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Partner responses to low desire: Associations with sexual, relational, and psychological well-being among couples coping with Female Sexual Interest/Arousal Disorder

Rosen, N. O., Corsini-Munt, S.*, Dubé, J.,* Boudreau, C.* & Muise, A. (2020). Partner responses to low desire: Associations with sexual, relationship, and psychological wellbeing among couples coping with Female Sexual Interest/Arousal Disorder. *The Journal of Sexual Medicine*, 17, 2168-2180.

<https://www.doi.org/10.1016/j.jsxm.2020.08.015>

Abstract

Introduction: The experience of distressing low sexual interest/arousal— Female Sexual Interest/Arousal Disorder (FSIAD)—is prevalent in women of all ages and is associated with poorer sexual, relationship, and psychological wellbeing compared to women without this difficulty. Women who are partnered are almost five times more likely to be distressed by low desire and to receive a diagnosis of FSIAD than unpartnered women, indicating that interpersonal factors are highly relevant, though largely neglected in past research.

Aim: In a dyadic cross-sectional and longitudinal study, we examined whether partner responses to FSIAD were associated with the sexual, relationship, and psychological wellbeing of couples, and whether any effects persisted one year later.

Methods: Women diagnosed with FSIAD ($N = 89$) completed a validated measure of perceived partner positive vs. negative responses to their low sexual interest/arousal and their partners reported on their own responses, as well as measures of sexual desire, sexual satisfaction, relationship satisfaction, sexual distress, and anxiety. One year later, couples ($N = 66$) completed the outcome measures again. Data were analyzed according to the Actor-Partner Interdependence Model.

Main Outcome Measures: Sexual Desire Inventory – Solitary and Partner-Focused Subscales; Global Measure of Sexual Satisfaction; Female Sexual Distress Scale; Couple Satisfaction Index; State-Trait Anxiety Inventory-Short Form.

Results: When women with FSIAD perceived more positive partner responses (e.g., warm, supportive, compassionate) relative to negative responses (e.g., hostile, unsupportive, indifferent) they were more satisfied with the relationship and they and their partners reported lower anxiety. When partners reported more positive relative to negative responses, they had greater

relationship and sexual satisfaction and lower sexual distress and anxiety. Exploratory analyses revealed that women's *perceptions* of their partners' responses accounted for the link between partners' own responses and women's relationship satisfaction and anxiety. Partner responses did not predict any change in outcomes over time.

Clinical Implications: Findings support interpersonal conceptualizations of FSIAD and may inform the development of future couples-based interventions.

Strengths and Limitations: This study is one of few dyadic investigations of FSIAD, as diagnosed via a clinical interview. Significant associations were only observed cross-sectionally, limiting causal conclusions. There was limited power to detect longitudinal effects.

Conclusions: More positive responses to women's low sexual interest/arousal by partners is linked to better adjustment among couples affected by FSIAD.

Keywords: Female Sexual Interest/Arousal Disorder, Couples, Partner responses, Sexual desire

1 Complaints of low sexual desire and arousal difficulties in women that causes distress—
2 —Female Sexual Interest/Arousal Disorder (FSIAD¹)—is the most frequent reason for seeking
3 sex therapy^{2, 3}. FSIAD is characterized by low sexual desire, few/no sexual thoughts, no
4 initiation of sexual behaviour and lack of receptivity to partner initiation, lack of pleasure during
5 sexual activity, lack of responsive desire to erotic cues, and difficulties with physical sexual
6 arousal¹. At least three of these symptoms must persist for a minimum of six months, not be
7 attributable to another psychiatric or medical condition and be the cause of significant distress. In
8 a nationally representative sample, 39% of women reported low sexual desire, 26% reported low
9 arousal, and 30% of women with low desire were also sexually distressed⁴. When applying the
10 specific criteria of FSIAD introduced in the fifth edition of the Diagnostic and Statistical Manual
11 of Mental Disorders (DSM-5¹; i.e., six month persistence and experienced on all or almost all
12 occasions) community prevalence is reported to be 0.6%⁵. Despite the discrepancy in prevalence
13 when strictly applying the DSM-5 criteria, there is ample evidence that low sexual desire is a
14 common and distressing problem for many women⁶⁻⁸. The etiology of FSIAD is multifactorial
15 and includes biological, psychological, and interpersonal factors^{9, 10}. The latter have been
16 neglected in research despite theoretical and clinical models of FSIAD suggesting a significant
17 role for relationship processes^{9, 11-14}. The current study addresses this oversight by examining
18 associations between partner responses to FSIAD—that is, the partners’ positive relative to
19 negative response to women’s low sexual desire/arousal—and the sexual, relationship, and
20 psychological adjustment of couples coping with this condition.

21 The burden of FSIAD is far-reaching; affected women report lower sexual and
22 relationship satisfaction and greater symptoms of anxiety and depression relative to women
23 without sexual dysfunction^{15, 16}. Partnered women are five times more likely to be distressed by

24 their low desire than unpartnered women and thus receive an FSIAD diagnosis⁴, underscoring
25 the interpersonal nature of this condition. Indeed, one study found the association between
26 women's low sexual desire and distress could be explained by partner-related factors, such as
27 whether the low desire prevented them from engaging in partnered sexual activity, and whether it
28 decreased their partners' sexual pleasure¹⁷. Sexual difficulties in the partner, poor sexual
29 compatibility, and relationship dissatisfaction—reported from the perspective of the woman with
30 low desire only—have also been linked to FSIAD symptomatology¹⁸⁻²⁰. Emotional intimacy with
31 a partner is thought to facilitate women's sexual desire and arousal^{21, 22}. In fact, there is evidence
32 that relational factors better account for women's low desire than do biological disturbances such
33 as low testosterone^{19, 23, 24}. Despite this, the potential role of the partner, including both women's
34 perceptions of their partner's responses to their low desire and the perspective of the partners
35 themselves, in maintaining or exacerbating FSIAD and its consequences has received little
36 attention.

37 Yet the partners of women with FSIAD are intimately affected and have their own
38 responses to the sexual issue, which may have implications for the woman's desire and couples'
39 adjustment. In the first dyadic FSIAD study, using the same sample of couples from the current
40 study as well as a control group of couples, we found that partners of women with FSIAD had
41 lower sexual and relationship satisfaction, greater sexual distress, and male partners reported
42 more erectile and orgasmic difficulties compared to partners of women without sexual
43 dysfunction¹⁶. We have also shown that other interpersonal factors such as greater sexual
44 communal strength (i.e., being motivated to meet a partners' sexual needs), relational self-
45 expansion (i.e., viewing a partner as providing opportunities to broaden one's sense of self), and
46 better emotion regulation strategies in the context of sexual interactions were linked to higher

47 sexual desire, sexual and relationship satisfaction, and lower couple conflict and symptoms of
48 depression and anxiety in affected couples²⁵⁻²⁷. Thus, consistent with evidence from other sexual
49 dysfunctions^{28, 29}, *both partners'* cognitive, affective, and behavioral responses to FSIAD appear
50 to contribute to the sexual symptoms and associated repercussions.

