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Change in 21 Sexual Concerns of New Parents From Three to Twelve Months Postpartum: Similarities and Differences between Mothers and Partners

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ABSTRACT

Background: Postpartum sexual concerns are associated with depressive symptoms, distress, and lower relationship satisfaction, and are commonly reported by both mothers and their partners. Previous studies have examined changes in postpartum sexual concern using aggregate scores and have not examined patterns of change for unique concerns, thus ignoring that the initial levels and trajectories of a variety of distinct, postpartum sexual concerns may differ from one another and may differ between mothers and partners.

Aims: The aims of the current study were to (i) examine how a variety of postpartum sexual concerns change from 3 to 12 months postpartum for mothers and their partners using a sample of first-time parents, and (ii) examine how mothers and their partners may differ in their initial levels and subsequent changes in postpartum sexual concerns.

Methods: First-time mothers and their partners (N = 203 couples) independently completed a measure of 21 postpartum sexual concerns at 3, 6, 9, and 12 months postpartum.

Outcomes: Postpartum Sexual Concerns Questionnaire

Results: Growth modeling indicated that twelve of mothers' and 6 of partners' postpartum sexual concerns declined over time from 3 to 12 months postpartum, only one concern of mothers' and none of partners' concerns increased over time, and the remaining 8 and 15 concerns were stable for mothers and partners, respectively. At 3 months postpartum, mothers had higher levels of 11 postpartum sexual concerns than partners, while partners had higher levels than mothers on 4 concerns. Compared to partners, from 3 to 12 months postpartum, mothers showed both steeper decreases in concern about body image changes and steeper increases in concern about returning to work.

Clinical Implications: Various postpartum sexual concerns do not all follow the same pattern of change over time, and mothers and their partners share similarities and differences in these patterns. Clinicians should use a checklist to discuss a range of postpartum sexual concerns with both new mothers and their partners.

Strengths and Limitations: This is the first study, to our knowledge, to examine how a variety of postpartum sexual concerns change over time and how mothers and partners both differ and are similar in their experiences. Most couples were in mixed-sex relationships, identified as White, and were relatively affluent; results may not generalize.

Conclusion: A variety of postpartum sexual concerns follow different patterns of change from 3 to 12 months postpartum, and mothers and partners share similarities and differences in these patterns. **Allsop DB, Impett EA, Vannier SA, et al. Change in 21 Sexual Concerns of New Parents From Three to Twelve Months Postpartum: Similarities and Differences between Mothers and Partners. J Sex Med 2022;XX:XXX–XXX.**

Key Words: Postpartum Sexuality; Postpartum Sexual Health; Sexual Satisfaction; Parenthood; Couples

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INTRODUCTION

The transition to parenthood is marked with changes in the sexual relationships of new parents. In addition to reporting, on average, increases in sexual distress[1,2] and declines in sexual desire,[3] sexual function,[1] and the frequency of vaginal intercourse,[3,4] new parents report having a variety of unique sexual concerns specific to the postpartum period.[5] Sexual concerns —questions or worries related to one's sexuality[5]—are experienced postpartum by over 80% of both new mothers and their partners[6] and include concerns about intercourse frequency, body image changes, breastfeeding, desire mismatches between partners, among others.[5] Sexual concerns can be distressing[5] and are associated with higher levels of depressive symptoms[7] and lower levels of relational satisfaction[5] in the postpartum period. Thus, those with more sexual concerns that persist and go unaddressed, may not be able to enjoy the physical,[8] psychological,[8,9] and relational benefits[9] of fulfilling sexual relationships during this particularly vulnerable period. Importantly, although postpartum sexual concerns are almost ubiquitous and can be distressing, prior studies have not focused on potential differences between specific types of sexual concerns and how specific sexual concerns might uniquely change across the postpartum period. Taken together, these gaps leave clinicians and new parents without a comprehensive picture of patterns of change for sexual concerns postpartum.

In the only study to our knowledge to examine change in sexual concerns longitudinally, Dawson and colleagues[7] sampled 99 first-time parent couples. They found that a total sexual concern score (20 items) declined on average for both members of the couple from 3 to 12 months postpartum. However, it is possible that different sexual concerns may not follow the same patterns over time—nuances missed through exploring general trends of aggregate scores alone. In the context of family systems theory,[10] it is plausible that various sexual concerns could follow different postpartum trajectories as sexual concerns that relate primarily to oneself could differ in their trajectory over time from sexual concerns related primarily to a partner or to the couple as a whole. Also, based on family systems theory, the course of sexual concerns could differ between parents as each parent represents a unique component of the couple overall. For instance, mothers' sexual concerns may be more severe than their partners due to the physical and psychological demands they experienced from delivery and postpartum recovery.[11,12]

Dawson and colleagues[7] also found that mothers displayed greater initial levels of total postpartum sexual concerns compared to their partners, which provides evidence that mothers and partners may also differ in their initial levels of specific sexual concerns. Further, in a cross-sectional study of 239 new parent couples with healthy infants aged 3−12 months old, Schlagintweit and colleagues[5] found that the level of concern endorsed by new parents for 20 unique sexual concerns ranged from moderately low to moderately high. These findings illustrate variability in the degree of concern experienced by new parents but did not capture unique patterns of change over time. In the same study, the authors found that mothers and fathers differed in which sexual concerns were rated as having the greatest impact on their sexuality and sexual relationship. Specifically, both mothers' and father's rated frequency of intercourse and change in mothers' body image in their top 5 sexual concerns, but mothers' concerns also included impact of childrearing duties on time for sex, sleep deprivation, and physical recovery after delivery whereas fathers' concerns included mood swings of a mother, having greater sexual desire than the mother, and how soon to resume sexual intercourse after delivery in their top 5.[5] These results suggest that it is plausible that mothers and partners may show both similarities and differences in their sexual concerns postpartum. Taken together, prior research provides a foundation for exploring how various sexual concerns change over time for new parents and how mothers and partners may differ in their patterns of change.

