ORIGINAL RESEARCH—WOMEN'S SEXUAL HEALTH

Exploring Women's Postpartum Sexuality: Social, Psychological, Relational, and Birth-Related Contextual Factors

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ABSTRACT

Introduction. Women's postpartum sexuality can be influenced by factors related to physical, personal, and relationship transitions after the newborn arrives. Despite this, many experiential and social factors remain unexplored.
Aims. This study aims to (i) investigate a range of variables thought to influence postpartum sexuality; (ii) expand the focus beyond latency to penis–vagina intercourse; and (iii) assess positive aspects of postpartum sexuality.
Methods. Via retrospective reporting on the first 3 months postpartum, 304 women completed an online questionnaire.
Main Outcome Measures. The main outcome measures were retrospective reports of sexual desire (Sexual Desire Inventory), latency to resumption of sexual activity, and perceptions of partner's sexual desire. Other measures were birth experience (Questionnaire Measuring Attitudes About Labor and Delivery), breastfeeding status, perceptions of social support (Multidimensional Scale of Perceived Social Support), stress (Perceived Stress Scale), and body image (Body Image Self-Consciousness Scale).
Results. Significant differences in time to resumption were found. Women performed oral sex on their partners earlier than engaging in masturbation, which was followed by intercourse and then receiving oral sex. Post hoc analyses identified birth experience, social support, importance of partner's sexual fulfillment, and perception of partner's desire as contributors to this pattern. Women's postpartum sexual desire was influenced by their perceptions of their *partner's* postpartum sexuality and individual's level of fatigue. Results suggested that postpartum desire was not significantly influenced by breastfeeding status, vaginal issues, or psychosocial variables including stress, body image, or social support.
Conclusion. Results suggest that women's perceptions of their partner's sexuality impact postpartum sexuality more than the physical factors most commonly studied (e.g., vaginal trauma and breastfeeding). These results portray postpartum sexuality as a multidimensional phenomenon and highlight the need for further research that addresses its social context. **Hipp LE, Kane Low L, and van Anders SM. Exploring women's postpartum sexuality: Social, psychological, relational, and birth-related contextual factors. J Sex Med 2012;9:2330–2341.**

Key Words. Postpartum; Birth; Sexuality; Sexual Desire; Breastfeeding; Masturbation; Pleasure; Oral Sex; Intercourse; Women

Introduction

Sexuality during a women's life span is recognized as a multifaceted phenomenon that can be influenced by contextual factors such as stress or relational factors. Yet women's experiences of postpartum sexuality have rarely been explored beyond physical dimensions and such emphases tend to focus on issues related to pregnancy, vaginal trauma, and breastfeeding. Additionally, most research focuses specifically on patterns of frequency of sexual behavior in postpartum women, e.g., trying to explore the decreased frequency of sexual behavior over pregnancy and into the postpartum period, and then the increase in sexual behavior that occurs around 3 months

postpartum [1–3]. Few studies have investigated sexuality in its broader sense including solitary sexuality or how psychosocial factors might be related to postpartum sexuality. The possibility of *high* desire or sexual function during the postpartum period is precluded by research questions and methods that assume and focus on *low* sexual function or decrements associated with childbirth and parenting during this phase. The goals of this study, therefore, were to expand the scholarly focus on postpartum sexuality while attending to psychosocial and relational phenomena within the context of birth-related issues including fatigue, body image, mode of delivery, breastfeeding, perceptions of stress, and desire.

Fatigue

Fatigue is a key component in the experience of parenting newborns and beyond, and multiple studies support an association between fatigue and postpartum sexuality. For example, fatigue predicted decreases in sexual satisfaction and desire at 12 weeks postpartum. Similarly, 62% of women reported that fatigue at 4 months postpartum interfered with sexual activity or inhibited sexual behavior or expression of desire [4–6]. Despite these findings, fatigue is rarely studied as a primary variable and is instead theorized to interplay with other factors such as depression, breastfeeding, or genital tract trauma [7–9].

Stress and Depression

Relatively few studies report on the association between depression and sexual desire during the postpartum phase. Still, women reporting depressive symptomology in the clinical range had significantly lower overall scores on an index of sexual function following childbirth than women with no indication of depression [10]. Women with depression were significantly less likely to have resumed sexual activity at 6 months postpartum than nondepressed women and reported a more limited range of sexual behaviors including initiation [11]. However, perinatal and postpartum depression did not appear to correlate with reported levels of sexual desire or likelihood to abstain from sexual activity, complicating this link [10]. Despite the importance of depression and depressive symptoms, few studies have investigated psychological factors beyond these parameters.

