



A Longitudinal Investigation of Couples' Sexual Growth and Destiny Beliefs in the Transition to Parenthood

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Received: 8 March 2021 / Revised: 27 September 2021 / Accepted: 14 December 2021
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Abstract

Beliefs about sexuality tend to become more salient during sexual challenges and are associated with how individuals respond to these difficulties and, in turn, their sexual well-being. The transition to parenthood is marked by significant changes to couples' sexuality. As such, this period of vulnerability may be an important context in which these beliefs impact how couples manage sexual stressors and may have implications for their sexual well-being. In a longitudinal dyadic study, we examined whether couples' sexual growth beliefs (e.g., beliefs that sexual problems can be resolved through effort) and sexual destiny beliefs (e.g., beliefs that sexual problems reflect incompatibility with their partner) correspond with changes to various facets of couples' sexual well-being over time. First-time parent couples ($N = 203$) completed online surveys assessing these beliefs in pregnancy (32 weeks) and measures of sexual well-being (satisfaction, desire, and distress) in pregnancy (20 and 32 weeks) and across the postpartum period (3, 6, 9, 12 months). Dyadic latent growth curve models showed that expectant mothers who reported stronger sexual destiny beliefs in pregnancy reported higher sexual distress and lower sexual satisfaction at 3 months postpartum. When partners reported stronger sexual destiny beliefs in pregnancy, both they and new mothers reported greater sexual desire at 3 months postpartum. Unexpectedly, partners' higher sexual growth beliefs in pregnancy predicted mothers' lower sexual desire at 3 months postpartum. Sexual growth and destiny beliefs were not associated with change in couples' sexual well-being beyond 3 months postpartum. Findings shed light on the potential benefits and costs of sexual growth and destiny beliefs for couples' sexual well-being early in the postpartum period, but not over time.

Keywords Sexual well-being · Transition to parenthood · Sexual growth and destiny beliefs · Sexual desire · Sexual satisfaction · Sexual distress

Introduction

As couples navigate the transition to parenthood, they are faced with an array of changes that can have consequences for their sexual well-being. Indeed, this period—from pregnancy to 12 months postpartum—is marked by novel sexual concerns, including fluctuations in levels of sexual desire, sexual distress, and sexual satisfaction for both partners (Ahlborg et al., 2005; Fitzpatrick et al., 2021; Rosen et al., 2020, 2021; Schlagintweit et al., 2016). Moreover, both mothers and partners report significantly lower desire and higher sexual distress relative to couples who are not in the transition to parenthood, with mothers showing greater disruptions in these facets compared to their partners (Schwenck et al., 2020). These declines in sexual well-being may have implications for the couple (e.g., relationship conflict) and, in turn, the family unit (e.g., parent–child relationship, child development; Goldberg, 2014; Stroud, 2015). Thus, despite

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the transition to parenthood being a normative life event, disruptions to sexual well-being are common; identifying factors that promote or interfere with sexual adjustment could help new parents adapt to these changes more effectively and prevent more persistent difficulties.

While past research has predominately focused on biomedical predictors of sexual function in the transition to parenthood (see Leeman & Rogers, 2012; McBride & Kwee, 2017 for reviews), there is emerging evidence of psychosocial predictors of sexual well-being, such as greater empathy and relationship satisfaction (Dawson et al., 2020, 2021, 2022; Rosen et al., 2017). The demands of caring for an infant, changing relationship dynamics, and subsequent changes to sexual well-being are experienced by both members of a couple, underscoring the interpersonal nature of the transition to parenthood. Moreover, it is essential to examine how sexual well-being changes across this period in order to identify vulnerable periods in which targeted prevention and interventions can be implemented. Yet, there is a dearth of dyadic and longitudinal studies examining the associations between psychosocial factors and various facets of couples' sexual well-being over time.

According to the literature, individuals have personal, underlying beliefs as to whether certain components of their lives are changeable (i.e., growth orientation) and fixed (i.e., destiny orientation; Dweck, 2012). Growth and destiny beliefs have been studied across various contexts, including intelligence, personality, and relationships and play a key role in shaping individuals' responses to life challenges (Costa & Faria, 2018; Dupeyrat & Mariné, 2005; Franiuk et al., 2002; Plaks et al., 2009; Yeager et al., 2014). These beliefs have also been studied in relation to sexual difficulties (Bohns et al., 2015; Maxwell et al., 2017; Sutherland & Rehman, 2018). Individuals who hold stronger sexual growth beliefs think that sexual satisfaction fluctuates and can be maintained or improved with effort, whereas those who hold stronger sexual destiny beliefs believe that sexual satisfaction is achieved by natural compatibility between partners (e.g., the right "fit") and sexual difficulties are reflective of whether couples are "meant to be" (Maxwell et al., 2017). Sexual growth and destiny beliefs have been shown to shape relationship and sexual satisfaction, with cross-sectional evidence indicating that they are associated with couples' sexual satisfaction in the postpartum period (Maxwell et al., 2017). In the face of novel sexual stressors, such as those experienced during the transition to parenthood, sexual growth and destiny beliefs may become more salient and affect how couples respond to changes to their sexuality, thus impacting their sexual well-being. In the present study, we sought to examine sexual growth and destiny beliefs as predictors of the average trajectories of new mothers' and partners' sexual well-being—including desire, satisfaction, and distress—across the postpartum period.

Trajectories of Sexual Well-Being in the Transition to Parenthood

Sexual well-being includes both positively and negatively valenced domains, including sexual desire (i.e., interest in sex), sexual satisfaction (i.e., appraisal of one's overall sexual relationship; Lawrance & Byers, 1995), and sexual distress (i.e., concerns about one's sex life; DeRogatis et al., 2008). Prior research has established that while correlated, these domains of sexual well-being are conceptually distinct and have different predictors and patterns of change over time (Brotto et al., 2009; Mitchell et al., 2013; Rosen et al., 2020, 2021; Stephenson & Meston, 2010). A recent study comparing the sexual well-being of new parent couples and community controls across three time-points demonstrated that new parents reported lower sexual satisfaction, desire, and higher distress across 3, 6, and 12 months postpartum (Schwenck et al., 2020). These changes were particularly pronounced for new mothers as they reported clinically significant levels of low sexual desire and high sexual distress, in comparison with both control women and the partners of new mothers. These findings are consistent with past research on patterns of sexual well-being in the postpartum period (Ahlborg et al., 2005; Condon et al., 2004; DeJucibus & McCabe, 2002; Lévesque et al., 2021; Sagiv-Reiss et al., 2012).

Yet, the majority of past research has examined sexual well-being cross-sectionally and has not assessed the degree of change and variability in these changes over time. Moreover, few studies have statistically accounted for the interdependence between members of a couple. Two studies have addressed these limitations by using dyadic latent growth curve analyses to identify trajectories of mothers' and partners' sexual well-being. In one study, researchers identified unique trajectories of sexual desire, satisfaction, and distress at the level of the couple during the transition to parenthood (Rosen et al., 2020, 2021). For example, for sexual desire, three unique trajectories were revealed that captured varying initial levels of desire and change in desire over time. In another study, Dawson et al. (2021) demonstrated that, on average, mothers' sexual distress significantly increased from 20-week pregnancy to above clinical cut-offs at 3 months postpartum, then decreased significantly by 12 months postpartum, but remained above the clinical cut-off. However, contrary to expectations, partners' sexual distress remained stable and low (i.e., did not change significantly in pregnancy or the postpartum period) across this same time frame. Although an average trajectory of sexual distress has been previously established, no studies to our knowledge have examined the overall average trajectories of mothers' and partners' sexual satisfaction and desire from pregnancy through the postpartum period. The first step towards examining sexual growth and destiny beliefs as predictors of

sexual well-being is to establish the average trajectories of sexual satisfaction, desire, and distress over the transition to parenthood.