51 In their *Interpersonal Emotional Regulation Model of Sexual Dysfunction* in women,
52 Rosen and Bergeron²⁸ proposed that interpersonal factors acting at both the distal (i.e., trait or
53 predisposing aspects of the relationship) and proximal (i.e., state or what occurs before, during,
54 or after sexual activity) levels affect the couples' co-regulation of their emotions and,
55 consequently, their adjustment. One salient interpersonal factor is the partners' response to
56 FSIAD. For example, partners may respond more positively with warmth, kindness, compassion,
57 and patience, or they may respond more negatively with hostility, indifference, pessimism, and
58 impatience. In a community sample, when people anticipated that they would respond more
59 negatively to their own or their partner's sexual problem, they reported poorer sexual
60 functioning³⁰. In studies of genito-pelvic pain, which is typically accompanied by difficulties
61 with sexual desire and arousal, partner responses to painful intercourse are a robust predictor of
62 women's pain intensity as well as the sexual and relationship adjustment of affected couples³¹⁻³³.
63 Specifically, greater solicitous (e.g., sympathy) and negative (e.g., hostility) partner responses
64 are associated with more pain and anxiety and lower sexual and relationship satisfaction,
65 whereas greater facilitative partner responses (e.g., affection) are associated with better
66 outcomes. Similarly, more empathic partner responses have been linked to higher sexual and
67 relationship satisfaction and lower sexual distress for women with genito-pelvic pain and their
68 partners^{34, 35}.

69 In line with the Interpersonal Emotion Regulation Model of Sexual Dysfunction, partner
70 responses to FSIAD that are more supportive and validating may allow couples to better process
71 their emotional reactions (e.g., reduced threat value) and cope with the related stressors (e.g.,
72 conflict over sex) by using more adaptive (e.g., problem-solving, acceptance) emotion regulation
73 strategies²⁸. In contrast, more negative and invalidating partner responses interfere with couples'
74 emotion regulation by making couples more sensitive and reactive to the stressors (e.g.,
75 heightened catastrophizing) and promoting the use of less adaptive emotion regulation strategies
76 (e.g., avoidance, emotional suppression). In turn, individual and couple co-regulation of
77 emotions are thought to affect couples' adjustment to FSIAD ²⁸

78 **Aims**

79 The aim of the current study was to examine the cross-sectional and longitudinal
80 associations between partner responses to women's low sexual interest/arousal—as perceived by
81 women and reported by their partners—and the sexual (desire, distress, satisfaction), relational
82 (satisfaction), and psychological (anxiety) well-being of women diagnosed with FSIAD and their
83 partners. We hypothesized that more positive partner responses to women's low sexual
84 interest/arousal (e.g. warm, patient, loving) relative to negative partner responses (e.g., hostile,
85 indifferent, judgmental) would be associated with greater well-being for both members of the
86 couple. Examining partner responses to FSIAD may improve understanding of the interpersonal
87 context of this disorder and inform treatment targets for future couples-based interventions.

88 **Methods**

89 **Participants**

90 Participants were recruited via online and social media advertisements, flyers, and word-
91 of-mouth from September 2016 to May 2018¹. To be eligible, couples were required to be at
92 least 18 years of age, in a committed relationship of six months or more, either living together or
93 with a minimum of four in-person contacts per week, fluent in English, and both members of the
94 couple had to agree to participate. One member of the couple had to meet the diagnostic criteria
95 for FSIAD as defined by the DSM-5 and determined via a clinical interview, described below in
96 *Procedure*. Exclusion criteria were low sexual interest/arousal attributed to another psychiatric or
97 medical condition or medication; undergoing hormonal therapy with the exception of hormone-
98 based contraceptives; no previous sexual experience; and being pregnant, breastfeeding, or one
99 year postpartum. There were no additional exclusion criteria for the partners of women with
100 FSIAD.

101 The laboratory was contacted by 220 individuals who completed an initial telephone
102 screening for eligibility. Of 175 women who were potentially eligible following this screening
103 call, 146 completed the clinical interview and 26 were no longer interested. After the clinical
104 interview, 23 women were not diagnosed with FSIAD and were therefore ineligible, and one
105 eligible participant chose to withdraw before providing data. Thirty-two eligible couples were
106 excluded from the final analyses because only one partner completed the survey ($n = 5$), one or
107 both members of the couple did not complete the measure of partner responses to low sexual
108 interest/arousal ($n = 8$), or the research team found evidence of invalid reporting (e.g., one or

¹ Of the sample, 25.8% ($n = 25$) were recruited from the following social media sites: Reddit ($n = 6$); Facebook ($n = 9$); Instagram ($n = 3$); Bunz ($n = 6$); and Twitter ($n = 1$). Another 37.1% were recruited from online classifieds posted on Kijiji ($n = 32$) and Craigslist ($n = 4$). In addition, 10.3% ($n = 10$) of the sample was recruited from word of mouth, which included hearing about the study via a radio interview ($n = 1$); university lecture ($n = 1$); from their partner ($n = 3$); from a friend ($n = 2$); and from their physician ($n = 3$). We recruited 21.7% ($n = 21$) via flyers that were posted around university campuses, sexual health clinics, and community bulletin boards. Finally, 5.2% ($n = 5$), were recruited from other sources, which included the following general internet search ($n = 2$); and unknown ($n=3$).

109 both partners failed attention checks embedded within the survey; $n = 20$). The final sample was
110 89 couples (see Table 1 for participant characteristics). One year later, eight couples reported that
111 they had broken up and at least one member from 66 couples completed the follow-up survey,
112 indicating a retention rate of 74%. There were six instances where only one member completed
113 the measures, resulting in a final sample of 60 couples at Time 2.

114 **Measures**

115 **Sociodemographics.** Participants reported their age, gender, sexual orientation, sexual
116 frequency, education, and race/ethnicity. Women with FSIAD also reported their relationship
117 status (i.e., dating, living together or married) and length, household income and duration of the
118 low desire/arousal problem. Couple-level averages were calculated for sexual frequency (defined
119 as giving and receiving manual and oral stimulation, and vaginal intercourse) and relationship
120 duration.

121 **Response to sexual difficulties.** The Response to Sexual Difficulties Scale (RSDS³⁰) was
122 used to measure women's perception of their partners' responses to their low sexual
123 interest/arousal, as well as partners' reports of their own responses to the FSIAD. The
124 instructions of the RSDS were modified to refer specifically to FSIAD (rather than any sexual
125 difficulty). The measure consists of 23 bipolar items that tap into affective and interpersonal
126 responses (e.g., hostile-warm, indifferent-compassionate, harsh-kind, judgmental-understanding)
127 and asks participants to choose the most suitable point on a 7-point Likert-scale where 1 = a
128 more negative reaction, 4 = neutral, and 7 = a more positive reaction. Total scores range from 23
129 to 161 with higher scores indicating more positive responses. The RSDS has been shown to have
130 strong reliability and validity in community samples³⁰. Cronbach's alpha for the RSDS scale
131 used in this study was 0.96 for women with FSIAD and 0.95 for partners at Time 1.

132 **Sexual desire.** The Sexual Desire Inventory (SDI-2) is a well-validated 14-item
133 questionnaire used to assess solitary, partner-focused, and other-focused sexual desire^{36, 37}. The
134 solitary subscale (four items) includes three items that assess sexual desire for sexual behavior
135 with oneself and one item that assesses frequency, whereas the partner-focused subscale (seven
136 items) includes five items that assess sexual desire for the partner and two items on the frequency
137 of a partner-focused sexual thought or desired sexual behavior. Items are responded to on Likert-
138 type scales with higher scores indicating higher sexual desire. Scores range from 0 to 31 on the
139 solitary and 0 to 54 on the partner-focused subscales, with higher scores indicated higher sexual
140 desire. Cronbach's alpha for solitary sexual desire was 0.91 for women with FSIAD and 0.90 for
141 partners at Time 1, and 0.90 for women with FSIAD and 0.88 for partners at Time 2. Cronbach's
142 alpha for partner-focused sexual desire was 0.78 for women and 0.86 for partners at Time 1, and
143 0.85 for women with FSIAD and 0.84 for partners at Time 2.