Relationship Factors

Women's relationships with their partners during the postpartum phase may be particularly valuable in understanding postpartum sexuality. The literature surrounding relationship satisfaction in the postpartum period consistently demonstrates associations between relationship dissatisfaction and reductions in sexual frequency, desire, and enjoyment [2,12–14], while high levels of partner support (i.e., partner helping with the baby) have been shown to be associated with higher levels of sexual enjoyment by the mother [15]. Studies also note the importance of relationship communication within reports of sexual satisfaction [16,17]. Communication between partners surrounding sexual expectations is especially important in the postpartum period, given that many women worry about their partner's sexual satisfaction during this time [18]. However, perceptions of high desire in partners may also negatively affect women's sexuality after childbirth as women with low or absent sexual desire were more likely to indicate that their partners had a strong sex drive [15,19].

Body Image

Body image is generally thought to contribute to postpartum sexuality in women, though the associations are ambiguous. Women who perceive themselves as attractive, including to their partners, report higher levels of sexual enjoyment, frequency of sexual behavior, and less sexual pain [18]. Yet, 70% of women were dissatisfied with their bodies at 4 months postpartum with 39% still reporting dissatisfaction up to 1 year postpartum. However, these rates of body dissatisfaction were *not* associated with decreased frequency of sexual intercourse during this period [4]. Moreover, though some women report dissatisfaction with changes to their breasts and vaginas over pregnancy and birth [17], one report found that women did not perceive breast changes as having *any* effect on their sexuality [20].

Vaginal Issues and Birth Trauma

Given that research on postpartum sexuality tends to focus on time to resumption of penis–vagina intercourse (PVI), it follows that vaginal trauma and birth-related issues are often centrally investigated. Women who have had assisted deliveries (i.e., with forceps or vacuum extraction) report more perineal pain and dyspareunia, as well as longer times to PVI resumption compared with women with unassisted deliveries or Cesarean sections [21]. Moreover, time to PVI resumption has been linked to extensive perineal lacerations [20], with ~50% of women indicating pain from stitches as the primary reason for nonresumption [22].

However, others have found no significant differences in time to PVI resumption on the basis of delivery method [22–26] or no significant associations between severity of perineal tears and time to resumption of PVI [27]. Fewer studies have focused specifically on associations between vaginal lacerations and sexual desire, as opposed to behavior, but in those that did, findings indicate that women who experienced major trauma (i.e., episiotomy or third or fourth degree lacerations) were more likely to report decreases in sexual desire and nonsexual intimacy [9,28,29].

Hormones and Breastfeeding

Next to birth-related vaginal trauma, breastfeeding is also commonly studied in relation to postpartum sexuality. Accordingly, breastfeeding has been associated with vaginal pain late in the postpartum period [21] and more dyspareunia [27,30], as well as later resumption of sexual activity [31,32]. The effects of breastfeeding on sexual desire are variable with some studies reporting an association between breastfeeding and decreased sexual desire [7,17], while others report no association [33].

Though breastfeeding is generally thought of as exerting effects on sexuality via hormonal processes associated with lactation, particularly high prolactin, low estradiol, and low testosterone, other studies have shown that social factors surrounding breastfeeding may also be at play [34,35]. For example, breastfeeding women commonly report physical contact with their infant as fulfilling desire for contact that might otherwise be fulfilled with their partners [31]. Moreover, more experienced breastfeeders report less of a reduction in sexual frequency and sexual desire than women new to breastfeeding, suggesting that adjustment or experience moderate effects [36]. In addition, some breastfeeding women report difficulty viewing their breasts in a dual purpose way (which may itself be a cultural artifact), which could lead women to downplay their own sexuality while conceptualizing themselves as "breastfeeders" [37].

The Distinct Nature of Sexual Desire and Sexual Function

Sexual function and desire are often discussed interchangeably and analyzed as if they are the same construct, which makes it difficult to pinpoint which aspects of sexuality might actually be changing during the postpartum phase. Several studies use *desire* as a component of sexual *function* along with frequency, enjoyment, and orgasm [36]. These studies often use the validated Female Sexual Function Index [38], but none have used validated questionnaires specific for individual measurement of sexual desire [29,39,40]. Use of questionnaires that do not specifically address desire may minimize the importance of desire because single questions can fail to encompass the social, emotional, and psychological factors involved in desire [41,42].

The overlapping but still distinct natures of sexual function and desire are further illustrated by research that found that sexual desire returned to prepregnancy levels around 3–4 weeks postpartum [36,43], around the same time women resume noncoital sexual activity [1,18]. In contrast, multiple studies have shown that couples do not resume PVI until 7–8 weeks after birth [1,44]. The discrepancy between activity and desire resumption may be an artifact of the medically prescribed limitation on vaginal penetration before 6 weeks postpartum.