Sexual Growth and Destiny Beliefs

Destiny and growth beliefs about one's relationship have been shown to shape a variety of relationship outcomes, including commitment, empathy, interpretation of conflict, and satisfaction (Franiuk et al., 2002; Freedman et al., 2018; Knee, 1998; Knee & Canevello, 2006; Knee et al., 2003; Schumann et al., 2014). With respect to sexual beliefs, in a series of cross-sectional, experimental, and daily experience studies with community couples, endorsing stronger sexual growth beliefs was often associated with greater sexual and relationship outcomes compared to holding stronger sexual destiny beliefs. Specifically, when individuals scored high on an individual difference measure of sexual growth beliefs and on days when they reported stronger sexual growth beliefs than they typically do, they reported more positive sexual experiences and greater relationship quality. Further, when individuals scored high on an individual difference measure of sexual destiny beliefs, they reported more daily negative sexual experiences, yet, endorsing greater daily sexual destiny beliefs was associated with their higher relationship quality (Maxwell et al., 2017). Three experimental studies have examined the effects of sexual beliefs. Participants primed with sexual growth beliefs who were told they were sexually compatible with their partner (versus incompatible) reported higher sexual satisfaction, whereas participants primed with sexual destiny beliefs who were told they were sexually or financially compatible with a partner (versus incompatible) reported higher sexual satisfaction (Maxwell et al., 2017). In two studies conducted by Bohns et al., (2015), they randomly assigned participants into hypothetical sexual challenge or non-sexual challenge conditions. Across both studies, they found that growth and destiny beliefs about sexual chemistry were only related to the participants' reported behavior (e.g., coping responses and willingness to end a relationship) in the sexual challenge conditions (Bohns et al., 2015). Two studies demonstrated similar patterns of results in couples experiencing difficulties in their sexual relationship. In a clinical sample of women with low sexual desire, women with stronger sexual growth beliefs reported higher desire. In contrast, when women and their partners reported stronger sexual destiny beliefs, the partners reported lower desire (Raposo et al., 2021). However, these effects did not persist one year later. In a cross-sectional study of couples in the postpartum period, Maxwell et al. (2017) found that new mothers and their partners who endorsed stronger sexual growth beliefs reported greater sexual and relationship satisfaction, whereas when mothers held higher sexual destiny beliefs, both they and their partners reported lower relationship satisfaction.

Establishing whether and how these beliefs are associated with changes in various facets of new parents' sexual well-being over time is important for understanding how to mitigate against declines in sexual well-being and its associated consequences.

Theoretically, growth and destiny beliefs impact the types of relationship maintenance behaviors individuals use when experiencing an interpersonal challenge (Bohns et al., 2015; Schumann et al., 2014; Sutherland & Rehman, 2018). When faced with a real or hypothetical stressor across relational and sexual domains, people who endorse more growth-oriented beliefs are more likely to report engaging in adaptive coping behaviors (e.g., enhanced communication, fewer destructive responses such as ignoring or ending the relationship) compared to those who endorse more destiny-oriented beliefs who report using less adaptive coping (e.g., avoidance; Bohns et al., 2015; Knee, 1998; Sutherland & Rehman, 2018). Importantly, one study demonstrated that compared to women who expected to experience a sexual challenge, only those who did not expect to experience a sexual challenge evidenced no significant differences in their coping strategies across growth or destiny orientations (Sutherland & Rehman, 2018). These studies underscore the potential benefits of growth beliefs and detriments of destiny beliefs for sexual well-being, and importantly, that these beliefs may become more salient in the context of a sexual challenge such as those experienced by new parents in the transition to parenthood.

With the many novel sexual challenges that arise during the transition to parenthood (Ahlborg et al., 2005; Rosen et al., 2020, 2021; Serrano Drozdowskyj et al., 2020), this period is an ideal context to study the effects of sexual growth and destiny beliefs for new parents. The emergence of sexual changes in pregnancy and the anticipation of further challenges in the postpartum period may position pregnancy as a critical time to identify and modify beliefs about sexuality. Couples who believe that these challenges can be worked through may be able to navigate these changes most effectively. For example, holding stronger growth beliefs may motivate individuals to engage in behaviors (e.g., communication, support seeking) that contribute to enhanced sexual well-being. In contrast, it may be less helpful for expectant parents, and mothers especially, to hold stronger sexual destiny beliefs because this may elicit fewer effective behaviors (e.g., avoidance, distraction) during a time of novel perinatal changes that impact women's sexual well-being to a greater degree. Targeting sexual growth and destiny beliefs early in pregnancy may be crucial to mitigating their consequences as these kinds of coping behaviors have been implicated in the sexual and relationship adjustment of couples (Bodenmann et al., 2010; Kraemer et al., 2011), including new parents (Alves et al., 2018; Goldberg et al., 2010). Importantly, how one partner manages a shared stressor, such as new

parenthood, is in turn associated with the well-being of the other member of the couple (Lee & Roberts, 2018; Peterson et al., 2008). As such, we may expect that beliefs held by one partner would be tied to changes in their partners' sexual well-being.

The Current Research

In a longitudinal and dyadic study, we examined whether sexual growth and destiny beliefs in pregnancy predicted couples' sexual well-being at 3 months postpartum and across the postpartum period (3 to 12 months). To do so, we first established the average trajectories of sexual desire, satisfaction, and distress in pregnancy and the postpartum period (i.e., 20-week gestation to 3 months postpartum and 3 months postpartum to 12 months postpartum) including associations between mothers' and partners' average sexual well-being at 3 months (i.e., intercepts) and their change over time (i.e., slopes). We predicted that mothers' and partners' sexual desire and satisfaction would decline from pregnancy (20 weeks) to 3 months postpartum and then improve from 3 to 12 months postpartum, whereas sexual distress would increase in pregnancy and decrease in the postpartum period, as previously established in this same dataset (*masked*) (Hypothesis 1). We also predicted that mothers' and partners' sexual well-being outcomes would be positively associated at 3 months postpartum (Hypothesis 2), however, we made no a priori prediction about whether change in their sexual well-being outcomes from 3 to 12 months would be associated given a lack of prior evidence.

Regarding our main objective, we hypothesized that mothers and partners with greater sexual growth beliefs in pregnancy would have higher sexual desire and satisfaction, and lower sexual distress at 3 months postpartum (i.e., intercepts) and would experience a greater increase in sexual desire and satisfaction, and a greater decrease in distress over the postpartum period (i.e., slopes) (Hypothesis 3). We also predicted that mothers and partners with greater sexual destiny beliefs in pregnancy would have lower sexual desire and satisfaction, and higher distress at 3 months postpartum (i.e., intercepts) and would experience weaker increases in sexual desire and satisfaction, and weaker decreases in distress across the postpartum period (i.e., slopes) (Hypothesis 4). Finally, we predicted that changes to sexual desire, sexual satisfaction, and sexual distress (i.e., Hypothesis 1) and their links with sexual growth and destiny beliefs (i.e., Hypotheses 3 and 4) would be stronger among mothers than partners, considering they experience more extensive biopsychosocial changes during pregnancy and postpartum than partners (McBride & Kwee, 2017) (Hypothesis 5).