144 **Relationship satisfaction.** The 16-item Couples Satisfaction Index (CSI³⁸) measures the
145 perceived quality of the overall relationship and has been shown to have strong convergent and
146 construct validity relative to other measures of relationship satisfaction. Using Likert-type scales,
147 participants rate different aspects of their relationship satisfaction, such as happiness in their
148 relationship, whether they feel their relationship is better than others, and how often they
149 disagree with their partner. Scores range from 0 to 81, where higher scores represent higher
150 relationship satisfaction. Cronbach's alpha in the current sample was 0.97 for women with
151 FSIAD and 0.96 for partners, and 0.97 for women with FSIAD and 0.98 for partners at Time 2.

152 **Sexual satisfaction.** The Global Measure of Sexual Satisfaction (GMSEX³⁹) is a well
153 validated measure of sexual satisfaction—that is the overall evaluation of the positive and
154 negative aspects of the sexual relationships—in which participants select the number that best

155 describes their sexual relationship on a 7-point scale using 5 bipolar items (e.g., very bad-very
156 good; unsatisfying-satisfying). Scores can range from 5 to 35, with higher scores indicating
157 greater sexual satisfaction. Cronbach's alpha at Time 1 was 0.88 for women with FSIAD and
158 0.92 for their partners, and 0.93 for women with FSIAD and 0.95 for partners at Time 2.

159 **Sexual distress.** Distress associated with the sexual relationship was measured with the
160 13-item Female Sexual Distress Scale-Revised (FSDS-R⁴⁰). Using a 5 point scale of 1 = never to
161 5 = always, participants indicate how often they experience sexual distress. The FSDS-R has
162 been shown to have good discriminant validity and high test-retest reliability. The scale total
163 scores range from 13 to 66 and higher scores indicate more distress. Although the FSDS-R was
164 originally developed to measure sexual distress in women, the items are gender-neutral and it has
165 been validated for use in men⁴¹. Cronbach's alpha was 0.92 for women with FSIAD and 0.93 for
166 partners at Time 1, and 0.95 for women with FSIAD and 0.94 for partners at Time 2.

167 **Anxiety.** Anxiety was measured with a six-item short-form of the trait subscale of the
168 State-Trait Anxiety Inventory (STAI-6⁴²). The STAI-6 assesses how frequently participants feel
169 symptoms of anxiety on a Likert-scale from 1 = almost never to 4 = always. Total scores can
170 range from 6 to 24 and higher scores indicate greater anxiety. This abbreviated version of the
171 STAI has been shown to have good reliability and validity⁴². Cronbach's alpha in this sample
172 was 0.88 for women with FSIAD and 0.85 for partners, and 0.86 for both women with FSIAD
173 and partners at Time 2.

174 **Procedure**

175 This study was part of a larger study investigating the role of interpersonal factors in
176 couples coping with FSIAD. Results of additional studies using this sample have been published,
177 focusing on differences between couples affected by FSIAD and control couples, sexual

178 motivation, and emotion regulation (*blinded*^{16, 25-27}). Interested participants completed a
179 structured telephone screening with a research assistant to assess initial eligibility. Those who
180 met basic eligibility criteria were then scheduled for a semi-structured clinical interview via
181 telephone (approximately 45 minutes) with a clinical psychologist or clinical psychology PhD
182 student to confirm the diagnosis of FSIAD. The clinical interview was modeled after prior
183 studies^{15, 43} and revised based on the clinical expertise of the research team. It can be found at the
184 following Open Science Framework (OSF) link:
185 https://osf.io/g9zxy/?view_only=c9867816618142ee828e9f7aff0010ac. Eligible women were
186 asked to confirm their partners' eligibility and willingness to participate. Couples were then e-
187 mailed individual links to the online consent form and survey, hosted via secure Qualtrics
188 software, which took approximately 60 to 75 minutes to complete. Couples were instructed to
189 complete their surveys independently from each other. Participants who did not complete the
190 survey within one week received a reminder phone call. Reminder emails were sent two and
191 three weeks thereafter, and the survey expired four weeks after being sent to participants. Each
192 partner was compensated with an \$18 CAD Amazon gift card. Participants were provided
193 information on treatment resources.

194 **Data Analysis**

195 The deidentified data and accompanying syntax can be found on the OSF page for this
196 project: https://osf.io/g9zxy/?view_only=c9867816618142ee828e9f7aff0010ac. All analyses
197 were conducted with SPSS 26.0. Intercorrelations among study variables, both within-person (for
198 women and partners respectively) and between women and partners were analyzed with Pearson
199 correlations. The associations between women and partners' perceptions of partner responses to
200 low interest/arousal and outcome variables were analyzed using multilevel modeling guided by

201 the Actor-Partner Interdependence Model (APIM;⁴⁴). The APIM identifies actor effects (e.g., the
202 association between women's perception of partner responses and women's own sexual
203 satisfaction) as well as partner effects (e.g., the association between women's perception of
204 partner responses and their partner's sexual satisfaction). A two-level modelling technique that
205 nests individual data (level 1) within dyads (level 2) was used to account for the non-
206 independence of dyadic data⁴⁴. All predictors in the models were grand-mean centered and
207 represent between-person differences. Coefficients (*b*) are unstandardized and can be interpreted
208 as the change in the dependent variable for every one-unit change in the participant's average
209 predictor value. Separate models were conducted for each of the six outcomes (solitary sexual
210 desire, partner-focused sexual desire, relationship satisfaction, sexual satisfaction, sexual
211 distress, and anxiety). Figure 1 depicts the model being tested using sexual satisfaction as an
212 example.

213 Next, to test for longitudinal effects, we ran paired sample t-tests to examine the change
214 in outcomes from Time 1 to Time 2 for women and partners separately. We then tested whether
215 the grand-mean centered Time 1 predictors (i.e., women with FSIAD's perception of partner
216 responses to their low sexual interest/arousal and partners' perception of their own responses)
217 were associated with their own outcomes at Time 2, while accounting for outcome variables at
218 Time 1. Only women with FSIAD showed significant changes in their outcomes (see Results),
219 and therefore all longitudinal analyses were conducted using multiple regression models.

220 We conducted bivariate correlations for age, education, relationship length, sexual desire
221 problem duration, and sexual frequency at Time 1 and 2 with dependent variables at Time 1 and
222 2 for the whole sample, women and partners together. Frigon and Laurencelle⁴⁵ have
223 recommended retaining covariates with correlations greater than or equal to .3. Sexual frequency

224 was the only potential covariate to correlate with predictor or outcome variables above 0.3
225 (sexual satisfaction T1, $r = .35, p < .001$; sexual satisfaction T2, $r = .47, p < .001$; relationship
226 satisfaction T2; $r = .36, p < .001$) and therefore was retained as a covariate for all models.

227 **Results**

228 **Cross-sectional Analyses**

229 Descriptive characteristics of the sample are reported in Table 1, and descriptive statistics
230 for predictor and outcome variables are reported in Table 2. All bivariate correlations between
231 predictor and outcome variables of women with FSIAD and of their partners, and between
232 women with FSIAD and their partners, are reported in Table 3. Women's perceptions of partner
233 responses and partner's report of their own responses were moderately correlated ($r = .34, p <$
234 $.01$). A paired-sample t-test revealed that women's perceptions were significantly less positive
235 than partners' report of their own responses ($t(88) = -2.2, p < .05$).

236 Actor and partner effects for the APIM analyses for each outcome variable are presented
237 in Table 4. Regarding sexual wellbeing, when women perceived more positive partner responses,
238 they had greater sexual satisfaction. Partners who reported more positive responses to low
239 interest/arousal also had greater sexual satisfaction. Partners who perceived their responses to
240 women's low interest/arousal as more positive were less sexually distressed. For sexual desire,
241 there were no significant associations for women or partners, for both solitary and dyadic desire
242 subscales. When women perceived partners as responding more positively relative to negatively
243 to their low sexual interest/arousal, they had greater relationship satisfaction. When partners
244 reported more positive responses to women's low interest/arousal, partners had greater
245 relationship satisfaction. Finally, when women perceived more positive partner responses, both

246 women with FSIAD and their partners reported less anxiety. Partners' reports of more positive
247 responses were also associated with their own (but not women's) lower anxiety.