Aims

The goal of this study was to explore factors associated with women's experiences of sexuality in the postpartum period, operationalized as the first 3 months following childbirth. To address prior limitations that have contributed to a current narrow understanding of women's postpartum sexual desire and behaviors, this study examined both the functional and the contextual factors that contribute to the overall multifaceted experience of sexuality. This study broadened the focus beyond the functional resumption of heterosexual intercourse to include masturbation and oral sex while considering the more typically studied variables: vaginal injury, fatigue, stress, breastfeeding, and body image. Additionally, relational experiences of postpartum women including partner's desire and support were considered while focusing on enjoyment and pleasure to capture a more complex and broad sense of sexuality in the postpartum phase.

Methods

Participants

Women (N = 304) were recruited through online advertisements and posters in the community (Table 1). Participants, 18 years of age or older, who had given birth within the last 7 years and had

Table 1 Sample demographics

Demographics	N (%)
Age	304
<20	6 (2)
20–24	56 (18)
25–29	84 (28)
30–34	91 (30)
35–39	46 (15)
40+	21 (7)
Age at most recent birth	303
<20	23 (8)
20–24	79 (26)
25–29	90 (30)
30–34	73 (24)
35–39	34 (11)
40+	4 (1)
Birth type	302
Single	293 (97)
Multiple	9 (3)
Delivery method	302
Vaginal	215 (71)
Assisted vaginal	13 (4)
Planned Cesarean	33 (11)
Emergency Cesarean	41 (14)
Sexual orientation	297
Heterosexual	258 (87)
Gay/lesbian	10 (3)
Bisexual	23 (8)
Other	6 (2)
Postpartum relationship status	297
Dating	8 (3)
Committed	280 (94)
Cohabitating but uncommitted	1 (0.3)
Separated and coparenting	4 (1.3)
Multiple relationships	4 (1.3)

been involved in parenting that child were included in the study. The women also had to have been in a sexual relationship with a partner during the 3 months following their most recent birth. Participants who had experienced intimate partner violence during the postpartum period were screened from the online questionnaire and subsequently provided with contact information for survivor help-lines. Women's ages ranged between 18 and 50 years (mean age 30.0 years, standard deviation [SD] = 6.10) and the mean time since their most recent birth was 2.31 years (SD = 1.06). Participants were diverse, with a wide range of education levels, occupations, and incomes, as well as diversity in sexual orientation.

Procedure

Approval for this study was obtained from the University of Michigan Institutional Review Board. Online recruitment advertisements and posters advised participants to follow a survey link where they completed a short screening questionnaire to determine their eligibility for study involvement; eligible participants then consented to study participation. The online survey sections included a Health and Background Questionnaire that addressed age, education, and income level, as well as occupation, sexual orientation, and relationship status during the postpartum period. Participants were then presented with questions pertaining to their pregnancy, and birth experience, including questions from the Questionnaire Measuring Attitudes About Labor and Delivery (QMAALD) [45]. Participants were subsequently asked about their experience during the postpartum period including energy level and breastfeeding experience, defining the "postpartum" period as the first 3 months following their most recent birth experience. Responses on postpartum experiences were also collected using a series of standardized questionnaires including the Perceived Stress Scale (PSS) [46], the Multidimensional Scale of Perceived Social Support (MSPSS) [47], and the Body Image Self-Consciousness (BISC) Scale [48]. Participants were asked about their perceptions of their partner's sexual desire during the postpartum period and were asked to report on their own sexual desire at the end of the survey by completing the Sexual Desire Inventory (SDI) [49]. Subject participation was compensated through entry into a raffle to win one of the two $50.00 prizes.

Materials

Pregnancy and Childbirth Experience Items

The QMAALD measured participant's emotional and cognitive experiences during childbirth and assessed women's satisfaction with their labor and delivery experience [45]. In a separate item, women were asked to indicate how they felt their partner's presence during the birth influenced their partner's sexual desires. Participants responded on a seven-point scale where 1 indicated that desire was negatively influenced and 7 indicated that birth had a positive influence on their partner's sexual desires.

Postpartum Experience Items

To investigate participant's perceptions of social support, the MSPSS was used, edited to reflect the past tense for retrospective analysis [47]. Fifteen questions probed agreement with statements regarding emotional support from family, friends, and the participant's significant other on a seven-point scale where 1 indicated "Very strongly disagree" and 7 indicated "Very strongly agree". Sum scores were obtained such that higher scores reflected participant's perceptions of their social support as high during the postpartum period.