Method

Participants

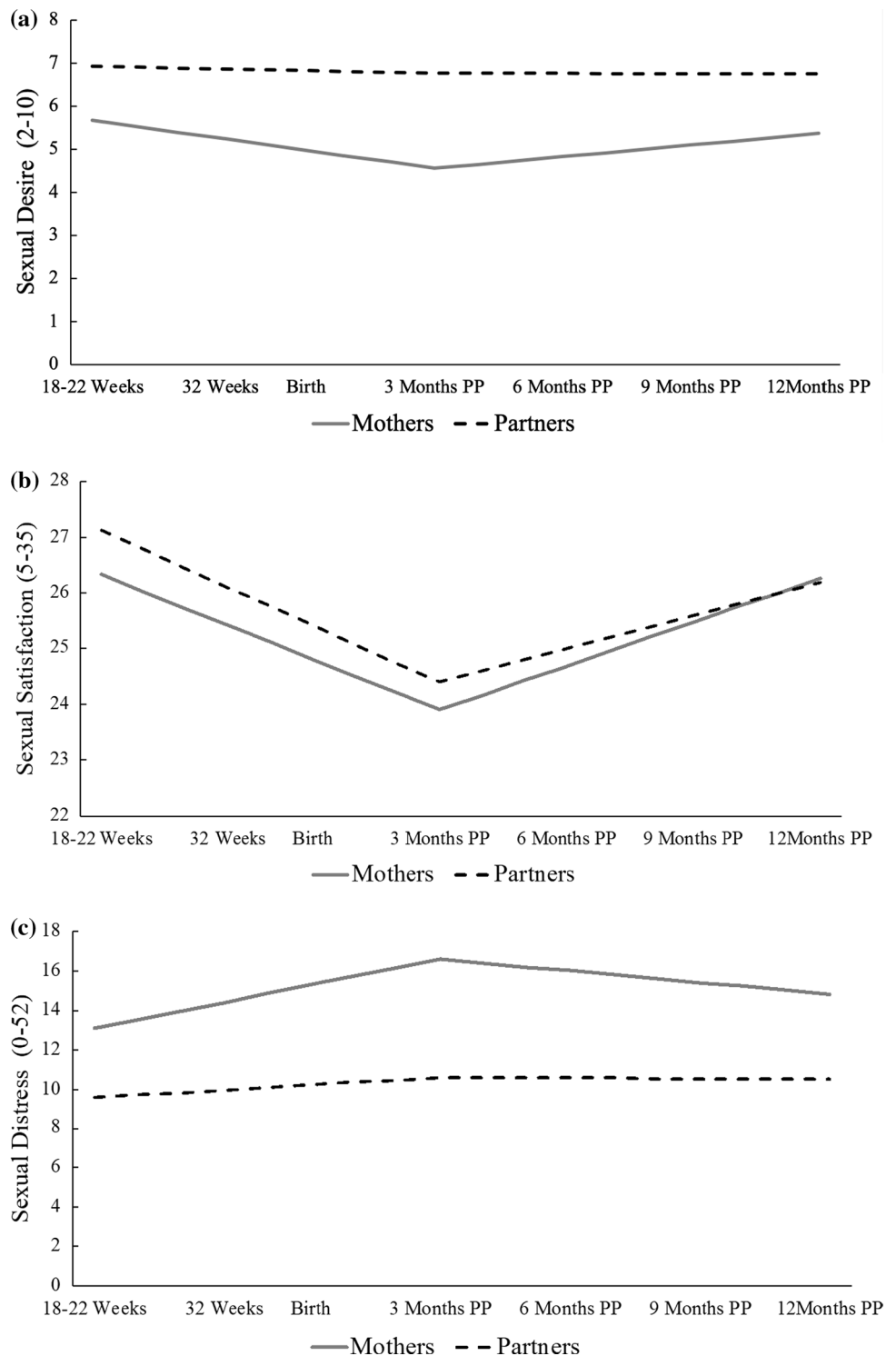
Couples in the transition to parenthood were recruited mid-pregnancy as part of a longitudinal study on sexuality and relationships in pregnancy and postpartum, some results of which have been published (Dawson et al., 2021; Rosen et al., 2021; Dawson et al., 2022; Leonhardt et al., 2021). None of the previously published manuscripts utilized sexual growth and destiny beliefs as predictors of sexual well-being. Although the average trajectory of sexual distress overlaps with a published manuscript (Dawson et al., 2021), the average trajectories of sexual desire and satisfaction have not been examined. Eligibility criteria for the study required that both members of the couple were: (1) 18 years of age or older; (2) in a romantic relationship for at least six months; (3) fluent in English; and (4) living in Canada or the United States. The pregnant partners must: (5) have not previously given birth and (6) have a singleton and uncomplicated pregnancy. Of the 252 couples recruited and enrolled in the study, the sample consisted of 215 couples (see Fig. 1 for flow of recruitment via the Open Science Framework at: https://osf.io/zb8my/?view_only=41bd3eeee2a14f0d9ba0cc187b12e664). However, couples ($n = 12$) who became pregnant again during the study period were removed from the current sample, as their transition to parenthood experience may differ from those with only one child (Figueiredo et al., 2008). As a result, the final sample for the present study was 203 couples (see Table 1 for sample characteristics).

Measures

Sexual Growth and Destiny Beliefs

To examine sexual growth and destiny beliefs, couples responded to 10 items from the Implicit Theories of Sexuality Scale—Short Form (Maxwell et al., 2017). Five items assess sexual destiny beliefs, such as “struggles in a sexual relationship are a sure sign that the relationship will fail”, and five items assess sexual growth beliefs, including “successful sexual relationships require regular maintenance.” Items are rated on a 7-point scale (1 = *strongly disagree* to 7 = *strongly agree*). Items from each subscale were averaged, with higher scores reflecting greater endorsement of each belief. The sexual growth beliefs subscale ($\alpha = 0.79$) and sexual destiny beliefs subscale ($\alpha = 0.82$) demonstrated strong internal consistency.

Fig. 1 Trajectories of sexual desire (a), sexual satisfaction (b), and sexual distress (c) mid-pregnancy to 12 months postpartum for mothers and partners



Sexual Desire

Sexual desire in the past four weeks was assessed using the equivalent two sexual desire items (“Over the past 4 weeks, how often did you feel sexual desire or interest?” and “Over the past 4 weeks, how would you rate your level (degree) of

sexual desire or interest?”) from the Female Sexual Function Index (FSFI; Rosen et al., 2000) and the International Index of Erectile Function (IIEF; Rosen et al., 1997), for men and women, respectively. To ensure that scores were on the same scale and comparable across participants regardless of the sexual function measure they completed, scoring for the

Table 1 Sample characteristics ($N=203$)

	Mothers	Partners
Age (y), M (SD)	30.04 (3.49)	31.58 (4.51)
Partner Gender, n (%)		
Man	–	196 (96.6%)
Woman	–	7 (3.4%)
Sexual Orientation, n (%)		
Heterosexual	182 (89.7%)	194 (95.6%)
Bisexual	12 (5.9%)	3 (1.5%)
Lesbian	6 (3.0%)	4 (2.0%)
Pansexual	2 (1.0%)	–
Asexual	1 (0.5%)	–
Between Lesbian and Straight	–	1 (0.5%)
Ethnicity/Culture, n (%)‡		
White	160 (78.8%)	165 (81.2%)
Asian American/Asian	19 (9.4%)	10 (4.9%)
Multiracial	9 (4.4%)	7 (3.4%)
East Indian	6 (3.0%)	5 (2.5%)
Black	3 (1.5%)	3 (1.5%)
Middle Eastern/Central Asian/South Asian	3 (1.5%)	7 (3.4%)
First Nations	2 (1%)	2 (1.0%)
Hispanic	–	2 (1.0%)
Native Hawaiian/Pacific Islander	–	2 (1.0%)
Relationship type, n (%)		
Married/Common-Law/Engaged	186 (91.6%)	185 (91.1%)
Living With/Dating	17 (8.4%)	17 (8.4%)
Other	–	1 (0.5%)
Relationship Duration (years), M (SD)	6.64 (3.60)	6.64 (3.60)

‡For women, one individual selected “other”, but did not specify their ethnicity. For partners, one individual self-identified as Ashkenazi Jewish and was included in the European ethnicity row. Age is based on data from 198 mothers and 195 partners due to missing data on this variable

desire subscale followed that described in the IIEF and not the FSFI (i.e., we did not multiply the desire subscale score by the domain factor from the FSFI). Thus, the two items were summed to give a score ranging from 2 to 10, where higher scores indicate greater desire. The two items from the FSFI ($\alpha = 0.89$ – 0.91) and IIEF ($\alpha = 0.86$ – 0.89) demonstrated strong reliability across time-points and in a similar sample of couples transitioning to parenthood (Schwenck et al., 2020).

Sexual Satisfaction

To evaluate participants' subjective global satisfaction with their sexual relationship with their partner in the past four weeks, the Global Measure of Sexual Satisfaction (GMSEX) (Lawrance & Byers, 1995) was administered. This measure includes five items rated on 7-point bipolar scales (e.g.,

pleasant–unpleasant). Items were summed to provide a total score (5 to 35), where higher scores reflect greater sexual satisfaction. The GMSEX has shown strong psychometric properties in pregnancy and postpartum samples (Beveridge et al., 2018; Tavares et al., 2019; Vannier & Rosen, 2017) and demonstrated strong internal consistency across all time-points for mothers ($\alpha = 0.93$ – 0.96) and partners ($\alpha = 0.94$ – 0.96).