248 When including sexual frequency as a covariate in the models, all effects remained
249 significant except for the association between women's perception of partner responses to low
250 interest/arousal and their own sexual satisfaction, which became marginal ($p = .053$).

251 **Exploratory Mediation Analyses**

252 Contrary to our hypothesis, partners' reports of their responses were not associated with
253 women's outcomes (i.e., no evidence of partner effects for women with FSIAD). Coupled with
254 the relatively low correlation between women's perception of partner responses and partners'
255 report of their own responses, these results led us to consider whether partners' responses might
256 be associated with women's outcomes only in so much as women *perceive* these responses to be
257 more positive relative to negative. Thus, we conducted exploratory mediation analyses to
258 examine if the effects of partners' responses as reported by partners on women's outcomes were
259 mediated by women's perceptions of partner responses.

260 Because we were interested in this specific pathway, we utilized simple mediation
261 analysis, conducted using ordinary least squares path analysis in the PROCESS macro for
262 SPSS⁴⁶. This analysis revealed two significant indirect effects, as evidenced by a confidence
263 interval based on 10,000 bootstrap samples that did not include zero. We found two indirect
264 effects of partners' positive responses on women's higher relationship satisfaction, $b = 0.11$, 95%
265 CI = [0.040, 0.186] and lower anxiety, $b = -0.018$, 95% CI = [-0.039, -0.004] through women's
266 perceptions of positive partner responses. There were no other significant indirect effects for
267 partner responses on women with FSIAD's outcomes through women with FSIAD's perception
268 of partner responses.

269 Longitudinal Analyses

270 To determine if there were changes over time in the outcome measures, we conducted
271 paired-sample t-tests to compare solitary and dyadic sexual desire, sexual satisfaction, sexual
272 distress, relationship satisfaction and anxiety at Time 1 to Time 2 (one-year follow-up) for
273 women with FSIAD and their partners who were still in a relationship. Given that some couples
274 did not complete Time 2 or reported ending their relationship and were excluded from the Time
275 2 data, they were also excluded from the Time 1 data in the paired-samples t-test analyses. Thus,
276 the following means and standard deviations for variables at Time 1 differ slightly from the
277 values reported in Table 2. There were no significant differences in any outcome variable for
278 women ($n = 63$) or partners ($n = 63$) who completed Time 2 versus those who did not ($n = 23$
279 respectively). Overall, for women with FSIAD, there was a significant increase in dyadic sexual
280 desire from Time 1 to Time 2 ($MD = -4.0$, $SD_1 = 8.1$, $SD_2 = 9.9$, $t(65) = -3.3$, $p < .01$), a
281 significant increase in sexual satisfaction from Time 1 to Time 2 ($MD = -1.6$, $SD_1 = 5.5$, $SD_2 =$
282 6.6 , $t(65) = -2.0$, $p < .05$), and a significant decrease in sexual distress from Time 1 to Time 2
283 ($MD = 6.6$, $SD_1 = 9.1$, $SD_2 = 11.2$, $t(65) = 5.1$, $p < .001$). There were no other significant
284 differences between Time 1 and Time 2 for women with FSIAD, and no significant differences
285 for partners.

286 Next, we tested the effects of women with FSIAD's perception of partner responses to
287 low interest/arousal and partners' reports of their own responses at Time 1 on the outcomes that
288 differed at Time 2—dyadic sexual desire, sexual satisfaction and sexual distress for women with
289 FSIAD only. As reported in Table 5, after accounting for each respective outcome at Time 1, we
290 did not find any effects between partner responses to low interest/arousal at Time 1 and women's
291 dyadic sexual desire, sexual satisfaction and sexual distress at Time 2.

Discussion

292
293 In the current study, we examined associations between women's perceptions of how
294 their partner responds to their low sexual desire/arousal and partners' own reports of their
295 responses, and the sexual, relational, and psychological adjustment of couples coping with
296 FSIAD. At Time 1, more positive partner responses to women's low sexual desire (e.g., warm,
297 compassion, understanding) relative to negative partner responses (e.g., hostile, indifferent,
298 pessimistic) were associated with one's own greater sexual, relational, and psychological
299 wellbeing. However, partners' responses did not predict change in wellbeing over time for either
300 partner. The cross-sectional results are consistent with research findings in other sexual
301 dysfunctions, such as genito-pelvic pain, which have demonstrated that partner responses to
302 women's pain during intercourse are linked to couples' adjustment^{31, 33, 47, 48}. Together with
303 evidence that partners of women with FSIAD also report negative impacts to their sexuality and
304 relationships relative to partners of women without sexual dysfunction¹⁶, the current results
305 support theoretical and clinical approaches that integrate an interpersonal perspective^{14, 28}.

306 Cross-sectionally, when women perceived their partner to respond more positively to
307 their low desire/arousal relative to more negative responses they were more satisfied with the
308 relationship and they and their partners reported lower anxiety. Women who perceive their
309 partners' responses as more positive are likely to feel more validated and supported in the
310 context of the low desire problem. Such responses create a more secure relational environment
311 and may buffer against the perceived threat to the relationship created by FSIAD, helping temper
312 associated feelings of anxiety for both partners. Many studies have documented that perceiving a
313 partner to be more responsive globally in the relationship is a robust contributor to promoting
314 relationship wellbeing, including when faced with health and other sexual problems^{35, 49-51}. It is

315 also possible that individuals who are more anxious are more hypervigilant towards negativity,
316 and therefore more prone to interpreting partner responses in a negative light⁵².

317 Moreover, when partners reported that they had more positive relative to negative
318 responses to the woman's low desire/arousal, they had greater relationship and sexual
319 satisfaction and lower sexual distress and anxiety. Partners' more positive responses may trigger
320 and reinforce their own more adaptive coping with the woman's FSIAD, which is consistent with
321 operant learning models⁵³. Partner responsiveness has been found to increase pro-relationship
322 cognitive-affective responses (e.g., reduced defensiveness) and behavioral responses (e.g.,
323 support) that promote satisfaction in relationships⁴⁹. It could also be that the partners who are
324 less distressed about the sexual relationship and are more broadly satisfied have fewer negative
325 emotions related to FSIAD and therefore respond more positively.

326 Finally, the cross-sectional findings can be understood in light of Rosen and Bergeron's²⁸
327 Interpersonal Emotion Regulation Model of women's sexual dysfunction. Their model suggests
328 that when partners respond in a more supportive and soothing manner, the couple becomes less
329 sensitive and reactive to the low desire problem (e.g., views it as less threatening) and is
330 therefore capable of engaging in more adaptive and effective emotion regulation strategies such
331 as reappraisal and problem-solving. In a dyadic study, when women with FSIAD and their
332 partners reported fewer difficulties in regulating their negative emotions they reported less
333 anxiety and partners reported less sexual distress²⁷. In addition, greater use of cognitive
334 reappraisal and less use of emotional suppression was linked to lower anxiety and couple
335 conflict, and greater relationship satisfaction and sexual desire in the same study. Future research
336 should test whether enhanced emotion regulation accounts for the associations between partner
337 responses and couple outcomes in FSIAD using longitudinal data.