Ten questions from the PSS were used to determine how frequently participants experienced feelings of stress and to assess their ability to handle daily problems [46]. Participants were asked to respond on a scale where 0 indicated "Never" and 4 indicated "Very often" to provide overall scores where higher scores indicated high stress during the postpartum period.

To investigate impressions of body image after birth, a shortened version of the BISC was employed [48]. Five items from the BISC were selected to assess how often women had feelings of body image discomfort or uncertainty during sexual activity in postpartum period. Responses were collected on a six-point scale where 1 indicated "Never" and 6 indicated "Always".

Participants were asked to indicate their average energy level on a typical day postpartum in a single questionnaire item. Women reported their level of fatigue on a seven-point scale where 1 indicated "Extreme fatigue" and 7 indicated "High energy".

Evidence of postpartum vaginal issues was assessed through several questions on labor and delivery experience. Women were asked to select their method of delivery (e.g., vaginally, vaginally by forceps or vacuum extraction, Cesarean section, etc.) as well as whether they experienced birth interventions (e.g., sutures, episiotomy, and extraction).

Women were also asked to describe how their baby was fed (e.g., exclusively breastfed from the breast, bottle-fed with breast milk, fed from the breast and bottle-fed with either breast milk or formula, or exclusively bottle-fed with formula). Those who indicated breastfeeding were asked a follow-up question to estimate the percentage of baby's feedings that were from the breast.

To determine changes in sexual behavior after childbirth, women were asked about the sexual activities they engaged in before birth for comparison with activity engagement postpartum. If participants indicated engagement in sexual intercourse, defined as sexual activity involving penetration (e.g., coitus, using a dildo/vibrator vaginally, etc.), oral sex, and/or masturbation before becoming pregnant, they were asked if they had engaged in such behaviors postpartum and to report on when during the postpartum period they resumed those behaviors. Those who indicated activity resumption were asked to indicate their level of enjoyment with their first sexual experiences post-childbirth, including first intercourse, oral sex, and masturbation if applicable. Participants were also asked to indicate whether they or their partner first initiated each behavior.

Assessments of Sexual Desire

Sexual desire during the postpartum period was primarily quantified through the use of the SDI, which measured aspects of postpartum sexuality including wish to engage in sexual behavior, strength of sexual thoughts, and the personal importance of sexual activity [49]. In addition, a single question was presented that asked the participant to compare their level of desire with their partners.

To investigate influences on postpartum desire, participants were asked to rank a preselected list of 15 factors that might contribute to experiences of both high and low sexual desire. Factors were chosen based on review of previous research that suggests an association between the factors and changes in postpartum sexuality and sexual function. Participants were asked to select the top three factors that contributed to their *highest* experience of sexual desire postpartum and rank those selected factors as first, second, and third most contributing. In a second question, participants were provided with the same list but asked to select and rank order the three items that most contributed to their *lowest* experience of sexual desire. Participants also were given the option to select "Other" and type in the factor they thought most influenced their desire if it was not provided in the list.

Perceptions of Partner's Sexual Desire

Women's perceptions of their partner's sexual desire were obtained using a subset of questions from the SDI [49], reworded to assess their *partner's* postpartum sexuality. Instructions specifically asked participants to consider their partner's desire during the postpartum period. The three questions included the following: "How strong was your partner's desire to engage in sexual activity with you?"; "How long could your partner comfortably go without having sexual activity of some kind with you?"; and "How often did your partner wish to engage in sexual activity with you?". The original SDI scales were used and scores on these items were summed to obtain a perception score. Higher scores indicated that participants perceived their partner's desire as high during the postpartum period. In a separate question, women were asked how important it was for them to fulfill their partner's desires. This question was not included in the perception score.

Main Outcome Measures

The main outcome measures in this study were time to resumption of sexual behavior after childbirth and women's retrospective reports of sexual desire during the postpartum period, measured by the SDI [49]. Other outcome measures included women's perceptions of their partner's sexual desire, breastfeeding status, birth experience (via QMAALD) [45], perceptions of social support (via MSPSS) [47], stress (via PSS) [46], and body image (via BISC) [48]. Women's identification of the factors that contributed to their experiences of postpartum desire was also included.

Results

An exploratory approach was used to determine which influences might be most strongly related to women's sexual experiences after childbirth. Data were analyzed using the Statistical Package for the Social Sciences.

Reengagements in Sexual Activity During the Postpartum Period

Postpartum sexual behavior (which activities, at what latency from birth) was examined in women who had engaged in the behaviors of interest before birth. In the postpartum period, 85% of women engaged in intercourse, 65% engaged in oral sex, and 61% engaged in masturbation. Table 2 details the frequencies of women resuming each activity in the three different time points postpartum. The majority of women resumed performing oral sex on their partner as well as engaging in masturbation early in the postpartum period, whereas receipt of oral sex and intercourse were resumed much later after birth.