Sexual Distress

Worries and concerns about one's sex life in the past four weeks were examined using the 13-item Female Sexual Distress Scale (FSDS; Derogatis et al., 2002), which has been validated for use with women and men (DeRogatis et al., 2008; Santos-Iglesias et al., 2018a). This measure has shown strong reliability in a similar sample of couples navigating the transition to parenthood (Dawson et al., 2020, 2021, 2022; Vannier & Rosen, 2017). Total scores range from 0 to 52, with higher scores indicative of greater sexual distress. The established cut-off for clinically significant distress associated with sexual problems is a total score of 11 or greater for women (DeRogatis et al., 2008). A score of 19.5 or greater has been identified as a clinical cut-off for men; however, this should be interpreted with caution as there is only preliminary evidence to support this cut-off (Santos-Iglesias et al., 2018b). In this sample, the FSDS demonstrated strong internal consistency for mothers and partners ($\alpha = 0.93$ to 0.96 and 0.92 to 0.94 , respectively).

Procedure

Couples were recruited between May 2016 and April 2018 through various sources, including in-person at the (IWK Health Care Centre ultrasound clinic in Nova Scotia) ultrasound clinic, online and community advertisements, and word of mouth. Online and community advertisements were posted on websites across North America (e.g., Kijiji and Facebook), in local community centers and stores, and health offices. For in-person recruitment at the ultrasound clinic, research staff reviewed medical records and identified potentially eligible participants prior to their 20-week appointment. Once identified, staff at the ultrasound clinic informed potential participants about the study upon check-in for their appointment. For those who were interested, a research assistant described the study and conducted an eligibility screening. If interested and eligible, the research assistant enrolled the couple in the study. For those who were recruited via advertisements, a screening call was scheduled with both members of the couple in which a research assistant provided more details about the study and verified eligibility prior to enrollment.

Couples completed online surveys in pregnancy (20-week and 32-week pregnant) and postpartum (3, 6, 9 and

12 months postpartum) hosted on Qualtrics. Survey links were emailed to participants and expired after four weeks. All participants reviewed and completed an online consent form before accessing the first survey. Participants who did not complete the survey within the first 48 to 72 h were called by a research assistant to ensure they received the email and link (Dawson et al., 2020, 2021, 2022; Rosen et al., 2020, 2021). Follow-up reminders were emailed one and three weeks following the initial survey email. For completing all surveys, couples received up to \$210 Cdn (\$105 each) in Amazon gift cards.

Data Analysis

The hypotheses and analytic approach for this study were preregistered and all data and syntax can be found at https://osf.io/zb8my/?view_only=ae6d26fb8dc142d2908e358b37d788ef. Statistical analyses were conducted using *Mplus* 8.4. If a participant was missing less than 50% of the items in a total (or sub-scale), a total score was computed using the means of the responded items. The mean was then converted back to a total score. Missing value replacement was not done for subscale or total scores with three or fewer items (i.e., for sexual desire). Missing data due to attrition were treated using the full information maximum likelihood function (FIML; Muthén & Muthén, 1998–2015).

Our main objective was to examine sexual growth and destiny beliefs at 32-week pregnancy (own and partner's) as predictors of the trajectories of mothers' and partners' sexual desire, satisfaction, and distress postpartum. Before testing this key objective, we first had to establish average trajectories of sexual well-being across the transition to parenthood. Unconditional dyadic latent growth curve models (DLGCM; Duncan et al., 1999) within a structural equation model (SEM; Kenny et al., 2006) were conducted to establish trajectories of sexual satisfaction and sexual desire. This model was previously conducted for sexual distress <https://osf.io/p9g3r/> in this same dataset but will be summarized here in the results. DLGCMs were tested within an Actor-Partner Interdependence Model (APIM; Kenny et al., 2006). Partners were distinguished based on the person who gave birth (i.e., mother) and the person who did not give birth (i.e., the partner). To test whether there were differences between mothers and partners for intercepts and slopes, we conducted Wald χ^2 tests within the DLGCMs. Sexual growth and destiny beliefs were then entered simultaneously into conditional models as time-invariant predictors of the variance in the postpartum intercepts and slopes for each sexual well-being outcome. As such, only three conditional models were conducted. All of the effects were tested and associations among study variables were controlled for within a single model for each outcome. Given this approach, which limited the number of models and comparisons conducted, the number

of Type I errors may have been reduced. By preregistering our hypotheses and analysis plan, it is also possible that we limited the number of Type I errors in other ways, including by preventing researcher degrees of freedom in analytic decisions.¹

All DLGCMs utilized a piece-wise model (Perales, 2019), where the 3-month time-point was used as a knot point. This knot point reflects when we expected shifts in the trajectories to occur based on both prior research of the transition to parenthood (Galazka et al., 2015; Hyde et al., 1996; McBride & Kwee, 2017; Nakić Radoš et al., 2015; Serati et al., 2010; Vannier & Rosen, 2017; Yıldız, 2015) and our previous analyses with this dataset (Dawson et al., 2021; Rosen et al., 2021; Dawson et al., 2022; Leonhardt et al., 2021). The weights for each of the time-points were adjusted to reflect the different sampling timeframes in pregnancy and postpartum. Model fit was evaluated using the following criteria: (1) a non-significant chi-square value, (2) Confirmatory Fit Index (CFI) and Tucker–Lewis Index (TLI) greater than 0.95, (3) Root Mean Square Approximation of Error (RMSEA) less than 0.06, with a 90%CI that does not contain 0.08, and (4) Standardized Root Mean Square Residual (SRMR) less than 0.08 (Hooper, 2008).

Results

Correlations and descriptives of all study variables are presented in Table 2. Fixed and random estimates of intercepts and slopes for each outcome are reported in Table 3. See Fig. 1 (a–c) for depictions of the trajectories for each outcome.

Sexual Desire

Unconditional Dyadic Latent Growth Curve Model

Model fit for sexual desire was good: $\chi^2(45) = 65.35, p = 0.03$; CFI = 0.98, TLI = 0.97, RMSEA = 0.05 [CI = 0.02 – 0.07]; SRMR = 0.05. Consistent with Hypothesis 1, mother's sexual desire significantly declined in pregnancy and increased in the postpartum period. However, inconsistent with Hypothesis 1, partners' sexual desire did not significantly change during pregnancy or postpartum. Random estimates of the intercepts were all significant, indicating variability in sexual desire at 3 months postpartum for mothers and partners. Random estimates of the pregnancy and postpartum slopes for both mothers and partners were all significant, indicating

¹ In response to reviewer comments on the manuscript regarding potential gender differences in the effects of sexual growth and destiny beliefs, we conducted all conditional models with and without same-gender couples. All results across sexual well-being outcomes remained consistent when excluding these couples.

Table 2 Descriptives and correlations of sexual well-being outcomes and sexual growth and destiny beliefs across time-points