338 Women with FSIAD and their partners generally perceived partner responses to be more
339 positive than negative, as seen in their mean scores falling above the mid-point of the scale.
340 However, women's perceptions of positive partner responses were only moderately correlated to
341 partner reports of their own responses and were significantly lower than partners' reports. These
342 findings led us to consider whether partners' reports of their own responses may only be
343 associated with women with FSIAD's wellbeing to the extent that these responses are perceived
344 as such by the women themselves^{33, 54}. Indeed, more positive partner responses were indirectly
345 associated with women with FSIAD's greater relationship satisfaction and lower anxiety through
346 women with FSIAD's *perception* of more positive partner responses. Thus, although limited by
347 the cross-sectional nature of these analyses (i.e., no temporal precedence for mediation), we
348 found preliminary evidence that partner responses do indeed relate to women's outcomes, but
349 only inasmuch as women perceive them. These findings underscore the importance of assessing
350 the perspective of both members of the couple, and potentially working toward aligning the
351 perceptions of partner responses for both members affected by FSIAD.

352 Although couples coping with FSIAD appeared to benefit in other ways from positive
353 partner responses, such responses were unrelated to the core symptoms of FSIAD in women—
354 that is, their sexual desire and sexual distress. Meeting the diagnostic criteria for inclusion in the
355 study and the measurement of these symptoms may not have detected subtle changes in desire
356 and distress due to the initially very low sexual desire and high sexual distress of the women
357 with FSIAD. In other words, we had a restricted range of women's sexual desire and sexual
358 distress, resulting in limited variance available to predict from partner responses. Moreover, we
359 assessed women's global feelings of sexual desire (solitary and for their partner) that may better
360 reflect and be interpreted by our participants as *spontaneous sexual desire*. In contrast, we did

361 not assess their experience of *responsive sexual desire*. Responsive sexual desire refers to desire
362 that emerges following feelings of sexual arousal resulting from exposure to sexual stimuli that
363 are meaningful to the person^{55, 56}. As responsive sexual desire is thought to be more sensitive to
364 context and interpersonal cues (e.g., feelings of intimacy and closeness) and be especially
365 relevant for women with clinically low desire^{12, 57}, future studies should test its associations with
366 partner responses.

367 Partner responses to women's low sexual desire/arousal did not predict *change* in
368 outcomes over time. Women with FSIAD reported significantly higher partner-focused sexual
369 desire and sexual satisfaction and lower sexual distress one year later suggesting that there was
370 some improvement in core FSIAD symptoms over time, which is consistent with patterns
371 observed among women with genito-pelvic pain/penetration disorder⁵⁸. Couples who were lost to
372 attrition did not differ from the included couples on study variables at Time 1, suggesting that
373 improvements over time were not being driven by the more distressed couples dropping out.
374 Moreover, only 6 women (9%) at Time 2 reported accessing formal treatment during the one-
375 year period (4 women tried therapy, 2 women tried topical hormonal treatments). It is possible
376 that improvements over time may have resulted from couples accessing self-help resources,
377 and/or from their participation in the research itself (e.g., gaining insight into the problem,
378 enhanced communication about their sexual relationship, feeling united as a team to work on the
379 low desire after participating together in the study). Still, improvement over time was unrelated
380 to partner responses to women's low desire. One strong possibility is that we were underpowered
381 to detect predictors of these longitudinal effects. This possibility is bolstered by the pattern of
382 correlations between partner responses at Time 1 and outcomes one year later, which were all in
383 the expected direction though not all significant. Future research will require a larger sample size

384 to draw firmer conclusions regarding whether or not partner responses can predict change in
385 FSIAD symptoms and associated consequences over time.

386 One important point of consideration relates to the measure of partner responses used in
387 this study. This validated partner response measure was designed to assess a range of partner
388 responses on a positive to negative bi-polar scale. Use of a bi-polar scale restricts the possibility
389 that positively and negatively valanced reactions might occur simultaneously (e.g., a partner
390 could express feeling hurt and also compassion for the woman's experience at the same time).
391 The measure also does not provide nuance beyond the positive-negative dimension. It is
392 possible, for example, that some negative responses (e.g., hostility, insensitivity) could be more
393 impactful than others (e.g., indifference or worry). However, the measure has very high internal
394 consistency suggesting that the items hold together well and tap into one common underlying
395 construct³⁰.

396 The measure also does not capture other possible partner responses, including behavioral
397 responses such as avoidance of sexual activity, demonstrations of affection, or other things that
398 partners may do to try and promote sexual desire or arousal. In genito-pelvic pain, the most
399 commonly studied partner response measure combines both affective and behavioral responses
400 into *solicitous*, *negative*, and *facilitative* partner responses as defined earlier; these response
401 types demonstrate differential associations with women's pain and couples' associated
402 adjustment²⁸. In recent research with community couples, four types of partner responses to
403 sexual rejection (i.e., a partner declining one's interest in sexual activity) were identified that
404 include cognitive-affective and behavioral responses: *understanding* (responsiveness and
405 reaffirming positive regard for a partner), *resentful* (expressing anger and trying to make a
406 partner feel bad), *insecure* (responding with hurt feelings or sadness), and *enticing* (re-initiating

407 sex and attempting to change a partner's mind)⁵⁹. This measure is specific to partner responses to
408 sex being turned down, whereas in the current study we examined partners' general responses to
409 women's low sexual desire/arousal. Still, how partner responses to sexual rejection shape sexual
410 and relationship outcomes have not been studied and seems highly relevant in the context of
411 FSIAD where sexual desire discrepancies are higher than among other couples as are the
412 frequency of sexual rejection interactions. Future studies should examine a broader spectrum of
413 partner responses to FSIAD while acknowledging potential variability within-person (e.g., by
414 using a daily experience study design).

415 Although this study was inclusive of sex and gender diverse couples, the majority of the
416 sample identified as heterosexual and were in mixed-sex relationships, limiting generalizability.
417 Another limitation is the possibility of a selection bias, particularly given that both members of
418 the couple were required to participate; more distressed couples may be less likely to participate
419 in sexual dysfunction research⁶⁰ and be more likely to break-up and drop-out of longitudinal
420 studies.

421 **Conclusions**

422 Whereas medical interventions are costly, have adverse side effects, and have received
423 limited empirical support in the treatment of FSIAD thus far^{61, 62}, there is promising support for
424 psychological treatments^{43, 63-67}. Yet, there is almost no empirical evidence to inform targets for
425 couple-based interventions, and consequently, there are very few empirically supported couple
426 treatments. The current study established a novel interpersonal factor—partner responses—that
427 could be targeted in cognitive-behavioral or emotion-focused psychological approaches to
428 treating FSIAD. Specifically, interventions could focus on enhancing awareness of how partner
429 responses relate to couple adjustment to FSIAD, more adaptive communication of negative

430 partner responses and processing of these emotions, and facilitating the experience and
431 expression of more positive partner responses in a way that is authentic for the couple.

References

- [1] American Psychiatric Association. *Diagnostic and statistical manual of mental disorders*. 5th ed. Washington, DC: American Psychiatric Publishing; 2013.
- [2] Doss BD, Simpson LE, Christensen A. Why do couples seek marital therapy? *Prof Psychol: Res Pract*. 2004;**35**: 608-14.
- [3] Rosen RC. Prevalence and risk factors of sexual dysfunction in men and women. *Curr Psychiatry Rep*. 2000;**2**: 189-95.
- [4] Rosen RC, Shifren JL, Monz BU, Odom DM, Russo PA, Johannes CB. Correlates of sexually related personal distress in women with low sexual desire. *J Sex Med*. 2009;**6**: 1549-60.
- [5] Mitchell KR, Jones KG, Wellings K, et al. Estimating the Prevalence of Sexual Function Problems: The Impact of Morbidity Criteria. *J Sex Res*. 2016;**53**: 955-67.
- [6] Shifren JL, Monz BU, Russo PA, Segreti A, Johannes CB. Sexual problems and distress in United States women: prevalence and correlates. *Obstet Gynecol*. 2008;**112**: 970-8.
- [7] Mitchell KR, Mercer CH, Ploubidis GB, et al. Sexual function in Britain: findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3). *Lancet*. 2013;**382**: 1817-29.
- [8] West SL, D'Aloisio AA, Agans RP, Kalsbeek WD, Borisov NN, Thorp JM. Prevalence of low sexual desire and hypoactive sexual desire disorder in a nationally representative sample of US women. *Arch Intern Med*. 2008;**168**: 1441-9.
- [9] Bitzer J, Giraldi A, Pfaus J. Sexual desire and hypoactive sexual desire disorder in women. Introduction and overview. Standard operating procedure (SOP Part 1). *J Sex Med*. 2013;**10**: 36-49.