A repeated-measures (RM) multivariate analysis of variance (MANOVA) was conducted to determine whether there were differences in women's reengagement rates for each sexual activity, with four sexual variables as the RM (masturbation, intercourse, receiving oral sex, and performing oral sex), and there was a significant effect, $F(2,128) = 10.70$, $P < 0.001$. Post hoc analyses revealed that women were significantly more likely to have engaged in intercourse during the postpartum period than oral sex or masturbation (P's < 0.005), with no significant difference between engagement in oral sex and masturbation. There was also a significant difference for time, $F(3,52) = 12.78$, $P < 0.001$, such that women performed oral sex significantly earlier than they engaged in intercourse, $P = 0.002$, or received oral sex, $P < 0.001$; time to performance of oral sex and masturbation did not significantly differ. Women engaged in masturbation significantly earlier than they received oral sex, $P < 0.001$, but not compared with when they engaged in intercourse. Moreover, women engaged in intercourse significantly earlier than they received oral sex, $P < 0.001$. Thus, analyses demonstrated that women reported performing oral sex earliest, followed closely by masturbation, then intercourse, and later by receiving oral sex.

The researchers were specifically interested in whether times to reengagement of the above sexual activities (intercourse, oral sex performance, oral sex receiving, and masturbation) were influenced by social and experiential factors. Accordingly, the same analyses as above were conducted but including the social-experiential variables of interest as covariates in an RM multivariate analysis of covariance. Table 3 lists how the variables of interest were related to the patterns of significant differences in time to resumption of the four sexual activities. Post hoc analyses suggested that factors related to partners' sexualities, along with general and birth-specific social support, were most strongly related to the variation in women's latency to reengagement in intercourse, oral sex, and masturbation.

In addition to resumption, women's enjoyment of sexual activity was also examined. There was a significant multivariate difference in enjoyment,

Table 2 Time to resumption of sexual activity following childbirth

	Time to resumption from birth*							
	0–6 weeks		7–12 weeks		>12 weeks		Total reengagement	
Activity	N	%	N	%	N	%	N	%
Vaginal intercourse	57	26	132	61	28	13	217	100
Oral sex partner receiving	68	56	39	32	10	8	117	96†
Oral sex birth mother receiving	24	20	35	30	46	38	105	88†
Masturbation	40	40	45	46	14	14	99	100

*Only women who reported prebirth engagement in each activity are included in each category
†Total reengagement for oral sex partner receiving and oral sex birth mother receiving does not sum to 100% due to the fact that some women engaged in performance of oral sex on their partner but did not receive oral sex themselves or vice versa

Table 3 Post hoc analysis of covariates to reengagement of four sexual activities

	Covariates	*F*	*P*
No effect on differences in time to activity reengagement	Vaginal trauma*	(3,51) = 15.79	<0.001
	Breastfeeding status	(3,51) = 3.65	0.019
	Fatigue	(3,51) = 3.23	0.030
	Perceived stress (PSS)	(3,50) = 3.91	0.014
	Body image (BISC)	(3,51) = 7.07	<0.001
Effect on differences in time to activity reengagement	Birth experience (QMAALD)	(3,49) = 1.56	0.211
	Social support (MSPSS)	(3,51) = 1.43	0.244
	Importance of partner's sexual fulfillment	(3,50) = 0.80	0.499
	Perceptions of partner's desire	(3,49) = 0.78	0.509

*Inferred by presence or absence of vaginal sutures
BISC = Body Image Self-Consciousness; MSPSS = Multidimensional Scale of Perceived Social Support; PSS = Perceived Stress Scale; QMAALD = Questionnaire Measuring Attitudes About Labor and Delivery

$F(2,46) = 6.39$, $P = 0.004$, with women reporting significantly highest enjoyment of masturbation ($M = 5.31$, SD = 1.53) compared with intercourse ($M = 4.52$, SD = 1.73), $P = 0.002$, or receiving oral sex ($M = 4.63$, SD = 1.76), $P = 0.010$, and no significant differences between intercourse and receiving oral sex. The researchers also examined rates of initiation by individuals vs. partners of the sexual activities. Chi-square analyses demonstrated that partners were significantly more likely to initiate the first postpartum intercourse experience, $\chi^2(1) = 7.75$, $P = 0.005$, and performance of oral sex on the new mothers, $\chi^2(1) = 47.11$, $P < 0.001$, compared with initiation by mothers. However, there was no significant difference in the likelihood of mothers vs. their partners initiating the first performance of oral sex on the partner.