Variable	1	2	3	4	5	6	7	8	9	10
1.SDe-B	.01	.47**	-.35**	.65**	.36**	-.19**	.51**	.30**	-.16*	.45**
2.SS-B	.09	.56**	-.55**	.43**	.69**	-.42**	.34**	.59**	-.32**	.25**
3.SD-B	-.06	-.52**	.24**	-.24**	-.47**	.66**	-.27**	-.35**	.58**	-.16*
4.SDe-32	.66**	.12	-.13	.14*	.45**	-.29**	.45**	.29**	-.17*	.43**
5.SS-32	.09	.55**	-.49**	.20**	.55**	-.61**	.23**	.53**	-.36**	.18*
6.SD-32	-.11	-.42**	.72**	-.20**	-.48**	.25**	-.20**	-.35**	.56**	-.12
7.SDe-3 M	.52**	.05	-.12	.62**	.11	-.11	.09	.46**	-.29**	.62**
8.SS-3 M	.12	.51**	-.37**	.19*	.51**	-.32**	.18*	.47**	-.46**	.29**
9.SD-3 M	-.10	-.39**	.55**	-.15*	-.39**	.54**	-.14	-.62**	.15*	-.10
10.SDe-6 M	.53**	.09	-.10	.61**	.18*	-.09	.73**	.21**	-.13	.07
11.SS-6 M	.06	.41**	-.32**	.10	.49**	-.28**	.02	.65**	-.49**	.16*
12.SD-6 M	-.00	.37**	.68**	-.07	-.38**	.60**	.05	-.48**	.69**	-.06
13.SDe-9 M	.48**	.15*	-.18*	.51**	.16*	-.15	.61**	.21**	-.18*	.69**
14.SS-9 M	.00	.46**	-.39**	.08	.43**	-.28**	.02	.62**	-.49**	.17
15.SD-9 M	-.01	-.43**	.60**	-.02	-.34**	.61**	-.02	-.45**	.69**	-.12
16.SDe12M	.51**	.21**	-.13	.61**	.19*	-.19*	.60**	.20*	-.16*	.70**
17.SS-12 M	.04	.46**	-.29**	.10	.35**	-.26**	.08	.58**	-.33**	.23**
18.SD-12 M	-.04	-.37**	.48**	-.08	-.26**	.51**	-.06	-.48**	.60**	-.12
19.SGB-32	-.09	.17*	.01	-.08	.06	.03	-.02	-.02	-.04	.00
20.SDB-32	.14*	-.07	.05	.20**	-.02	.04	.13	.00	.14	.09
Mothers' M	5.77	26.46	13.45	5.24	25.25	14.08	4.54	23.83	16.96	4.92
Mothers' SD	2.00	7.00	10.38	1.98	7.00	9.69	1.91	7.24	11.07	1.91
Partners' M	6.97	27.26	9.43	6.60	26.55	9.45	6.81	24.08	11.12	6.76
Partners' SD	1.61	6.89	8.31	1.86	6.60	8.16	1.84	7.46	9.27	1.76
Variable	11	12	13	14	15	16	17	18	19	20
1.SDe-B	.26**	-.12	.50**	.32**	-.25**	.42**	.23**	-.20**	-.02	.08
2.SS-B	.43**	-.32**	.39**	.54**	-.37**	.32**	.45**	-.38**	.11	-.18**
3.SD-B	-.34**	.61**	-.29**	-.37**	.68**	-.29**	-.32**	.61**	.02	.14*
4.SDe-32	.21**	-.12	.46**	.27**	-.21**	.43**	.20**	-.25**	.08	.09
5.SS-32	.44**	-.35**	.31**	.48**	-.41**	.30**	.45**	-.41**	.11	-.19**
6.SD-32	-.23**	.58**	-.16*	-.26**	.54**	-.18*	-.24**	.56**	.02	.20**
7.SDe-3 M	.41**	-.21**	.57**	.34**	-.30**	.46**	.30**	-.33**	-.15*	.06
8.SS-3 M	.51**	-.41**	.36**	.53**	-.39**	.28**	.51**	-.44**	-.00	-.22**
9.SD-3 M	-.26**	.63**	-.26**	-.32**	.60**	-.16*	-.22**	.57**	.09	.19**
10.SDe-6 M	.53**	-.30**	.64**	.37**	-.27**	.60**	.35**	-.34**	-.14*	.06
11.SS-6 M	.49**	-.47**	.45**	.63**	-.40**	.38**	.61**	-.38**	.05	-.05
12.SD-6 M	.55**	.17*	-.29**	.63**	-.40**	.38**	-.32**	.65**	.09	.19**
13.SDe-9 M	.22**	-.22**	.15*	.55**	-.44**	.70**	.46**	-.43**	-.14	.03

Table 2 (Continued)

Variable	11	12	13	14	15	16	17	18	19	20
14.SS-9 M	.65**	-.53**	.33**	.53**	-.56**	.46**	.68**	-.50**	.02	-.23**
15.SD-9 M	-.47**	.76**	-.26**	-.61**	.26**	-.35**	-.39**	.75**	.06	.17*
16.SDe12M	.10	-.06	.67**	.17*	-.15	.13	.52**	-.45**	-.19**	-.01
17.SS-12 M	.58**	-.41**	.27**	.61**	-.44**	.28**	.51**	-.57**	.02	-.11
18.SD-12 M	-.41**	.69**	-.22**	-.48**	.70**	-.21**	-.58**	.20*	.12	.23**
19.SGB-32	.06	.02	-.07	.03	.02	-.04	.01	-.00	.27**	-.18
20.SDB-32	-.12	.01	.20**	-.06	.07	.08	.02	-.01	-.15*	.23**
Mothers' M	25.34	15.94	5.17	25.85	14.48	5.30	26.45	14.68	5.93	2.20
Mothers' SD	6.76	11.24	1.98	7.14	11.26	1.93	7.34	11.79	0.81	1.04
Partners' M	25.81	10.07	6.80	26.42	9.56	6.75	26.20	10.55	5.71	2.41
Partners' SD	7.55	9.19	1.83	6.86	9.38	1.80	7.05	8.74	0.95	1.10

SDe = sexual desire, SS = sexual satisfaction, SD = sexual distress, SGB = sexual growth beliefs, SDB = sexual destiny beliefs, 3 M = 3 months postpartum, 6 M = 6 months postpartum, 9 M = 9 months postpartum, 12 M = 12 months postpartum. Bolded correlations are the correlations between the partners. Mothers' correlations are above the diagonal. Partners' correlations are below the diagonal. * $p < .05$. ** $p < .01$.

variability in the sexual desire slopes (i.e., change over time) in pregnancy and the postpartum period.

All correlations among actors' and partners' sexual desire intercepts and slopes are reported in Table 4. Mothers' and partners' sexual desire intercepts were not significantly positively associated (in contrast to Hypothesis 2), reflecting that mothers and partners' sexual desire at 3 months postpartum were not linearly related. Consistent with Hypothesis 2, mothers' postpartum sexual desire slope was significantly and positively associated with partners' postpartum slope, suggesting that the degree to which sexual desire changed was similar for both members of the couple. Correlations amongst other partner effects (e.g., between each person's sexual desire intercepts and sexual desire pregnancy slopes) were not significant, suggesting that an individual's own sexual desire at 3 months postpartum was not significantly associated with changes in their partner's sexual desire and that mothers' and partners' sexual desire during pregnancy were not changing in parallel. In line with Hypothesis 5, mothers' sexual desire intercept was significantly lower than their partner's sexual desire intercept, Wald $\chi^2(1) = 160.95$, $p < 0.001$. Compared to their partners, mothers showed significantly stronger decreases in their sexual desire in pregnancy, Wald $\chi^2(1) = 32.67$, $p < 0.001$, and significantly stronger increases in their sexual desire postpartum, Wald $\chi^2(1) = 27.45$, $p < 0.001$.

Conditional Dyadic Latent Growth Curve Model

Sexual growth and destiny beliefs were entered as time-invariant predictors of mothers' and partners' intercept and postpartum slope for sexual desire (Hypotheses 3 and 4). The conditional model fit was good: $\chi^2(73) = 119.97$, $p < 0.001$; CFI = 0.96, TLI = 0.94; RMSEA = 0.06 [90%CI = 0.04 – 0.07]; SRMR = 0.07. All effects of sexual growth and destiny beliefs on each sexual outcome are presented in Table 5.

Sexual Destiny Beliefs: Mothers' own destiny beliefs did not significantly predict their own or their partners' sexual desire intercepts. In contrast to Hypothesis 4, partners' own higher sexual destiny beliefs in pregnancy predicted their own higher sexual desire at 3 months postpartum, such that for every 1-unit increase in their sexual destiny beliefs at 32-week pregnancy, there was a 0.22 increase in sexual desire at 3 months postpartum.² Partners' higher sexual destiny beliefs in pregnancy predicted mothers' higher sexual desire at 3 months postpartum, such that for every 1-unit increase in partners' sexual destiny beliefs at 32-week pregnancy, there was a 0.32 increase in mothers' sexual desire

² All subsequent significant effects can be interpreted using unit-increase or decrease descriptions as in this example.