- [10] Brotto LA, Luria M. Sexual interest/arousal disorder in women. In: Binik YM, Hall K, eds. *Principles and Practice of Sex Therapy*. 5 edn. New York: The Guilford Press; 2014.
- [11] Mark KP, Lasslo JA. Maintaining Sexual Desire in Long-Term Relationships: A Systematic Review and Conceptual Model. *J Sex Res*. 2018;**55**: 563-81.
- [12] Basson R. Using a different model for female sexual response to address women's problematic low sexual desire. *J Sex Marital Ther*. 2001;**27**: 395-403.
- [13] Perel E. *Mating in captivity: Unlocking erotic intelligence*. New York, NY: Harper Collins; 2007.
- [14] McCarthy B, Koman CA, Cohn D. A psychobiosocial model for assessment, treatment, and relapse prevention for female sexual interest/arousal disorder. *Sex Relation Ther*. 2018;**33**: 353-63.
- [15] Sarin S, Amsel R, Binik YM. A Streetcar Named "Derousal"? A Psychophysiological Examination of the Desire-Arousal Distinction in Sexually Functional and Dysfunctional Women. *J Sex Res*. 2016;**53**: 711-29.
- [16] Rosen NO, Dubé JP, Corsini-Munt S, Muise A. Partners Experience Consequences, Too: A Comparison of the Sexual, Relational, and Psychological Adjustment of Women with Sexual Interest/Arousal Disorder and Their Partners to Control Couples. *J Sex Med*. 2019;**16**: 83-95.
- [17] Stephenson KR, Meston CM. Why is impaired sexual function distressing to women? The primacy of pleasure in female sexual dysfunction. *J Sex Med*. 2015;**12**: 728-37.
- [18] Witting K, Santtila P, Varjonen M, et al. Female sexual dysfunction, sexual distress, and compatibility with partner. *J Sex Med*. 2008;**5**: 2587-99.

- [19] Hayes RD, Dennerstein L, Bennett CM, Sidat M, Gurrin LC, Fairley CK. Risk factors for female sexual dysfunction in the general population: exploring factors associated with low sexual function and sexual distress. *J Sex Med.* 2008;**5**: 1681-93.
- [20] Goldstein I, Fisher WA, Sand M, et al. Women's sexual function improves when partners are administered vardenafil for erectile dysfunction: A prospective, randomized, double-blind, placebo-controlled trial. *J Sex Med.* 2005;**2**: 819-32.
- [21] Diamond LM. Emerging perspectives on distinctions between romantic love and sexual desire. *Curr Dir Psychol Sci.* 2004;**13**: 116-19.
- [22] van Lankveld J, Hubben D, Dewitte M, Dingemans ME, den Butter C, Grauvogl A. The Partner's presence in the sex research lab differentially affects sexual arousal in women and men. *J Sex Med.* 2014;**11**: 697-708.
- [23] Guthrie JR, Dennerstein L, Taffe JR, Lehert P, Burger HG. The menopausal transition: a 9-year prospective population-based study. The Melbourne Women's Midlife Health Project. *Climacteric.* 2004;**7**: 375-89.
- [24] Brotto LA, Petkau AJ, Labrie F, Basson R. Predictors of sexual desire disorders in women. *J Sex Med.* 2011;**8**: 742-53.
- [25] Raposo S, Rosen NO, Muise A. Self-expansion is associated with greater relationship and sexual well-being for couples coping with low sexual desire. *J Soc Pers Relatsh.* 2019;**37**: 602-23.
- [26] Hogue JV, Rosen NO, Bockaj A, Impett EA, Muise A. Sexual communal motivation in couples coping with low sexual interest/arousal: Associations with sexual well-being and sexual goals. *PLoS One.* 2019;**14**: e0219768.

- [27] Dubé JP, Corsini-Munt S, Muise A, Rosen NO. Emotion Regulation in Couples Affected by Female Sexual Interest/Arousal Disorder. *Arch Sex Behav*. 2019;**48**: 2491-506.
- [28] Rosen NO, Bergeron S. Genito-Pelvic Pain Through a Dyadic Lens: Moving Toward an Interpersonal Emotion Regulation Model of Women's Sexual Dysfunction. *J Sex Res*. 2019;**56**: 440-61.
- [29] Fisher WA, Eardley I, McCabe M, Sand M. Erectile Dysfunction (ED) is a Shared Sexual Concern of Couples II: Association of Female Partner Characteristics with Male Partner ED Treatment Seeking and Phosphodiesterase Type 5 Inhibitor Utilization. *J Sex Med*. 2009;**6**: 3111-24.
- [30] Fallis EE, Purdon C, Rehman US. Development and validation of the response to sexual difficulties scale. *Arch Sex Behav*. 2013;**42**: 67-79.
- [31] Rosen NO, Muise A, Bergeron S, Delisle I, Baxter ML. Daily associations between partner responses and sexual and relationship satisfaction in couples coping with provoked vestibulodynia. *J Sex Med*. 2015;**12**: 1028-39.
- [32] Rosen NO, Bergeron S, Sadikaj G, Glowacka M, Baxter M, Delisle I. Relationship satisfaction moderates the associations between male partner responses and depression in women with vulvodynia: A dyadic daily experience study. *Pain*. 2014;**155**: 1374-83.
- [33] Rosen NO, Bergeron S, Sadikaj G, Glowacka M, Delisle I, Baxter ML. Impact of male partner responses on sexual function in women with vulvodynia and their partners: a dyadic daily experience study. *Health Psychol*. 2014;**33**: 823-31.
- [34] Bois K, Bergeron S, Rosen N, Mayrand MH, Brassard A, Sadikaj G. Intimacy, sexual satisfaction, and sexual distress in vulvodynia couples: An observational study. *Health Psychol*. 2016;**35**: 531-40.

- [35] Rosen NO, Bois K, Mayrand MH, Vannier S, Bergeron S. Observed and Perceived Disclosure and Empathy Are Associated With Better Relationship Adjustment and Quality of Life in Couples Coping With Vulvodynia. *Arch Sex Behav*. 2016;**45**: 1945-56.
- [36] Spector IP, Carey MP, Steinberg L. The sexual desire inventory: development, factor structure, and evidence of reliability. *J Sex Marital Ther*. 1996;**22**: 175-90.
- [37] Moyano N, Vallejo-Medina P, Sierra JC. Sexual Desire Inventory: Two or Three Dimensions? *J Sex Res*. 2017;**54**: 105-16.
- [38] Funk JL, Rogge RD. Testing the ruler with item response theory: increasing precision of measurement for relationship satisfaction with the Couples Satisfaction Index. *J Fam Psychol*. 2007;**21**: 572-83.
- [39] Lawrance KA, Byers ES. Sexual satisfaction in long-term heterosexual relationships: The interpersonal exchange model of sexual satisfaction. *Pers Relationships*. 1995;**2**: 267-85.
- [40] Derogatis LR, Rosen R, Leiblum S, Burnett A, Heiman J. The Female Sexual Distress Scale (FSDS): initial validation of a standardized scale for assessment of sexually related personal distress in women. *J Sex Marital Ther*. 2002;**28**: 317-30.
- [41] Santos-Iglesias P, Mohamed B, Danko A, Walker LM. Psychometric Validation of the Female Sexual Distress Scale in Male Samples. *Arch Sex Behav*. 2018;**47**: 1733-43.
- [42] Marteau TM, Bekker H. The development of a six-item short-form of the state scale of the Spielberger State-Trait Anxiety Inventory (STAI). *Br J Clin Psychol*. 1992;**31**: 301-6.
- [43] Paterson LQP, Handy AB, Brotto LA. A Pilot Study of Eight-Session Mindfulness-Based Cognitive Therapy Adapted for Women's Sexual Interest/Arousal Disorder. *J Sex Res*. 2017;**54**: 850-61.