Postpartum Sexual Desire

This study examined how participants ranked their top three potential influences on *high* postpartum desire from a set list compiled from factors cited in previous literature for their association with postpartum sexuality. Participants ranked three of the items as #1, #2, or #3, and top ranked items were analyzed as well as each item's average rank. Table 4 lists the rankings for each item's contributions to high desire. Women reported that high postpartum desire was most strongly related to partner influences and least strongly to birth or maternal factors such as vaginal issues or breastfeeding.

This research also examined how participants ranked their top three influences on *low* postpartum desire from a set list. Table 5 lists the rankings for each item's contributions to low desire. Factors related to fatigue and vaginal discomfort were most strongly related to low sexual desire, while partner-related factors were the least related.

Further analyses were conducted to explore associations with women's SDI scores. There was a positive association between how high women perceived their partners' desire to be and their own dyadic desire, $r(262) = 0.24$, $P < 0.001$, and total

Table 4 Frequency of factors influencing postpartum point of highest sexual desire by rank

Top three selected				First selected		
Rank	N	%	Item	Rank	N	%
1	50	18	Amount of intimate or close feelings toward my partner	1	62	22
2	47	17	My partner's level of interest in being sexual with me	2	50	18
3	33	12	Amount of sexual feelings	4	33	12
4	31	11	Amount of support from my partner	3	34	12
5	29	10	Personal level of fatigue	8	10	4
6	21	7	My hormones	5	22	8
7	18	6	Amount of available time	7	11	4
8.5	14	5	Baby's sleeping habits	10	7	3
8.5	14	5	Overall degree of vaginal discomfort from birth	7	11	4
10	11	4	Amount of stress	7	11	4
11	9	3	Feelings about my body	6	15	5
12	8	3	Degree of vaginal bleeding from birth	9	8	3
13	4	1	Amount of social support from others	11	2	1
14.5	3	1	Breastfeeding	11	2	1
14.5	3	1	Degree of vaginal dryness	12	1	1

Table 5 Frequency of factors influencing postpartum point of lowest sexual desire by rank

Top three selected				First selected		
Rank	N	%	Item	Rank	N	%
1	49	16	Personal level of fatigue	1	49	16
2	34	11	Baby's sleeping habits	3	30	10
3	29	10	Amount of available time	5	23	8
4	27	9	Amount of stress	6	19	6
5	25	8	Overall degree of vaginal discomfort from birth	2	42	14
6	22	7	Feelings about my body	4	27	9
7	19	6	Amount of sexual feelings	8	14	5
8	16	5	My hormones	7	16	5
9	14	5	Degree of vaginal bleeding from birth	9	12	4
10	13	4	Breastfeeding	7	16	5
11	10	3	Degree of vaginal dryness	11	8	3
12	7	2	Amount of intimate or close feelings toward my partner	12	7	2
13	6	2	Amount of support from my partner	13	5	2
14	5	2	My partner's level of interest in being sexual with me	10	9	3
15	3	1	Amount of social support from others	14	0	0

desire, $r(252) = 0.20$, $P = 0.001$, but not solitary desire, $r(275) = -0.004$, $P = 0.947$. Despite its high rank for contribution to high desire, partner support (MSPSS-significant other [SO]) was not significantly associated with any SDI scores (all P's > 0.061). Consistent with women's high ranking of fatigue as contributing to low desire, women's reports of their average postpartum energy level were significantly positively correlated with dyadic SDI scores, $r(264) = 0.13$, $P < 0.05$. There were no significant correlations between SDI scores and stress (PSS) or body image self-consciousness (BISC) (all P's > 0.110). An ANOVA also showed no significant difference by feeding method (e.g., breast vs. bottle) in any of the sexual desire scores (all P's > 0.200). Thus, women's perceptions of their partner's desire were correlated with their own desire, and fatigue was correlated with their desire to be sexual with another person more than stress, social support, body image, or method of baby feeding.

This study was also interested in how birth experiences might affect women's sexual desire during the postpartum period. There were no significant correlations between the SDI scores and the QMAALD, all P's > 0.347. However, women reported on how they felt their partner's presence during the birth affected their partner's sexual desire toward them, and this was significantly positively correlated with dyadic desire, $r(223) = 0.25$, $P < 0.001$, and total desire, $r(214) = 0.22$, $P = 0.001$, but not solitary desire, $r(235) = -0.01$, $P = 0.912$. A t-test was done to determine whether birth-related vaginal issues (e.g., tearing) contributed to sexual desire, but no significant differences were found between women who had one or more interventions (e.g., sutures, episiotomy, and assisted extraction) that may have contributed to vaginal trauma and women who did not have interventions that contribute to vaginal trauma (all P's > 0.158). Thus, partnered experiences surrounding the birth (e.g., how partner's presence affected women's partner's sexual desire) were linked with desire for partnered sexual activity during the postpartum, even though individual experiences such as perceptions of the birth experience or vaginal injury were not.

