cycles. It is possible that this worksheet may be useful for the general clinical setting.

### Future directions

Future studies should attempt to compare women who do and do not have sexual desire concerns in their experiences of the circular sexual response cycle to determine where and if the breaks identified differ between these groups. In addition, components of the circular sexual response cycle could be analyzed before and after treatment, where we might predict treatment focusing on broadening the range of sexual triggers to significantly increase stimuli-related factors, whereas treatment designed to empower women to consider why they engage in sex to enhance the initial motivations for sex aspect of the cycle.

### CONCLUSIONS

The present study found the occurrence of breaks in all components of the sexual response cycle, with biological and psychological factors impacting most women's experiences. Women shared many of the same experiences, while also endorsing unique responses in terms of their reasons for sex, the stimuli and context they required, and biological and psychological factors. The exploratory nature of this study served to inform potential directions for future research to better understand the factors involved in low sexual desire.

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