Table 3 Unconditional dyadic latent growth curve models of sexual well-being outcomes

	Pregnancy Slope		Intercept (3 M)		Postpartum Slope	
	Mean	Variance	Mean	Variance	Mean	Variance
<i>Sexual Desire</i>						
Mothers	-.14***	.03***	4.55***	2.29***	.09***	.02***
Partners	-.02	.03***	6.77***	2.56***	-.00	.01*
<i>Sexual Satisfaction</i>						
Mothers	-.30***	.18*	23.90***	25.95***	.26***	.15
Partners	-.34***	.28**	24.40***	36.61***	.20***	.10
<i>Sexual Distress</i>						
Mothers	.44***	.31	16.62***	71.46***	-.20*	.38*
Partners	.13	.44***	10.60***	59.00***	-.01	n/a

* $p < .05$. ** $p < .01$. *** $p < .001$ **Table 4** Unconditional dyadic latent growth curve model standardized coefficients for APIM relationships of all sexual outcomes

	Mothers' Preg- nancy Slope	Mothers' Intercept (3 M)	Mothers' Post- partum Slope	Partners' Preg- nancy Slope	Partners' Intercept (3 M)	Partners' Postpartum Slope
<i>Sexual Desire</i>						
Mothers' Pregnancy Slope	–	0.23	-.17	-.06	.14	-.05
Mothers' Intercept (3 M)		–	-.21	-.04	.05	-.14
Mothers' Postpartum Slope			–	.10	-.03	.57*
Partners' Pregnancy Slope				–	.53***	-.39*
Partners' Intercept (3 M)					–	-.35**
Partner's Postpartum Slope						–
<i>Sexual Distress</i>						
Mothers' Pregnancy Slope	–	.23	-.29	.46	-.04	n/a
Mothers' Intercept (3 M)		–	.10	.08	.26**	n/a
Mothers' Postpartum Slope			–	.06	.13	n/a
Partners' Pregnancy Slope				–	.38***	n/a
Partners' Intercept (3 M)					–	n/a
Partner's Postpartum Slope						–

* $p < .05$. ** $p < .01$. *** $p < .001$

n/a=Not applicable for partners' postpartum slope for sexual distress due to residual variance being fixed to zero. APIM= Actor-Partner Interdependence Modelling. APIM relationships for sexual satisfaction are not presented as these models were run separately to address issues with model fit

intercept. In contrast to Hypothesis 4, mothers' sexual destiny beliefs did not significantly predict changes in their own or their partners' postpartum sexual desire slopes. Similarly, partners' sexual destiny beliefs did not significantly predict changes in their own or mothers' postpartum sexual desire slopes.

Sexual Growth Beliefs: In contrast to Hypothesis 3, mothers' own growth beliefs did not significantly predict their own or their partners' sexual desire intercepts. However, partners' higher sexual growth beliefs in pregnancy predicted mothers' lower sexual desire at 3 months postpartum. Mothers' and partners' sexual growth beliefs did not significantly predict

changes in their own or their partners' postpartum sexual desire slopes.

Sexual Satisfaction

The DLGCM for sexual satisfaction had convergence issues even with modifications (e.g., adjusting covariances). Consistent with our preregistered contingency plan, we conducted unconditional latent growth curve models separately for mothers and their partners, similar to techniques used in past research (Don & Mickelson, 2014). As such, we could not examine correlations for the interdependence between partners' sexual satisfaction (Hypothesis 2) or test whether

Table 5 Conditional dyadic latent growth curves with sexual growth and destiny beliefs on all sexual outcomes

	Mothers' Intercept (3 M)	Mothers' Post- partum Slope	Partners' Intercept (3 M)	Partners' Post- partum Slope
<i>Sexual Desire</i>				
Mothers' Sexual Growth Beliefs	-.12	.03	-.16	-.00
Mothers' Sexual Destiny Beliefs	.01	-.00	-.00	-.02
Partners' Sexual Growth Beliefs	-.32*	.02	.02	.01
Partners' Sexual Destiny Beliefs	.32**	-.02	.22*	.00
<i>Sexual Satisfaction</i>				
Mothers' Sexual Growth Beliefs	-.24	.01	-.51	-.07
Mothers' Sexual Destiny Beliefs	-1.16**	.01	-.19	-.09
Partners' Sexual Growth Beliefs	-.17	-.02	.04	.05
Partners' Sexual Destiny Beliefs	.05	-.02	-.36	.02
<i>Sexual Distress</i>				
Mothers' Sexual Growth Beliefs	1.27	.06	.51	n/a
Mothers' Sexual Destiny Beliefs	2.15**	.08	.62	n/a
Partners' Sexual Growth Beliefs	.82	-.00	-.13	n/a
Partners' Sexual Destiny Beliefs	-.84	.05	.43	n/a

* $p < .05$. ** $p < .01$. *** $p < .001$. n/a=Not applicable for partners' postpartum slope for sexual distress due to residual variance being fixed to zero

changes in sexual satisfaction were stronger for mothers than partners (Hypothesis 5).

Unconditional Dyadic Latent Growth Curve Model— Mothers

The model fit for mothers' sexual satisfaction was good: $\chi^2(12) = 15.97$, $p > 0.05$; CFI = 0.99, TLI = 0.99, RMSEA = 0.04 [CI = 0.02 – 0.09]; SRMR = 0.04. Consistent with Hypothesis 1, mother's sexual satisfaction significantly declined in pregnancy and significantly increased in the postpartum period. Fixed and random estimates of mothers' pregnancy slope and intercept were significant, indicating variability in mothers' sexual satisfaction in pregnancy and at 3 months postpartum. There was no significant variability in mothers' postpartum slopes for sexual satisfaction (see Table 3).

Conditional Dyadic Latent Growth Curve Model—Mothers

We then tested sexual growth and destiny beliefs (own and partners') as time-invariant predictors of mothers' intercept and postpartum slope for sexual satisfaction (Hypothesis 3 and 4). The conditional model fit was good: $\chi^2(26) = 34.09$, $p > 0.05$; CFI = 0.99, TLI = 0.98; RMSEA = 0.04 [90%CI = 0.00 – 0.07]; SRMR = 0.04.

Sexual Destiny Beliefs: In line with Hypothesis 4, mothers' higher sexual destiny beliefs in pregnancy predicted their own lower sexual satisfaction at 3 months postpartum.

Partners' sexual destiny beliefs did not significantly predict mothers' sexual satisfaction intercept. Mothers' nor partners' sexual destiny beliefs predicted changes in mothers' postpartum slope.

Sexual Growth Beliefs: Mothers' and partners' sexual growth beliefs did not significantly predict mothers' sexual satisfaction intercept or changes in mothers' postpartum slope.

Unconditional Dyadic Latent Growth Curve Model— Partners

The model fit for partners' sexual satisfaction was good: $\chi^2(12) = 16.58$, $p > 0.05$; CFI = 0.99, TLI = 0.99, RMSEA = 0.04 [CI = 0.00 – 0.09]; SRMR = 0.07. Consistent with Hypothesis 1, partners' sexual satisfaction significantly declined in pregnancy and significantly increased in the postpartum period. Fixed and random estimates of partners' pregnancy slope and intercept were significant, indicating variability in partners' sexual satisfaction in pregnancy and at 3 months postpartum. There was no significant variability in partners' postpartum slopes for sexual satisfaction.

Conditional Dyadic Latent Growth Curve Model—Partners

Next, we entered sexual growth and destiny beliefs as time-invariant predictors of partners' intercept and postpartum slope for sexual satisfaction (Hypotheses 3 and 4). The conditional model fit was inadequate: $\chi^2(26) = 48.44$, $p < 0.05$;

CFI = 0.95, TLI = 0.92; RMSEA = 0.07 [90%CI = 0.04 – 0.09]; SRMR = 0.09. Due to inadequate model fit, we did not interpret the model. No model modifications were able to improve the fit.