Armed with enhanced knowledge of the patterns of specific sexual concerns experienced by new parents, and how mothers and partners may differ in these patterns, clinicians may be better able to focus questions and attention on the specific areas that the couple is struggling with rather than taking a more general approach. New mothers report talking to a health professional about possible sexual changes or problems only 12.5% of the time after childbirth.[13] Targeted conversations about sexual concerns postpartum could help address the fact that new mothers want more information about this topic.[14]

AIMS

The first aim of the current study was to examine how a variety of postpartum sexual concerns change from 3 to 12 months postpartum for first-time mothers and their partners. We hypothesized that the majority of postpartum sexual concerns for both mothers and partners would decline over time, though some might remain stable, in line with Dawson and colleagues' finding that aggregate sexual concern scores declined for both mothers and partners.[7] The second aim was to examine whether mothers and their partners differed in their initial levels and subsequent changes in postpartum sexual concerns from 3 to 12 months postpartum, in line with evidence from family systems theory[10] and prior empirical work.[5,7] Based on prior research examining aggregate scores for sexual concerns,[7] we hypothesized that mothers would have higher initial levels of each of the postpartum sexual concerns compared to their partners, with 2 exceptions. The 2 exceptions were our expectations that: (i) partners would have greater initial levels of postpartum sexual concerns

compared to mothers for sexual concerns related to mismatches in sexual desire (with the partner having higher sexual desire) and (ii) changes in the mother's body image.[5] We made no hypotheses regarding differences in sexual concern trajectories between mothers and partners due to limited prior research in this area.

MATERIALS AND METHODS

Participants

First-time mothers and their partners were recruited during pregnancy (range = 13−24 weeks, *M* = 19.39 weeks, *SD* = 1.56) between May 2016 and April 2018. Participants were recruited through a variety of methods including online advertisements (40.0%), pamphlets/posters in doctors' offices (17.7%), in person from a diagnostic imaging clinic at a hospital in Atlantic Canda during their routine 20-week ultrasound appointment (15.3%), word of mouth (14.4%), community posters (6.0%), newspaper advertisement (0.5%), or other means (6.0%). Supplementary Figure 1[1] shows the flow of recruitment and depicts couples that were withdrawn over the course of the study and reasons for withdrawal.

Of the 252 couples who were recruited, 203 couples were eligible and included in the current analyses. Sociodemographic characteristics of this sample are provided in Table 1. To be eligible, both members of the couple were required to (i) be over 18 years of age; (ii) be in a romantic relationship of at least 6 months duration; (iii) be fluent in English; (iv) have access to a personal email account; and (v) be having their first child. Additionally, the pregnant partner was required to (vi) have a singleton pregnancy. No mothers or their partners were excluded due to mental or physical illness or disability. All participants who gave birth indicated their gender/sex was woman/female (with one individual identifying both as a trans woman and female) and therefore this group is referred to as "mothers". Partners are referred to as "partners" (rather than "fathers") as 7 same-sex couples were included in the sample (Table 1).

Procedure

Online and in-person recruitment strategies were used to recruit a convenience sample of first-time parent couples during pregnancy. For in-person recruitment, a clerk gave a brochure about the study to patients deemed eligible based on a prescreen of their requisition. All participants spoke with a research assistant (either in person or via telephone) who described the study and confirmed eligibility. Informed consent was obtained from participants online before they accessed their first online survey. A baseline survey was sent to both partners when mothers were

Table 1. Sample demographics

	Mothers *M* ± *SD* or *N* (%)	Partners *M* ± *SD* or *N* (%)
Age (years)	30.04 ± 3.49	31.35 ± 5.53
Years of education completed (since Grade 1)	17.33 ± 2.79	17.00 ± 3.07
Sex		
Female	203 (100%)	7 (3.4%)
Male	—	196 (96.6%)
Sexual orientation		
Heterosexual	182 (89.7%)	194 (95.6%)
Lesbian/Gay	6 (3.0%)	4 (2.0%)
Bisexual	12 (5.9%)	3 (1.5%)
Additional sexualities*	3 (1.5%)	2 (1%)
Relationship status		
Married/engaged/ common-law	186 (91.6%)	185 (91.1%)
Living with/dating one partner	17 (8.4%)	17 (8.4%)
Other	—	1 (0.5%)
Relationship length (years)	6.64 ± 3.60	6.64 ± 3.60
Country of residence		
Canada	145 (71.4%)	145 (71.4%)
United States of America	58 (28.6%)	58 (28.6%)
Ethnicity		
European American/White	160 (78.8%)	164 (80.8%)
Asian American/ Asian	19 (9.4%)	10 (4.9%)
Biracial/ Multiracial	9 (4.4%)	7 (3.4%)
African American/ Black	3 (1.5%)	3 (1.5%)
East Indian	6 (3.0%)	5 (2.5%)
Middle Eastern/ Central Asian/ South Asian	3 (1.5%)	7 (3.4%)
Additional cultures†	3 (2%)	7 (4%)
Employment‡		
Fulltime (inside + outside home)	150 (73.9%)	173 (85.2%)
Part-time (inside + outside home)	27 (13.3%)	15 (7.4%)
Student (fulltime + part-time)	9 (4.4%)	12 (5.9%)
Additional employments§	17 (8.4%)	3 (1.5%)

(continued)

[1]All supplemental material can be found online on the Open Science Framework (OSF) at https://osf.io/x4r5k/