- [44] Kenny DA, Kashy DA, Cook WL. *Dyadic Data Analysis*. New York: Guilford Press; 2006.
- [45] Frigon JY, Laurencelle L. Analysis of Covariance - a Proposed Algorithm. *Educ Psychol Meas*. 1993;**53**: 1-18.
- [46] Hayes AF. *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. Second edition. ed. New York: New York: Guilford Press; 2018.
- [47] Rosen NO, Bergeron S, Sadikaj G, Delisle I. Daily Associations Among Male Partner Responses, Pain During Intercourse, and Anxiety in Women With Vulvodynia and Their Partners. *J Pain*. 2015;**16**: 1312-20.
- [48] Rosen NO, Bergeron S, Sadikaj G, Glowacka M, Baxter ML, Delisle I. Relationship satisfaction moderates the associations between male partner responses and depression in women with vulvodynia: a dyadic daily experience study. *Pain*. 2014;**155**: 1374-83.
- [49] Reis HT, Gable SL. Responsiveness. *Curr Opin Psychol*. 2015;**1**: 67-71.
- [50] Slatcher RB, Selcuk E, Ong AD. Perceived Partner Responsiveness Predicts Diurnal Cortisol Profiles 10 Years Later. *Psychol Sci*. 2015;**26**: 972-82.
- [51] Rosen NO, Mooney K, Muise A. Dyadic empathy in the transition to parenthood: Associations with sexual, relationship, and psychological wellbeing. *J Sex Marital Ther*. 2016;**43**: 543-59.
- [52] Cano A, Barterian JA, Heller JB. Empathic and nonempathic interaction in chronic pain couples. *Clin J Pain*. 2008;**24**: 678-84.
- [53] Fordyce WE. *Behavioral methods for chronic pain and illness*. St. Louis: CV Mosby; 1976.

- [54] Visserman ML, Impett EA, Righetti F, Muise A, Keltner D, Van Lange PAM. To “See” Is to Feel Grateful? A Quasi-Signal Detection Analysis of Romantic Partners’ Sacrifices. *Soc Psychol Personal Sci.* 2019;**10**: 317-25.
- [55] Toates F. An integrative theoretical framework for understanding sexual motivation, arousal, and behavior. *J Sex Res.* 2009;**46**: 168-93.
- [56] Laan E, Both S. What makes women experience desire? *Fem Psychol.* 2008;**18**: 505-14.
- [57] Nowosielski K, Wrobel B, Kowalczyk R. Women's Endorsement of Models of Sexual Response: Correlates and Predictors. *Arch Sex Behav.* 2016;**45**: 291-302.
- [58] Davis SNP, Bergeron S, Binik YM, Lambert B. Women with provoked vestibulodynia experience clinically significant reductions in pain regardless of treatment: Results from a 2-year follow-up study. *The Journal of Sexual Medicine.* 2013;**10**: 3080-87.
- [59] Kim JJ, Horne RM, Muise A, Impett EA. Development and validation of the responses to sexual rejection scale. *Pers Individ Dif.* 2019;**144**: 88-93.
- [60] Corsini-Munt S, Rancourt KM, Dubé JP, Rossi MA, Rosen NO. Vulvodynia: a consideration of clinical and methodological research challenges and recommended solutions. *J Pain Res.* 2017;**10**: 2425-36.
- [61] Jaspers L, Feys F, Bramer WM, Franco OH, Leusink P, Laan ET. Efficacy and Safety of Flibanserin for the Treatment of Hypoactive Sexual Desire Disorder in Women: A Systematic Review and Meta-analysis. *JAMA Intern Med.* 2016;**176**: 453-62.
- [62] Hassan Saadat S, Panahi Y, Hosseinialhashemi M, Kabir A, Rahmani K, Sahebkar A. Systematic Review and Meta-analysis of Flibanserin's Effects and Adverse Events in Women with Hypoactive Sexual Desire Disorder. *Curr Drug Metab.* 2017;**18**: 78-85.

- [63] Brotto LA, Basson R. Group mindfulness-based therapy significantly improves sexual desire in women. *Behav Res Ther.* 2014;**57**: 43-54.
- [64] Brotto LA, Basson R, Luria M. A mindfulness-based group psychoeducational intervention targeting sexual arousal disorder in women. *J Sex Med.* 2008;**5**: 1646-59.
- [65] Fruhauf S, Gerger H, Schmidt HM, Munder T, Barth J. Efficacy of psychological interventions for sexual dysfunction: a systematic review and meta-analysis. *Arch Sex Behav.* 2013;**42**: 915-33.
- [66] Hurlbert DF, White LC, Powell RD, Apt C. Orgasm consistency training in the treatment of women reporting hypoactive sexual desire: an outcome comparison of women-only groups and couples-only groups. *J Behav Ther Exp Psychiatry.* 1993;**24**: 3-13.
- [67] Kleinplatz PJ, Paradis N, Charest M, et al. From Sexual Desire Discrepancies to Desirable Sex: Creating the Optimal Connection. *J Sex Marital Ther.* 2018;**44**: 438-49.

Table 1Descriptive characteristics for women with FSIAD and partners ($N = 89$ Couples).

Characteristic	Median (IQR) or n	SD or %
Age (years)		
Women	29.8 (25.3, 37.3)	7.9
Partners	30.2 (25.3, 37.7)	9.5
Biological sex of partner		
Male	81	91
Female	7	7.9
Intersex	1	1.1
Self-identified sexual orientation		
Women		
Straight/heterosexual	61	68
Bisexual	15	17
Other	13	15
Partners		
Straight/heterosexual	75	84
Bisexual	5	6
Other*	9	10
Self-reported race/ethnicity		
Women		
Asian American/Asian	6	6.7
Caucasian/White	69	78
East Indian	1	1.1
Hispanic/Latino/Latina	3	3.4
Middle Eastern/Central Asian	3	3.4
Biracial/Multiracial	3	3.4
Other [†]	4	4.5
Partners		
African American/Black	1	1.1
Asian American/Asian	7	7.9
Caucasian/White	71	80
East Indian	1	1.1
Hispanic/Latino/Latina	2	2.2
Middle Eastern/Central Asian	3	3.4
Biracial/Multiracial	2	2.2
Other [†]	2	2.2

Education (years)		
Women	16 (15, 18.5)	2.8
Partners	16 (14, 18)	3.5
Relationship status		
Married/common-law	49	55
Living together	26	29
Engaged	7	7.9
Dating	7	7.9
Relationship length (months)	65 (35, 120.5)	88.3
Sexual frequency [‡]	5 (3, 8)	4.1
Length of low desire problems (months)	40 (18, 72)	64.2
Combined annual income		
< \$40,000	26	29
\$40,000-79,000	32	36
> \$80,000	30	34
Missing/unstated	1	1.1

Note. *Other sexual orientation = pansexual, queer, or “other”. †Other race/ethnicity = Ashkenazi, Asian Canadian, Chinese Canadian, Mixed Black/ White, Portuguese, South Indian.

‡Sexual frequency = the number of sexual acts of giving or receiving oral or manual sex, and vaginal intercourse over the last 4 weeks.