Sexual Distress

Unconditional Dyadic Latent Growth Curve Model

The initial model revealed negative residual variance for partners' postpartum slope of sexual distress. The residual variance was therefore fixed to zero and we could not estimate variability for partners' slope of postpartum sexual distress. The unconditional model fit for sexual distress was good: $\chi^2(51) = 86.87$, $p = 0.001$; CFI = 0.97, TLI = 0.97, RMSEA = 0.06 [CI = 0.04 – 0.08], SRMR = 0.05. Consistent with Hypothesis 1, mothers' sexual distress significantly increased in pregnancy, with significant declines postpartum. However, inconsistent with Hypothesis 1, partners' sexual distress did not significantly change during pregnancy or postpartum. There was significant variability in mothers' and partners' intercepts suggesting that mothers and partners had variable levels of sexual distress at 3 months postpartum. Variance in mothers' postpartum, but not pregnancy, slope was significant, suggesting variability in the degree to which mothers' postpartum distress improved over time. For partners, there was significant variability in the degree to which their sexual distress worsened during pregnancy.

Regarding the interdependence between couple members' sexual distress, a significant and positive association between mothers' and partners' intercepts was found (in line with Hypothesis 2) suggesting that mothers who had higher sexual distress at 3 months postpartum also had partners with higher sexual distress. All other correlations, including partner effects (e.g., between a mother's sexual distress intercept and her partner's sexual distress slopes in pregnancy and vice versa) were not significant, suggesting that an individual's own sexual distress at 3 months postpartum was not significantly related to their partner's change in sexual distress in pregnancy and that mothers' and partners' sexual distress during pregnancy were not changing in parallel. With respect to Hypothesis 5, mothers' sexual distress intercept (at 3 months postpartum) was significantly greater than their partner's sexual distress intercept, Wald $\chi^2(1) = 49.54$, $p < 0.001$. Compared to their partners, mothers showed significantly stronger increases in their sexual distress in pregnancy, Wald $\chi^2(1) = 9.36$ $p < 0.05$, but no significant difference in the postpartum period, Wald $\chi^2(1) = 3.74$ $p > 0.05$.

Conditional Dyadic Latent Growth Curve Model

Mothers' and partners' sexual growth and destiny beliefs were included as time-invariant predictors of their own and their partner's intercepts and postpartum slopes (Hypotheses 3 and 4). The conditional model fit was good: $\chi^2(82) = 148.40$, $p < 0.001$; CFI = 0.95, TLI = 0.93; RMSEA = 0.06 [90%CI = 0.05 – 0.08]; SRMR = 0.06.

Sexual Destiny Beliefs: Consistent with Hypothesis 4, mothers' higher sexual destiny beliefs in pregnancy predicted their own higher sexual distress at 3 months postpartum. Mothers' sexual destiny beliefs did not significantly predict their partners' sexual distress intercept. Partners' sexual destiny beliefs were not significantly associated with their own or mothers' sexual distress intercepts. Contrary to Hypothesis 4, neither mothers' nor partners' sexual destiny beliefs significantly predicted change in mothers' postpartum sexual distress slope.

Sexual Growth Beliefs: In contrast with Hypothesis 3, mothers' and partners' sexual growth beliefs did not predict their own or their partners' sexual distress intercepts. Mothers' and partners' sexual growth beliefs also did not significantly predict changes in mothers' postpartum sexual distress slope.

Discussion

In the current pre-registered dyadic longitudinal study, we found that as new parent couples navigated novel stressors to their sexual well-being, their beliefs in pregnancy about how to sustain sexual satisfaction—sexual growth and destiny beliefs—were associated with some, but not all, of their sexual adjustment at 3 months postpartum, and the beliefs did not predict changes over time. We extended previous literature in several ways. We are the first to report the average trajectories of new parents' sexual satisfaction and sexual desire across the transition to parenthood. We also demonstrated that sexual growth and destiny beliefs in pregnancy are differentially associated with sexual desire, satisfaction, and distress early in the transition to parenthood, further reflecting that these components of sexual well-being exhibit distinct associations. Although theory suggests that growth and destiny beliefs are triggered in the context of sexual challenges (Bohns et al., 2015; Sutherland & Rehman, 2018), this study is one of only a handful to examine how these beliefs function in a context of novel sexual stressors.

Notably, many of our preregistered hypotheses, especially about the effects of these beliefs on sexual adjustment over time, were not supported. These results suggest that sexual growth and destiny beliefs may not be important for

understanding change in new parent's sexual well-being over time; however, they still inform future research. For example, before drawing firm conclusions, researchers should examine these beliefs closer to when new parents' resume sexual activity postpartum as, theoretically, this would be when the beliefs become more activated as sexual challenges emerge and could therefore have more influence over time (Bohns et al., 2015; Sutherland & Rehman, 2018). Overall, the results of this study advance our understanding of how sexual growth and destiny beliefs may or may not shape sexual well-being in a population known to experience many novel sexual problems and especially at a time when these problems are salient (i.e., at 3 months postpartum; Rosen et al., 2020, 2021).

We showed for the first time that, on average, both mothers and their partners experienced significant improvements in their sexual satisfaction from 3 to 12 months postpartum, with mothers also experiencing significant increases in their sexual desire and decreases in sexual distress across the transition to parenthood. These findings are consistent with prior studies that estimated the prevalence of difficulties with sexual function at various time-points postpartum (Leeman & Rogers, 2012; McBride & Kwee, 2017; Serati et al., 2010; Rosen et al., 2020, 2021). Our study extends these findings by examining these changes using a dyadic and longitudinal design, capturing how mothers and their partners' sexual well-being changes individually and together across multiple time-points over the transition to parenthood. These findings suggest that throughout the transition to parenthood, most new parents begin to adjust to the demands of new parenthood and/or experience at least some resolution to their sexual concerns.

Sexual Destiny Beliefs and Sexual Well-Being at 3 Months Postpartum

Past research has demonstrated that sexual growth and destiny beliefs may become more salient in the context of a sexual challenge (Bohns et al., 2015; Sutherland & Rehman, 2018). As such, we hypothesized that 3 months postpartum, the time when most couples resume sexual activity and experience many sexual changes (e.g., Jawed-Wessel & Sevick, 2017), would be when we would detect the most robust effects of sexual growth and destiny beliefs. Indeed, in line with our hypotheses at this particular time point, we found that mothers who endorsed stronger sexual destiny beliefs in pregnancy experienced higher levels of sexual distress and lower sexual satisfaction at 3 months postpartum. These findings are consistent with a cross-sectional study that found when new mothers endorsed stronger sexual destiny beliefs, they and their partners reported lower relationship satisfaction (Maxwell et al., 2017). Past research indicates that destiny beliefs are associated with unhelpful coping behaviors, such as avoidance

and distraction (Bohns et al., 2015; Sutherland & Rehman, 2018), which may interfere with relationship maintaining (e.g., supportive coping) behaviors that are associated with sexual well-being (Bodenmann et al., 2010; Jones et al., 2018).

Contrary to our hypothesis, we found that when partners reported stronger sexual destiny beliefs in pregnancy, both they and new mothers reported greater sexual desire at 3 months postpartum. Similar benefits of sexual destiny beliefs have been found in couples coping with the sexual dysfunction FSIAD, which is characterized by chronic and distressing sexual desire and arousal difficulties. In this study, partners' greater sexual destiny beliefs were associated with less anxiety and depression for women with FSIAD (Raposo et al., 2021). It is possible that partners who endorse stronger sexual destiny beliefs may see these changes as time-limited and not as permanent indicators of sexual incompatibility. These partners may then be less focused on resolving sexual difficulties that occur during this vulnerable period, limiting pressures and concerns about sex that they and new mothers may experience at this time.

No Benefits of Sexual Growth Beliefs

We did not find evidence that new parents' sexual growth beliefs conferred any benefits for couples' sexual well-being during the transition to parenthood. In fact, when partners reported stronger growth beliefs in pregnancy, new mothers endorsed lower sexual desire at 3 months postpartum. A similar effect of sexual growth beliefs on partners' sexual desire was found in couples with FSIAD (Raposo et al., 2021). The researchers posited that persistent efforts to work through sexual difficulties may stifle their partners' sexual desire by limiting the spontaneity of sexual interactions that some individuals believe to be necessary for "good sex" (e.g., Dune & Shuttleworth, 2009; Sims & Meana, 2010). At 3 months postpartum, when partners are overly committed to working on sexual challenges, mothers may perceive this as an additional stressor, further limiting their sexual desire (Tavares et al., 2019).