Table 1. Continued

	Mothers $M \pm SD$ or N (%)	Partners $M \pm SD$ or N (%)
Annual income		
<$60,000	39 (19.3%)	39 (19.3%)
>$60,000	163 (80.7%)	163 (80.7%)
Mode of delivery[‖]		
Vaginal delivery	120 (59.1%)	—
Instrumental vaginal delivery	17 (8.4%)	—
Caesarean section	48 (23.6%)	—
Multiple modes of delivery	7 (0.3%)	—
How infant was fed in first 12 mo of life[‖]		
Exclusively from breast	54 (30.7%)	—
Bottle-fed exclusively, with only breast milk	5 (2.8%)	—
Bottle-fed exclusively, with only formula	19 (10.8%)	—
Fed from both breast and bottle	98 (55.7%)	—

*Additional sexualities include "Pansexual," "Asexual," and "Somewhere between bisexual and lesbian."
†Additional cultures include "Aboriginal/Native American/First Nations," "Hispanic/Latino/Latina," "Native Hawaiian/Pacific Islander," "Ashkenazi," and "other."
‡Assessed at baseline, prior to the birth of the baby.
§Additional employments include "unemployed," "paid/unpaid leave," "casual," and "unable to work."
‖Percentages do not add to 100% (and counts do not add to 203) due to missing data.

between 18 and 24 weeks pregnant, and follow-ups were sent at 32 weeks pregnant, 2 weeks postpartum, and 3, 6, 9, and 12 months postpartum. Relevant to the current study, participants reported their demographic information at baseline and completed the measure of postpartum sexual concerns at 3, 6, 9 and 12 months postpartum. Participants were emailed secure links to complete each survey and these links expired after 4 weeks. An established protocol of email and telephone reminders was used to promote participation.[2] Couples could receive a total of $105 CDN ($81 USD) in gift cards for either Amazon.ca or Amazon.com, prorated based on the number of surveys completed. Ethical review boards at Dalhousie University and the University of Toronto Mississauga approved the study. The current study is part of a larger study examining sexual well-being in the transition to parenthood. Although prior publications have examined sexual well-being across the transition to parenthood,[1,15,16,17] none of the prior papers examined our key variable of interest—postpartum sexual concerns.

Measures

Postpartum sexual concerns were assessed using the Postpartum Sexual Concerns Questionnaire.[5] The Postpartum Sexual Concerns Questionnaire is based on a measure previously validated through focus groups and formal pretesting via mailed surveys.[5,6] Participants were asked "How much do the following things affect your sex life?" for 21 items on a scale from 1 ("not at all") to 7 ("a great deal"). The specific items are provided in the first column of Table 2. The version in the current study included minor wording updates to reduce item complexity as well as item updates, specifically 4 items were added (time for sex, privacy, vaginal dryness, and pain during intercourse) and 4 items were removed due to item overlap (ie, separate items about the impact of breastfeeding were collapsed into a single item) or low frequency of endorsement in prior research (ie, when to resume intercourse and use of birth control).

DATA ANALYSES

All analyses were conducted in R 4.1.0[18] via base R functions and the lme4,[19] boot,[20] and bootImpute[21] packages.[2] First, descriptive statistics of the 21 items were obtained (Table 2). Then, the primary analysis—to examine the trajectories of mothers and partners sexual concerns over time and the similarities and differences between their initial levels and trajectories—was performed in 2 steps.

In step 1, a multilevel growth model was estimated with items and time (level I) nested within individuals, and individuals (level II) nested within couples (level III). The purpose of this first step was to estimate the overall trajectory of sexual concerns in preparation for the second step, examining trajectories of the 21-items for mothers and partners and examining the differences between mothers and partners intercepts (at 3-months postpartum) and slopes (across 3-, 6-, 9-, and 12-months postpartum). In this first step, fixed and random effect estimates were obtained by regressing sexual concern scores (ie, the individual 21 sexual concern items nested within individuals) on the intercept, time, the relationship role (0 = mother, 1 = partner) and the interaction between time and relationship role. An illustration of how the data were structured is presented in Supplemental Table 1. Random effects at level I included the intercept, time, relationship role, and the interaction between time and relationship role.

[2]We note that our initial planned study was preregistered through Open Science Framework (https://osf.io/x4r5k/). We adapted our study after exploratory factor analysis and exploratory structural equation modeling did not yield cohesive and meaningful factors—factors we planned to model the trajectories of from 3–12 months postpartum. Therefore, we examined the trajectories of each of the 21 sexual concerns in the current study.

Table 2. Means of mothers' and partners' sexual concerns at 3, 6, 9, and 12 months postpartum

	Mothers				Partners			
Item	3 mo	6 mo	9 mo	12 mo	3 mo	6 mo	9 mo	12 mo
1. Changes in your own body image	4.23	4.13	4.03	3.86	2.89	2.85	2.95	2.98
2. Child-rearing duties	5.61	5.66	5.40	5.18	4.89	5.07	4.69	4.40
3. Energy for sex (ie, fatigue)	5.65	5.80	5.57	5.53	4.86	5.16	4.96	4.76
4. Time for sex	5.79	5.64	5.48	5.48	5.31	5.47	5.39	5.11
5. Physical recovery of the birth mother after delivery	5.38	3.94	3.14	3.02	4.95	3.96	3.12	2.55
6. Breastfeeding	4.09	3.62	3.36	2.87	3.51	3.20	2.82	2.33
7. A mismatch in sexual desire(your partner will have more sexual desire than you)	4.38	4.36	4.19	4.12	3.23	3.06	3.21	3.21
8. Mood swings (not postpartum depression)	3.13	2.90	2.80	2.90	2.93	2.81	2.69	2.72
9. Changes in your sexual self-perception (ie, how you see yourself as a sexual person)	3.96	3.71	3.70	3.38	2.48	2.46	2.50	2.40
10. Differences with your partner on how to approach parenting	2.20	2.02	1.84	1.98	2.08	2.03	1.82	2.18
11. Returning to work	1.85	2.22	2.22	2.83	2.81	2.49	2.33	2.72
12. Postpartum depression	1.97	1.91	1.96	1.93	1.91	1.90	1.82	1.83
13. Your sexual perception of your spouse/partner (ie, how you see your partner as a sexual person)	2.28	2.14	2.15	2.22	2.64	2.73	2.49	2.37
14. Changes in your partner's body image	1.70	1.71	1.72	1.66	2.94	2.92	2.81	2.79
15. A mismatch in sexual desire (you will have more sexual desire than your partner)	2.28	2.27	2.17	2.30	4.10	4.07	3.91	4.01
16. Lack of privacy	3.31	3.13	2.99	2.84	3.00	2.98	3.05	2.94
17. Vaginal dryness	3.12	2.96	2.57	2.42	2.36	2.07	2.14	1.87
18. Pain during intercourse	3.71	3.20	2.69	2.48	2.97	2.69	2.38	1.96
19. Change in frequency of intercourse	4.86	4.48	4.21	4.12	4.56	4.31	3.94	3.99
20. Difficulty receiving or showing affection	2.68	2.77	2.49	2.88	2.82	2.58	2.42	2.60
21. Low sexual desire or interest	4.78	4.91	4.73	4.42	3.48	3.40	3.46	3.27