Discussion

The present study examined retrospective perceptions of postpartum sexuality using a comprehensive and inclusive approach while addressing a broader range of sexual behaviors than is typically studied, including intercourse, oral sex, and masturbation. Moreover, pleasure/enjoyment, in addition to latency to reinitiation, was studied. This study also incorporated a more contextually based approach to postpartum sexuality, exploring psychosocial and relational factors in addition to birth-related and maternal experiences. These results pointed to a more complex and rich picture that positions postpartum sexuality as both a specifically postpartum experience as well as an aspect of more global relational sexuality.

That postpartum women first engaged in performing oral sex over other sexual activities suggests that maternal postpartum sexuality may be driven at least in part by partners' sexual interests (actual or perceived). Women engaged in masturbation early—though later than performing oral sex—suggesting that women were comfortable

with their vulvas and genitals and thus countering suggestions that birth-related vaginal trauma might account for women performing oral sex rather than engaging in other genital sexual behaviors. Moreover, women engaged in masturbation before receptive oral sex despite both involving women's vulvas (and having the possibility of being limited to nonvaginal genital sexuality). This suggests that vaginal trauma from birth may be less critical to women's sexuality in the postpartum phase than gendered expectations of sexuality or partner's desires, including women's perceptions of their partners' (high) desire; certainly our own analyses failed to demonstrate links between vaginal trauma and the pattern of postpartum sexuality. Data showed that women's perceptions of their partner's sexual needs (e.g., belief that partner's desire is high; importance of fulfilling partner's desires) accounted for the differences in activity reengagement after childbirth. Bay-Cheng et al. also referenced the idea that women are socialized to derive gratification from fulfilling their partner's sexual needs and desires and that this may contribute to early resumption of oral sex on their partners as opposed to sexual activities specific to women's vaginas and vulvas [50]. The present results are in accord with Bay-Cheng et al. but pointed additionally to women experiencing agentic desire early in the postpartum period—e.g., for masturbation—but that this desire did not appear to be expressed in ways that brought partners into women's own genital sexual experiences.

A related possibility is that later resumption of cunnilingus after childbirth may relate to women's genital self-consciousness. Multiple studies show that women express negativity toward their genitals in the context of oral sex even though they respond positively in the context of other sexual activities (e.g., masturbation or intercourse) [51,52]. Hite further highlighted the contextual nature of genital body image by stating that women often hold back from orgasm when receiving oral sex due to embarrassment and self-consciousness [51]. Although these studies did not focus on postpartum women, previous findings related to postpartum body image suggest that genital self-consciousness is especially relevant to this population [17]. Accordingly, it may be that heightened genital self-consciousness, rather than birth trauma or vaginal pain, leads women to delay partnered sexuality that involves the mother's genitals.

However, women may simply initiate performing oral sex and masturbation earlier than intercourse because of medical proscriptions that strongly recommend women wait until their 6-week postpartum check-up to begin penetrative activities [36]. Obviously, this may directly lead to longer latency to intercourse, but it also has the indirect effect of positioning women specifically as nonexperts about their own vaginas and sexualities. In other words, these medical recommendations clearly indicate to women that desire, relational factors, or self-experienced vaginal health should not meaningfully contribute to decisions about partnered sexual behavior. Women clearly were interested in genital sexuality as 40% engaged in masturbation prior to the 6-week demarcation point. It thus appears critical that researchers and healthcare providers understand how and when women choose to reinitiate sexual activities and whether times to resumption do reflect medical proscriptions or other factors, particularly in light of the lack of any scientific evidence to support the proscriptive recommendation to wait 6 weeks.

In addition to partner-based effects on activity resumption, women's perceptions of their partner's sexualities were also found to be associated with their own sexual desire. A majority of women indicated that their degree of intimacy with a partner and their partner's interest in being sexual were the factors that most strongly contributed to their experiences of high sexual desire postpartum. Women's desire to behave sexually with a partner was also associated with their belief that their partner's presence during the birth had a positive influence on their partner's desire, again suggesting that partner perceptions may be associated with women's identification of their own desire (and countering lay assumptions that partner's presence during birth can have deleterious effects of later sexuality). These results provided further evidence on the importance of relationship quality and satisfaction in personal expression and consideration of individuals' sexualities and supported previous findings on the topic [14].