New mothers' sexual growth beliefs were also not associated with their own or their partners' sexual well-being either at 3 months postpartum or over time. In one study examining beliefs of sexual attraction, greater endorsement of growth-oriented beliefs was related to engaging in fewer unhelpful behaviors (e.g., avoidance, distraction), but not engaging in more helpful behaviors (e.g., communication) in response to a sexual stressor (Bohns et al., 2015). Mothers and partners who strongly endorse sexual growth beliefs may in fact be aware of the changes required to improve their sexual well-being. However, they may perceive themselves to be less efficacious in implementing such changes because of the many other novel stressors during this period, precluding any benefits derived from sexual growth beliefs. Future research

may consider assessing parents' perceptions of their sexual self-efficacy as a potential moderator of our findings.

The lack of positive effects of sexual growth beliefs on sexual well-being is in contrast to findings by Maxwell et al. (2017). Maxwell et al. utilized a cross-sectional study design with a sample of couples who were anywhere between 3 to 12 months postpartum. In the current study, we assessed these beliefs at the same time-point for all couples (i.e., 32 weeks in pregnancy) and predicted outcomes again for all couples at the same time-point (3 months postpartum). It is possible that the different timeframes at which sexual growth and destiny beliefs were measured might account for the different results between the studies. Specifically, it may be important to measure growth beliefs concurrently with when postpartum sexual challenges begin to emerge (i.e., in the early postpartum) to determine their effects on sexual well-being (Jawed-Wessel & Sevic, 2017). It is at this time that beliefs would theoretically become the most strongly activated and potentially have the most influence on couples' relationship maintaining or coping behaviors in response to their sexual challenges (Bohns et al., 2015; Sutherland & Rehman, 2018).

Sexual Growth and Destiny Beliefs Not Linked to Change Over Time

We assessed sexual growth and destiny beliefs in pregnancy and sexual well-being at 3 months postpartum demonstrating that these variables were meaningfully linked, while allowing for temporal separation between our variables. However, we cannot draw causal conclusions because we did not find evidence that sexual growth and destiny beliefs predicted change in sexual well-being over time. Indeed, none of our hypotheses regarding sexual growth and destiny beliefs predicting changes in sexual desire, satisfaction, or distress over time were supported. There is more evidence implicating psychosocial factors as predictors of sexual well-being at particular time-points (e.g., 3 months postpartum) in the transition to parenthood, rather than for change over time (e.g., Dawson et al., 2020, 2021, 2022; Durtschi et al., 2017; Le et al., 2016). Moreover, the cross-sectional effects of sexual growth and destiny beliefs observed in the study with couples with FSIAD did not persist one-year later (Raposo et al., 2021), which is consistent with our non-significant slope effects. Thus, taken together, our results suggest that sexual growth and destiny beliefs may function differently only when couples are experiencing acute disruptions to their sex lives.

Still, many of our hypothesized effects were not supported and the observed effects were small. Coupled with the large number of effects tested within each model, it is possible that the effects we did detect were spurious and a result of Type I error. Conversely, we may not have had enough statistical

power, rendering us vulnerable to Type II error and unable to capture change over time or the benefits of sexual growth beliefs. Considering the lack of over-time effects in the current findings, as well as in previous research (Raposo et al., 2021), sexual growth and destiny beliefs may not be important for understanding changes in couples' sexual well-being during a time when they are navigating long-term sexual stressors. Identifying other psychosocial factors (e.g., communication, coping; Tutelman et al., 2021) that may be more strongly linked to couples' sexual well-being during the transition to parenthood is important as these are often more amenable to change relative to biomedical factors (e.g., mode of delivery, perineal tearing).

Strengths and Limitations

Overall, our study has a number of strengths, including a large sample size incorporating the perspective of both members of a couple. The theoretical underpinnings of sexual growth and destiny beliefs suggest that they emerge in the context of a sexual challenge (Bohns et al., 2015; Sutherland & Rehman, 2018). As such, we examined these beliefs in a context of novel sexual stressors, whereas most of the previous literature has focused on imagined or expected sexual challenges (Bohns et al., 2015; Sutherland & Rehman, 2018) or ongoing sexual dysfunction (Raposo et al., 2021). We are also the first to identify average trajectories of couples' sexual satisfaction and desire in the transition to parenthood, demonstrating how various facets of couples' sexual well-being change across this unique period. With a past focus on biological predictors of couples' sexuality in the postpartum, this is also one of only a few longitudinal and dyadic studies examining psychosocial predictors of couples' sexual well-being using preregistered hypotheses and analyses.

There are limitations, in addition to those noted above, to the current research. Sexual growth and destiny beliefs were measured at only one time-point in pregnancy as we conceptualized that these beliefs would be relatively stable given that some research has demonstrated both stability and change in these beliefs over time (Canevello & Crocker, 2011; Knee et al., 2003). However, the transition to parenthood is a time when people may be prone to re-evaluate their expectations about their relationship (e.g., Lévesque et al., 2021; Pancer et al., 2008), including their sexuality. Although it is a methodological strength to use beliefs in pregnancy to predict postpartum outcomes, this design does not capture possible shifts in beliefs that may have happened in response to this major life event. Future research should assess whether these beliefs change during the transition to parenthood, particularly before and after sexual challenges are resolved. New parents were asked to reflect on their experience of sexual desire, satisfaction, and distress within the last four weeks. The length of this timeframe may have introduced recall bias,

which may be addressed by future studies employing a daily diary study design. Moreover, the generalizability of our findings is restricted by our fairly homogenous sample in that majority of individuals were married, White, high socioeconomic status, and identified as cisgender and heterosexual. We did not test for the specific mechanisms through which sexual growth and destiny beliefs may impact sexual outcomes in the context of the transition to parenthood. Future research should examine relationship maintaining behaviors (e.g., dyadic coping) as mediators in the associations between these beliefs and sexual well-being.

Conclusions

The transition to parenthood can be a time of uncertainty and joy, with many challenges to couples' sexual well-being. We identified a novel psychosocial factor—sexual growth and destiny beliefs—as a predictor of couples' sexual desire, satisfaction, and distress at 3 months postpartum, but not change in these outcomes over time. We found that mothers' greater sexual destiny beliefs in pregnancy were linked to their own lower sexual well-being at 3 months postpartum, whereas partners' greater sexual destiny beliefs were associated with their own and new mothers' greater sexual desire. In contrast with the literature, partners' greater sexual growth beliefs were associated with mothers' lower sexual desire at 3 months postpartum. These findings suggest that intervening to address sexual beliefs in late pregnancy may be helpful to bolster couples' sexual desire, as well as mitigate the declines in new mothers' sexual satisfaction and increases in sexual distress at 3 months postpartum. Prior theory and research have posited growth-oriented beliefs, compared to destiny beliefs, as especially beneficial when managing interpersonal challenges. Our findings extend theory and prior research by demonstrating that (1) the costs and benefits of sexual growth and sexual destiny beliefs, respectively, are not uniform during a vulnerable period for couples' sexual well-being, precluding their dichotomization as either unhelpful or adaptive, and (2) these beliefs may not offer sustained contributions—either positive or negative—to couples' sexual well-being over time. Assessing the presence and role of these beliefs early in pregnancy may inform individualized interventions for modifying unhelpful thinking patterns. Ultimately, increasing couples' awareness of their sexual growth and destiny beliefs, alongside their function, may enhance their sexual well-being during the challenges many new parents face in the early postpartum period, but not over time.

Funding This work was supported by Doctoral awards through the Social Sciences and Humanities Research Council (SSHRC), Research Nova Scotia, and Maritime SPOR Support Unit awarded to the first author and by an Insight Grant from SSHRC (FRN: 435–2017-0534) awarded to the last author.

Data Availability The preregistered hypotheses and analysis plan, as well as all data and syntax, can be found on the Open Science Framework at the following link: https://osf.io/zb8my/?view_only=ae6d26fb8dc142d2908e358b37d788ef.

Declarations

Ethical Approval The study was approved by the ethical review boards at the IWK Health Centre (Halifax, Nova Scotia, Canada) and the University of Toronto (Toronto, Ontario, Canada).

Conflict of interest The authors declare no conflicts of interest.

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