Note. "mo" = months. Participants were given the prompt "how much do the following things affect your sex life?" regarding the 21 items and responded on a scale from 1 ("not at all") to 7 ("a great deal").

Random effects at level II (individuals) and level III (couples) only included the intercept to reduce the complexity of the model to facilitate model convergence.[22] After testing for non-linear change (ie, quadratic change) we determined that a linear pattern best fit the data, and thus only a linear slope term was included in the model.[3] As this multilevel model was preparatory for the next step of the analysis, we provide details in Supplementary Table 2.

In step 2, 6 item-specific coefficients (ie, mothers' intercepts, mothers' slopes, partners' intercepts, partners' slopes, intercept differences between mothers and partners, and slope differences between mothers and partners) and 95% confidence intervals of these coefficients for each of the 21 items were obtained. The 95% confidence intervals (presented in brackets) are considered significant when the interval it does not include zero. The 6 coefficients for each of the 21 items were first obtained through the "coef()" function in R. Then, our model was run across 1,000 nonparametric bootstrap samples drawn via the boot package[20] and 95% confidence intervals were determined based on the pooled results. One thousand bootstrap samples are commonly drawn in practice[23] and sufficient to produce confidence intervals of estimates[24] (see Supplemental Figure 2 for more on bootstrap samples drawn in the current study). Finally, the trajectories of the 21 sexual concerns were plotted for mothers and partners for interpretability.

There were little missing data overall (87% of data present). Missing data were handled via multiple imputation using the bootImpute package in R[21] wherein each of the 1,000 bootstrap samples were imputed twice, as recommended by Bartlett.[21]

Syntax and data for the primary analyses can be found on the Open Science Framework at https://osf.io/x4r5k/https://osf.io/x4r5k/?view_only=fa0610a8a4ee44d3bbd13d0e4ff6185c.

[3]This testing included running a multilevel growth model for each of the 21 sexual concerns for mothers and partners where both a linear and a quadratic slope were included as predictors of sexual concern scores. Of the 42 possible non-linear trends (ie, 21 for mothers and 21 for partners), only 3 followed a statistically significant quadratic pattern. Therefore, we proceeded with caution and only included linear terms in our model for parsimony, to estimate accurate standard errors, and to focus on our hypotheses. We note, however, that results pertaining to the following 3 sexual concerns should be interpreted judiciously: for mothers, this included low sexual desire, and for partners, child-rearing duties and time for sex; these all followed a similar pattern in that they slightly increased from 3 to 6 months postpartum and then declined from 6 to 12 months postpartum.

RESULTS

Changes in Mothers' and Partners' Sexual Concerns Over Time

Our first aim was to examine how a variety of postpartum sexual concerns change from 3 to 12 months postpartum for mothers and their partners. We found that twelve of mothers' and 6 of partners' sexual concerns significantly declined over time from 3 to 12 months postpartum, one of mothers' and none of partners' sexual concerns significantly increased over time, while the remaining 8 and 15 concerns were stable for mothers and partners, respectively (Table 3 and Figure 1). There were 6 sexual concerns which declined over time for both mothers and partners, including child-rearing duties, the mother's physical recovery, breastfeeding, vaginal dryness, pain during intercourse, and an intercourse frequency change. There were 6 sexual concerns unique to mothers that significantly declined over time including body image changes, time for sex, being the person with the lower sexual desire in the couple, changes in sexual self-perception, lack of privacy, and low sexual desire/interest. Further, the one sexual concern that increased was unique to mothers and was related to returning to work. There were no sexual concerns unique to partners that significantly changed over time (increasing or decreasing).

Differences Between Mothers' and Partners' Intercepts and Slopes

Our second aim was to examine how mothers and their partners may differ in their initial levels (ie, intercepts) and subsequent changes (ie, slopes) in postpartum sexual concerns from 3 to 12 months postpartum. First, regarding intercept differences, mothers' and partners' initial levels of sexual concern at 3 months postpartum were significantly different from one another in all but 6 cases (the mother's physical recovery, mood swings, differences in parenting, postpartum depression, lack of privacy, and receiving/showing affection). As detailed in Table 4, mothers had higher levels of sexual concern compared to partners on 11 of the remaining 15 sexual concerns whereas partners were higher on the other 4 sexual concerns. Mothers had higher initial levels of sexual concern compared to partners in terms of body image changes, child-rearing duties, energy for sex, time for sex, breastfeeding, being the person with the lower sexual desire in the couple, changes in sexual self-perception, vaginal dryness, pain

Table 3. Intercepts and slopes of sexual concerns from 3 to 12 months postpartum (N = 203 couples)