That vaginal injury was not found to influence either postpartum activity resumption or sexual desire pointed to the importance of social and relational factors in women's postpartum sexuality. These results highlighted the importance of considering partners and women's perceptions of their partners, as results showed these factors to be more salient to new mothers than vaginal issues in their reports of sexuality in the postpartum period. Research that moves beyond the biomedical assumptions that vaginal trauma and function are primary concerns for postpartum sexuality in all

women will allow for a greater understanding of the multifaceted nature of postpartum sexuality and may ultimately positively impact how sexual health is discussed with postpartum women.

Interestingly, solitary sexuality appeared to contribute to women's reports of enjoyment during the postpartum period. Reports of enjoyment were found to be highest for masturbation in comparison to partnered sexual activities such as intercourse and oral sex. Previous studies have suggested that physical contact with the infant during caregiving or breastfeeding may fulfill the need for intimacy previously filled by physical contact with their partners [31]. This infant-related intimacy fulfillment may also explain the higher enjoyment of masturbation such that women may enjoy time alone without physical contact and without the pressure to fulfill the needs of another individual. Additionally, women have reported that worrying about their baby's needs and fears that the baby will wake up during intercourse inhibit partnered sexual activity in the postpartum period [17]. Finally, women may enjoy sexual activity that is self-initiated, controlled, and directed and thus less likely to be mediated by fatigue, discomfort, and other inhibiting factors of desire.

Though previous studies have used sexual desire as a component of postpartum sexual function, this study supported a distinction between sexual desire and sexual behavior when studying postpartum sexuality. Women's perceptions of social support were found to contribute to resumption of sexual activity; however, social support was not associated with reported levels of sexual desire. Similarly, energy level was associated with increases in desire but was not found to contribute to resumption latency. Lastly, women's birth experience was not associated with desire but was linked with activity resumption. Due to the fact that desire and behavior have unique and sometimes contrasting associations with psychosocial factors, they obviously merit sustained attention as distinct albeit linked concepts. Conflating desire and behavior can lead to the risk of falsely assuming that variables strongly related to one equivalently influence the other.

There are limitations to this research. One is that this study collected retrospective accounts of women's postpartum experiences. Doing so necessarily means that more time has elapsed between the activities and the report, which can adversely affect accuracy. However, retrospective reports allowed for a much larger sample, which was important for an exploratory study such as this one. This study is also not representative of all postpartum women. Women had to have been in a sexual relationship after childbirth and these study results thus may not extend to single women or women choosing to abstain from sexual activity within the 3-month postpartum window proscribed in this study. Additionally, data were collected from study volunteers in an online self-report format and thus are less likely to include responses from women with limited access to computers or interest in completing a retrospective account of their experiences. In addition, physical intimacy involves activities beyond the sexual behaviors discussed in this article. Thus, the failure to address activities such as cuddling, kissing, and breast stimulation is another limitation of this study. Despite these limitations, this study provides rich interdisciplinary data on understudied aspects of postpartum sexuality, particularly by including activities beyond penetrative vaginal intercourse and incorporating questions related to social and relational variables, allowing attention to related influences not otherwise studied.

While this investigation was exploratory, it provides an expanded understanding of women's experiences of sexuality in the postpartum period. It also provides an opportunity to expand the education and counseling provided to childbearing women and their partners during healthcare interactions in anticipation of the postpartum period. Traditional biomedical discussions of postpartum sexuality mirror the same limitations as found in the literature. Standard recommendations focus on resumption of penetrative intercourse after 6 weeks and include the need for contraception. There is limited or no discussion of the potential for earlier desire, options for alternative expressions of intimacy, or exploration of what factors may interfere with resumption of intercourse beyond the artificial time frame of 6 weeks. Using the information gained from this investigation, healthcare providers could better inform women about the range of postpartum sexual behaviors, the variations of desire they may experience, and the interplay within the context of their relationship that may have more influence than the typical fears regarding vaginal trauma. Though further investigations are necessary to better inform healthcare providers of effective methods of education regarding postpartum sexuality for childbearing women and their partners, the need to start with an expanded conceptualization of postpartum sexuality is warranted.

Conclusions

In conclusion, this study provided evidence that women's perceptions of their partner's sexualities may have had more of an impact on postpartum sexuality than factors related to vaginal trauma and discomfort. Findings from this study contribute to an overall understanding of postpartum sexuality by incorporating a broader range of physical, relational, and social variables as well as sexual behaviors. Results also supported the development of studies that look separately at sexual desire and sexual behavior/function by showing that postpartum factors can have differing effects on different components of sexuality. This study supports women's sexual health by encouraging healthcare providers to discuss resumption of sexual activity in terms of social and relationship context instead of determining readiness purely by physical healing.

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Statement of Authorship

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