Table 2

Descriptive statistics of predictor and outcome variables for women with FSIAD and partners

(Time 1, $N = 89$ couples; Time 2, $N = 66$ couples).

Variable	Time 1		Time 2	
	Mean (range)	SD	Mean (range)	SD
Response to sexual difficulties				
Women	106.6 (23-159)	29.0	-	-
Partners	113.7 (35-161)	24.8	-	-
Sexual desire – solitary				
Women	7.1 (0-27)	7.4	8.1 (0-24)	6.8
Partners	16.2 (0-31)	7.6	16.9 (0-39)	6.8
Sexual desire- dyadic				
Women	17.8 (0-43)	9.0	21.5 (2-47)	10.5
Partners	39.6 (6-54)	8.5	39.1 (14-54)	8.4
Relationship satisfaction				
Women	59.3 (21-80)	14.6	58.2 (18-80)	15.3
Partners	61.2 (24-81)	12.6	59.6 (13-81)	16.4
Sexual satisfaction				
Women	21.1 (5-35)	5.5	22.7 (5-35)	6.7
Partners	23.8 (10-35)	6.3	24.8 (9-35)	6.8
Sexual distress				
Women	30.1 (7-50)	9.8	23.0 (3-52)	11.7
Partners	17.9 (0-50)	10.7	18.3 (0-43)	11.0
Anxiety				
Women	14.8 (6-24)	4.3	13.9 (6-24)	4.2
Partners	12.2 (6-24)	3.8	12.2 (6-20)	3.9

Note. Women = Women with FSIAD; *SD* = Standard deviation

Table 3

Correlations Between Predictor and Outcome Variables at Time 1.

	1	2	3	4	5	6	7
1. RSDS	.34**	.03	.09	.57***	.24*	.01	-.29**
2. Solitary desire	-.03	.06	.35**	.05	.07	-.14	-.05
3. Dyadic desire	-.04	.25*	-.15	.14	.27*	-.00	-.01
4. Rel. satisfaction	.57***	.01	.13	.46***	.39***	-.08	-.29**
5. Sex. satisfaction	.33**	.02	.06	.62***	.44***	-.35**	-.12
6. Sexual distress	-.32**	-.06	-.02	-.60***	-.62***	.14	.31**
7. Anxiety	-.42***	-.00	-.06	-.49***	-.27*	.42***	.24*

Note. *** $p < .001$, ** $p < .01$, * $p < .05$. FSIAD = female sexual interest/arousal disorder.

Women with FSIAD's correlations are above the diagonal. Partners' correlations are below the diagonal. Bolded correlations are between women's and partners' scores. Rel. = relationship. RSDS = partner responses to low sexual interest/arousal as perceived for women with FSIAD, and as reported by partners.

Table 4

Cross-sectional associations between outcome variables and partner responses to sexual difficulties as perceived by women with FSIAD and reported by their partners ($N=89$ couples)

Predictor Variable		Outcome Variables											
		Model 1: Solitary Sexual Desire		Model 2: Dyadic Sexual Desire		Model 3: Relationship Satisfaction		Model 2: Sexual Satisfaction		Model 5: Sexual Distress		Model 6: Anxiety	
		Women	Partners	Women	Partners	Women	Partners	Women	Partners	Women	Partners	Women	Partners
RSDS -	<i>b</i>	-.01	.03	.02	.04	.27	.08	.04	.03	-.01	-.03	-.04	-.05
Women's	(SE)	(.03)	(.03)	(.04)	(.03)	(.05)	.04	(.02)	.02	(.04)	(.04)	(.02)	(.01)
perception	<i>t</i>	-.39	1.1	.51	1.3	5.7***	1.9	2.1*	1.4	-.21	-.69	-2.7**	-4.0***
RSDS -	<i>b</i>	.06	-.02	.03	-.03	.08	.26	.01	.07	.04	-.13	.00	-.04
Partner	(SE)	(.03)	(.03)	(.04)	(.04)	(.05)	(.05)	(.02)	(.03)	(.05)	(.05)	(.02)	(.02)
reports	<i>t</i>	1.8	-.64	.80	-.76	1.4	5.5***	.30	2.6*	.77	-2.7**	.20	-3.0**

Note. $*p < .05$, $**p < .01$, $***p < .001$. We used unstandardized beta (*b*) coefficients. Unstandardized betas (*b*) represent the amount of change in the outcome for every one unit change in the predictor. Degrees of freedom were equal to 86. Women = women with FSIAD. RSDS = Response to Sexual Difficulties Scale.

Table 5

Longitudinal associations between women's reporting of Dyadic Sexual Desire and Sexual Distress and partner responses to sexual difficulties as perceived by women with FSIAD and reported by their partners ($N = 60$ couples).

	Dyadic sexual desire		Sexual satisfaction		Sexual distress	
	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>	<i>b</i> (SE)	<i>t</i>
RSDS - Women's perception	.03(.04)	.75	.02(.03)	.67	-.01(.05)	-.16
RSDS - Partner reports	-.02(.05)	-.38	-.01(.14)	-.40	.00(.07)	.04

Note. We used unstandardized beta (*b*) coefficients. Unstandardized betas (*b*) represent the amount of change in the outcome for every one unit change in the predictor. Degrees of freedom were equal to 65. Women = women with FSIAD. RSDS = Response to Sexual Difficulties Scale.

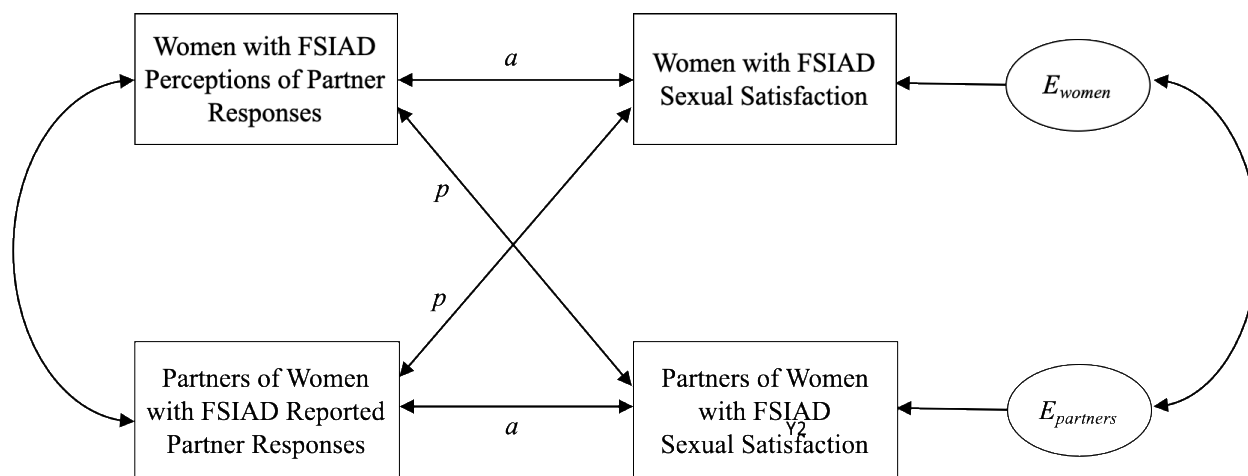


Figure 1. An example actor-partner interdependence model (APIM) depicting associations between partner responses and sexual satisfaction. Actor effects (marked a) represent associations between an individual's own perceptions of partner responses and their own sexual satisfaction. Partner effects (marked p) represent associations between an individual's own perceptions of partner responses and their partner's sexual satisfaction. The curved line on the left represents the correlation between perceptions of partner responses for women with FSIAD and their partners. The curved line on the right represents the residual nonindependence in the outcome variable, which is the correlation between error terms of sexual satisfaction (marked E) in this example.