Item	Mother Intercept Estimate [95% CI]	Mother Slope Estimate [95% CI]	Partner Intercept Estimate [95% CI]	Partner Slope Estimate [95% CI]
1. Body image changes	**4.20 [3.97 4.41]**	**-0.40 [-0.69 -0.08]**	**2.96 [2.73 3.16]**	0.00 [-0.33 0.39]
2. Child-rearing duties	**5.70 [5.53 5.85]**	**-0.52 [-0.76 -0.24]**	**5.04 [4.84 5.22]**	**-0.53 [-0.85 -0.22]**
3. Energy for sex (ie, fatigue)	**5.73 [5.57 5.87]**	-0.22 [-0.47 0.02]	**5.06 [4.87 5.23]**	-0.22 [-0.50 0.09]
4. Time for sex	**5.76 [5.61 5.92]**	**-0.32 [-0.58 -0.06]**	**5.45 [5.26 5.62]**	-0.26 [-0.53 0.03]
5. Mother physical recovery	**4.95 [4.76 5.17]**	**-2.14 [-2.48 -1.81]**	**4.68 [4.43 4.92]**	**-2.05 [-2.47 -1.60]**
6. Breastfeeding	**4.00 [3.80 4.21]**	**-1.09 [-1.37 -0.78]**	**3.48 [3.28 3.68]**	**-1.00 [-1.30 -0.65]**
7. Sexual desire mismatch (partner has greater desire)	**4.40 [4.19 4.62]**	**-0.35 [-0.69 -0.05]**	**3.25 [3.01 3.47]**	-0.06 [-0.44 0.33]
8. Mood swings	**3.07 [2.88 3.26]**	-0.26 [-0.54 0.03]	**2.90 [2.73 3.08]**	-0.28 [-0.57 0.02]
9. Changes in sexual self-perception	**3.88 [3.67 4.07]**	**-0.51 [-0.80 -0.18]**	**2.59 [2.39 2.80]**	-0.11 [-0.42 0.27]
10. Differences in parenting	**2.13 [1.97 2.30]**	-0.20 [-0.45 0.04]	**2.06 [1.92 2.22]**	-0.07 [-0.33 0.21]
11. Returning to work	**1.98 [1.80 2.18]**	**0.60 [0.30 0.94]**	**2.58 [2.38 2.77]**	-0.06 [-0.40 0.28]
12. Postpartum depression	**1.99 [1.82 2.16]**	-0.06 [-0.29 0.22]	**1.93 [1.78 2.09]**	-0.10 [-0.34 0.16]
13. Sexual perception spouse/partner	**2.27 [2.09 2.46]**	-0.10 [-0.36 0.18]	**2.67 [2.48 2.86]**	-0.31 [-0.60 0.00]
14. Changes in your partner's body image	**1.77 [1.62 1.92]**	-0.00 [-0.25 0.27]	**2.88 [2.72 3.08]**	-0.26 [-0.54 0.03]
15. Sexual desire mismatch (greater desire than partner)	**2.34 [2.13 2.55]**	0.03 [-0.30 0.37]	**4.00 [3.76 4.24]**	-0.30 [-0.69 0.11]
16. Lack of privacy	**3.27 [3.07 3.48]**	**-0.40 [-0.72 -0.08]**	**3.04 [2.84 3.25]**	-0.15 [-0.47 0.20]
17. Vaginal dryness	**3.09 [2.90 3.28]**	**-0.70 [-0.97 -0.40]**	**2.34 [2.15 2.52]**	**-0.39 [-0.67 -0.07]**
18. Pain during intercourse	**3.57 [3.38 3.80]**	**-1.13 [-1.48 -0.82]**	**2.97 [2.77 3.18]**	**-0.91 [-1.21 -0.57]**
19. Intercourse frequency change	**4.76 [4.58 4.95]**	**-0.66 [-0.97 -0.37]**	**4.51 [4.28 4.69]**	**-0.59 [-0.95 -0.25]**
20. Receiving/showing affection	**2.72 [2.54 2.89]**	-0.05 [-0.31 0.24]	**2.72 [2.50 2.92]**	-0.28 [-0.57 0.07]
21. Low sexual desire/interest	**4.87 [4.67 5.06]**	**-0.42 [-0.71 -0.10]**	**3.58 [3.36 3.80]**	-0.19 [-0.53 0.19]

Note. Bolded coefficients indicate 95% confidence intervals (in brackets) do not include zero and a coefficient is therefore statistically significant ($p < .05$). Estimates = medians. Intercept = initial level at 3 mo postpartum. Slope = change 3–12 mo postpartum. Intercepts differ slightly from means at 3 months postpartum of sexual concerns displayed Table 2 as intercepts here were calculated via imputed and bootstrapped data whereas those in Table 2 are raw means. This table depicts results from our first aim—to examine how a variety of postpartum sexual concerns change from 3 to 12 mo postpartum for mothers and their partners.

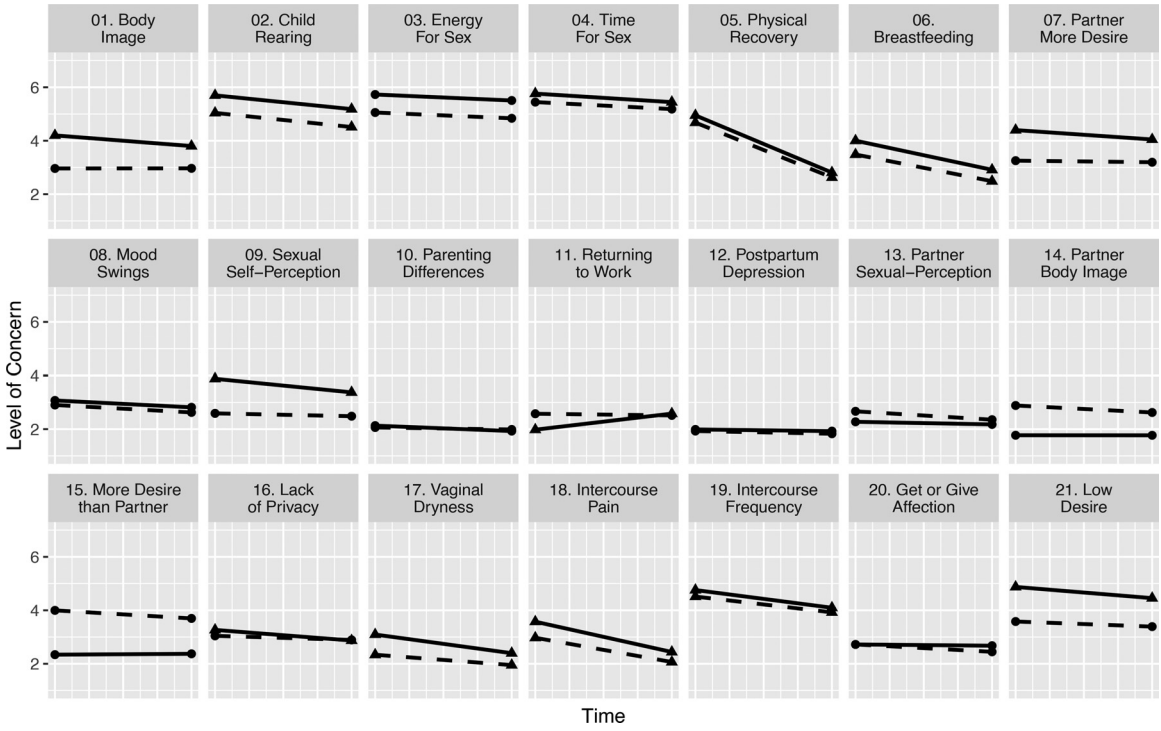

Figure 1. Trajectories of Sexual Concerns Over Time for Mothers (Solid Lines) and Partners (Dashed Lines). *Note.* Time range is 3–12 months postpartum. Statistically significant slopes marked with triangles. Figure 1 is available in color online at www.jsm.jsexmed.org.

during intercourse, intercourse frequency change, and low sexual desire/interest. Partners had higher initial levels of sexual concern compared to mothers in terms of returning to work, their sexual perception of their partner (ie, the mother), changes in their partner's (mother's) body image, and being the person with the higher sexual desire in the couple.

Second, regarding slope differences, we clarify that (i) there are instances in which mothers' slopes were different from zero but partners' slopes were not (or vice versa) but (ii) this does not necessarily mean that mothers' slopes and partners' slopes were significantly different from one another. The following results relate to testing this latter point. This test is analogous to a *t*-test, wherein the difference between the means of 2 groups is examined rather than if the mean of the first (or second) group differs from zero. We found that mothers' and partners' change in sexual concern from 3 to 12 months postpartum were significantly different from one another in 2 cases. First, the slope of the sexual concern relating to returning to work showed an increase over time for mothers but remained stable for partners. Second, the slope of the sexual concern relating to changes in one's own body image showed a decline over time for mothers but remained stable for partners.

DISCUSSION

This study examined how 21 unique postpartum sexual concerns changed from 3 to 12 months postpartum among a sample of mothers and their partners. We also examined whether and how mothers and partners differed in their initial levels of these sexual concerns at 3 months postpartum and in the trajectories of these sexual concerns during this postpartum period. Findings indicated heterogeneity in the patterns of change for mothers and partners; although the majority of sexual concerns decreased over time, at least one concern increased for mothers (ie, the impact of returning to work) and others remained stable. Additionally, mothers and partners differed in their initial levels of postpartum sexual concerns at 3 months postpartum in most cases, with mothers most often reporting a higher degree of concern. In contrast, however, mothers and partners generally did not differ in the trajectories (ie, the rate of change) of their sexual concerns from 3 to 12 months postpartum with 2 exceptions (returning to work, changes in one's own body image). These results highlight differences between mothers and their partners in the intensity of sexual concerns shortly after having a baby, but similarities in the rate of change over time.

Patterns of Change in Postpartum Sexual Concerns

Findings regarding the trajectories of the various postpartum sexual concerns were mixed. We found heterogeneity in the trajectories of various postpartum sexual concerns such that 12 concerns declined for mothers and 6 declined for partners, but others remained stable (8 for mothers, 15 for partners) and one concern increased for mothers. These findings were partially in line with our hypothesis that the majority of concerns would decline over time with some remaining stable. The sexual concerns which declined over time may have been more uniquely

Table 4. Differences between parents in intercepts and slopes of sexual concerns from 3–12 mo postpartum (N = 203 couples)

Item	Difference in Intercept (P. vs M.) Estimate [95% CI]	Parent with Higher Intercept	Difference in Slope (P. vs M.) Estimate [95% CI]	Parent with Greater (More Positive) Slope
1. Body image changes	**-1.23 [-1.53 -0.98]**	*Mother*	**0.40 [0.00 0.83]**	*Partner*
2. Child-rearing duties	**-0.66 [-0.90 -0.43]**	*Mother*	-0.02 [-0.39 0.34]	—
3. Energy for sex (ie, fatigue)	**-0.67 [-0.88 -0.46]**	*Mother*	0.02 [-0.34 0.37]	—
4. Time for sex	**-0.32 [-0.53 -0.11]**	*Mother*	0.07 [-0.30 0.42]	—
5. Mother physical recovery	-0.28 [-0.58 0.01]	—	0.09 [-0.41 0.60]	—
6. Breast feeding	**-0.52 [-0.80 -0.25]**	*Mother*	0.09 [-0.32 0.49]	—
7. Sexual desire mismatch (partner has greater desire)	**-1.14 [-1.44 -0.88]**	*Mother*	0.30 [-0.11 0.71]	—
8. Mood swings	-0.17 [-0.41 0.08]	—	-0.01 [-0.37 0.33]	—
9. Changes in sexual self-perception	**-1.29 [-1.57 -0.99]**	*Mother*	0.39 [-0.02 0.85]	—
10. Differences in parenting	-0.07 [-0.28 0.14]	—	0.13 [-0.16 0.43]	—
11. Returning to work	**0.59 [0.34 0.86]**	*Partner*	**-0.65 [-1.15 -0.27]**	*Mother*
12. Postpartum depression	-0.06 [-0.28 0.16]	—	-0.04 [-0.38 0.26]	—
13. Sexual perception spouse/partner	**0.39 [0.15 0.64]**	*Partner*	-0.20 [-0.58 0.12]	—
14. Changes in your partner's body image	**1.11 [0.89 1.36]**	*Partner*	-0.26 [-0.59 0.10]	—
15. Sexual desire mismatch (greater desire than partner)	**1.66 [1.36 1.97]**	*Partner*	-0.34 [-0.78 0.18]	—
16. Lack of privacy	-0.23 [-0.50 0.04]	—	0.25 [-0.17 0.71]	—
17. Vaginal dryness	**-0.76 [-1.01 -0.51]**	*Mother*	0.31 [-0.04 0.65]	—
18. Pain during intercourse	**-0.61 [-0.90 -0.33]**	*Mother*	0.23 [-0.16 0.63]	—
19. Intercourse frequency change	**-0.24 [-0.52 -0.03]**	*Mother*	0.07 [-0.30 0.47]	—
20. Receiving/showing affection	-0.00 [-0.26 0.25]	—	-0.22 [-0.61 0.10]	—
21. Low sexual desire/ interest	**-1.29 [-1.55 -1.04]**	*Mother*	0.24 [-0.19 0.65]	—

Note. Bolded coefficients indicate 95% confidence intervals (in brackets) do not include zero and a coefficient is therefore statistically significant. Estimates = medians. Intercept = initial level at 3 mo postpartum. Slope = change 3–12 mo postpartum. This table depicts results from our second aim—to examine how mothers and their partners may differ in their initial levels (ie, intercepts) and subsequent changes (ie, slopes) in postpartum sexual concerns from 3 to 12 mo postpartum.

tied to or exacerbated by the transition to parenthood relative to those sexual concerns that were stable. For instance, sexual concerns that declined often related to nurturing the infant (eg, child-rearing, breastfeeding, time for sex, and a lack of privacy) or delivery and postpartum adjustment (eg, a mother's physical recovery, desire differences, low desire, vaginal dryness, intercourse pain, intercourse frequency, and body image changes). In contrast, concerns commonly found outside of the transition to parenthood remained stable, like sexual concern with giving or receiving affection[25] or one's sexual self-perception.[26] However, this distinction was not always the case since we also found that the impact of postpartum depression was a stable sexual concern—a finding partly in line with previous work, which has found mothers' (but not partners') postpartum depressive symptoms to be stable over time.[7]

Contrary to our hypotheses, in one instance, a sexual concern—mothers' postpartum sexual concern about returning to work—increased in intensity over time. This result makes sense given that the challenges of infant care and returning to work postpartum are, respectively, associated with negative postpartum physical health symptoms (eg, fatigue, back or neck pain, headaches, breast discomfort)[27] and depressive symptoms.[28] In addition,

because mothers participate in more hours of paid employment as time elapses since delivery,[28] increased work demands may strain mothers' efforts to balance caregiving and work, ultimately stressing mothers' attempts to maintain sexual intimacy with their partner. Thus, sexual concerns about returning to work postpartum may be driven in part by active participation in the workforce postpartum. Further research is needed to substantiate this notion. Importantly, we note that our sample was predominantly Canadian and this pattern might be shaped by parental leave policies that vary across countries. For instance, parents from Canada may have endorsed lower levels of sexual concern than U.S. parents because Canada provides more paid, flexible, and longer lasting parental leave benefits than the U.S.[29]

These findings have practical implications. First, practitioners can share with expectant and new parents that the overall pattern of a variety of postpartum sexual concerns is either declining or remaining stable over time. This information both reassures and normalizes the expectation among new parents that some postpartum sexual concerns will ease with time and that other, while not necessarily easing in the first year postpartum, will likely not worsen. Reframing sexual challenges, such as sexual desire differences between members of a couple, as a common experience has been found to be beneficial for couples[30] and could similarly help new parents contextualize other postpartum sexual concerns.[12]

Second, given that our results established that various sexual concerns do not follow a single pattern, practitioners should discuss with parents to what extent they are concerned about a variety of aspects of postpartum sexuality. In line with other multifaceted theories[31,32] and approaches to supporting new parents' sexual relationships,[33] clinicians might utilize a checklist (see footnote[4]) based on the Postpartum Sexual Concerns Questionnaire,[5] to facilitate discussion about the unique and the most pressing sexual concerns experienced by each member of the couple, including differences between partners. Given different patterns of change, the checklist could be utilized with new parents throughout postpartum follow-up visits to maximize its potential benefit. In sum, more informed discussion between clinicians and new parents about patterns of change in postpartum sexual concerns—and differences between parents—could help couples identify their own patterns of sexual concern and subsequently be better positioned to nurture their postpartum sexual well-being.

Differences in Sexual Concern Levels Between Mothers and Partners at 3 Months Postpartum

Mothers and partners differed from one another in their initial levels of sexual concern at 3 months postpartum in 15 of 21 sexual concerns, with mothers reporting more concern than their partners for 11 items. These findings point to within-couple differences in the intensity of a variety of sexual concerns—including biological, psychological, and relational components—shortly after having a baby. While both members of a couple face sexual concerns postpartum, mothers may in general have a greater burden in the short term compared to partners—a notion in line with previous findings that mothers report higher sexual concern than partners[7] and consistent with the fact that mothers who gave birth undergo more biological and psychosocial changes during this period than partners.[11,12]

An implication from these findings is that practitioners should encourage new parents to be aware of and support one another in their different levels of postpartum sexual concerns. Individuals with higher levels of dyadic coping, where partners cope collaboratively with stressors, tend to be buffered from the negative effects of stress on relationships,[34,35] including during the transition to parenthood.[36] Thus, new parents who utilize dyadic coping to address postpartum sexual concerns may mitigate potential negative associations between postpartum sexual concerns and distress,[5] depressive symptoms[7] and lower levels of relational satisfaction.[5] In practice, therapeutic approaches like Cognitive Behavioral Therapy[37] and relationship education programs like the Prevention and Relationship Education Program[38] may be suitable models to follow in line with their success in strengthening relationships through encouraging support and constructive communication among partners. However, as these approaches are not specific to the transition to parenthood, and this implication is novel, future research is needed to confirm this line of thinking.

Lack of Differences in Sexual Concern Trajectories Between Mothers and Partners Over Time

In contrast to the many differences, we observed between mothers and partners in their initial sexual concern levels at 3 months postpartum, mothers and partners were similar in their postpartum sexual concern trajectories. Mothers and partners did not statistically differ in their levels of change over time for 19 of the 21 sexual concerns. Thus, while mothers and partners may commonly differ in the intensities of their sexual concerns at 3 months postpartum, they appear to follow similar patterns of change over time. In line with models of stress in families,[39,40] understanding that future adjustments will occur simultaneously with one's partner may help individuals cope with stressors such as postpartum sexual concerns. Sharing that mothers and partners tend to follow similar trends, and mainly improvements, to their postpartum sexual concerns may promote a feeling of solidarity as a couple and potentially reduce stress around sexual concerns.[36]

Two postpartum sexual concerns differed in their patterns of change over time between mothers and partners. First, on average, mothers' postpartum concerns about body image declined to a greater extent than did partners, whose levels remained stable. This result makes sense given that mothers' bodies changed more than partners' bodies due to the pregnancy. And, as mothers physically recover from delivery and their bodies return to pre-

[4]For convenience, this measure can be found on the Open Science Framework at the link https://osf.io/x4r5k/ in the file "Sexual Concerns Questionnaire.pdf".

pregnancy shapes and sizes (they have "reclaimed" their bodies postpartum[41]), mothers' postpartum sexual concerns about body image changes declined. Second, mothers' sexual concern about returning to work increased, while partners' levels remained stable. Mothers more so than partners take parental leave, paid or unpaid, following a pregnancy[42], and the benefits of paid maternal leave diminish in the first year postpartum[43], potentially creating more strain for couples postpartum. Indeed, economic pressure is linked to lower sexual satisfaction.[44] An alternative explanation is that thinking about returning to work feels stressful for new mothers because they feel pressure to balance caregiving (which in mixed-sex/gender relationships they do more of than fathers[46]) and work[42,47] and they might worry that they will have even less time and energy for sex once they return to work. Hence the return to work becomes a stressor that increases as the return approaches, and corresponding sexual concern increases with time. Future research can test and confirm these notions.

Limitations and Future Directions

There are several limitations to consider in the current study. First, while a variety of postpartum concerns were assessed, there may be other important sexual concerns not captured in the current study (eg, concerns about birth control postpartum).[6] Thus, practitioners who employ a checklist when discussing postpartum sexuality with new parents should also ask parents an open-ended question about additional concerns postpartum.

The sample included a small number of same-sex couples, was primarily White, and was relatively well-educated and affluent. Accordingly, generalizability of the sample should be considered when interpreting and applying findings. Future studies exploring postpartum sexual concerns with larger numbers of same-gender/sex couples can build on this work by examining differences (or lack thereof) between same- and mixed-gender/sex couples.[47] We did not collect data on the level of sexual concerns during pregnancy and therefore cannot make comparisons to levels of sexual concerns postpartum; future work should collect this information. There is an empirical basis to suggest that postpartum sexual concerns and sexual well-being outcomes like sexual satisfaction are negatively related. Specifically, prior work indicates that endorsing more postpartum sexual concerns is associated with higher levels of depressive symptoms[7] and lower levels of relational satisfaction[5] in the postpartum period. In turn, both depressive symptoms and relationship satisfaction have been linked to sexual satisfaction.[9,48] Nevertheless, because assessments of sexual well-being like sexual satisfaction were not included in our models, we could not determine the relevance of postpartum sexual concerns for other facets of sexual well-being. Future research might explore links between changes in postpartum sexual concerns and functional outcomes like sexual satisfaction and sexual behaviors.

Given the exploratory scope of our study, known negative correlates of postpartum sexual well-being like poor mental health[1] were not incorporated into our models. Other potential correlates of postpartum sexual well-being, like mode of delivery[49] and breastfeeding[50], have mixed evidence as predictors of postpartum sexual well-being[2,51], and were also not included. Future studies might examine how these and other factors predict postpartum sexual concern trajectories. Finally, postpartum sexual concerns were first assessed at 3 months postpartum. While between 78–90% of new parents report having resumed sexual activity (specifically vaginal intercourse) by 3-months postpartum,[4] many also initiate activity sooner. Sexual concerns arising immediately postpartum were not captured in this study.

CONCLUSION

The transition to parenthood is a change-filled time for new parents who commonly face concerns about their sexual relationship and sexuality postpartum. The current study provides evidence that most concerns decline or remain stable from 3 to 12 months postpartum for both mothers and partners, that mothers in general report more postpartum sexual concerns than partners at 3 months postpartum, and that there are few differences in the rate of change in concerns over time between mothers and partners. We hope that practitioners and new parents will be better positioned to promote sexual well-being postpartum as findings from the study are integrated into practice.

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