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Emily Padgett

Annette Mahoney

Kenneth I. Pargament Bowling Green State University, kpargam@bgsu.edu

Alfred DeMaris ademari@bgsu.edu

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Article



Marital Sanctification and Spiritual Intimacy Predicting Married Couples' Observed Intimacy Skills across the Transition to Parenthood

Emily Padgett, Annette Mahoney *, Kenneth I. Pargament^D and Alfred DeMaris

Department of Psychology, Bowling Green State University, Bowling Green, OH 43403, USA; emily.a.padgett@gmail.com (E.P.); kpargam@bgsu.edu (K.I.P.); ademari@bgsu.edu (A.D.) * Correspondence: amahone@bgsu.edu; Tel.: +1-419-372-0282

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Abstract: This study examined the extent to which 164 married heterosexuals' reports of the sanctification of marriage and spiritual intimacy during pregnancy predicted the trajectory of the couples' observed intimacy skills during late pregnancy and when their first child was 3, 6, and 12 months old. At each time point, couples were videotaped in their homes for 10 min discussing their fears and vulnerabilities about becoming and being a new parent. Separate teams of three coders rated the four interactions and each spouse's intimacy skills, including disclosure of feelings of vulnerability about becoming or being a new parent, and supportive comments and positive non-verbal responses to each other. Using a multi-level dyadic discrepancy approach to growth curve modeling, both husbands' and wives' observed intimacy skills displayed a curvilinear trajectory over the first year of parenthood, with wives consistently displaying more emotional intimacy skills than husbands. Consistent with hypotheses, higher endorsement of the sanctification of marriage and spiritual intimacy between spouses at home predicted higher observed intimacy skills across time. No variation in these associations emerged due to parent gender. Thus, this longitudinal study identifies two specific spiritual processes within marriages that may motivate spouses to share their vulnerabilities and provide one another with valuable emotional support in coping with the transition to parenthood.

Keywords: sanctification; spiritual intimacy; parents; parenting; transition to parenthood; religion

1. Introduction

The psychological literature on the transition to parenthood (TtP) has documented that heterosexual couples, on average, develop more conflict and negative marital communication patterns, and less marital satisfaction when adjusting to first-time parenthood compared to prenatal marital functioning (for reviews see, Doss and Rhoades 2017; Mitnick et al. 2009). Marked variability, however, exists in couples' adaptation to the TtP (Doss and Rhoades 2017), with much less steep declines in marital satisfaction for some than others (Don and Mickelson 2014) and a minority of couples growing closer as they respond to the challenges of integrating an infant into their family unit (Holmes et al. 2013). Greater constructive communication during pregnancy is a fairly consistent predictor of less deterioration in post-birth marital functioning (Doss et al. 2009; Rholes et al. 2014; Trillingsgaard et al. 2014). Yet couples with the highest levels of prenatal relationship positives, such as emotional intimacy, exhibit the largest decreases in marital well-being following biological births and adoption (Doss and Rhoades 2017). Thus, adaptive dyadic coping resources need to be identified that help couples sustain emotionally supportive dialogues across the TtP (Rholes et al. 2014). Specific spiritual or religious (S/R) resources centered on marriage represent an understudied, but potentially

important, set of factors that may facilitate marital well-being across the TtP (Mahoney 2010, 2013). This longitudinal study therefore investigated whether greater sanctification of marriage (i.e., perceiving one's marriage as having sacred qualities and/or being a manifestation of God/higher power) and spiritual intimacy (i.e., disclosing and being supportive of the spouse's disclosures about spirituality) during pregnancy predicted the trajectory of couples' observed emotional intimacy skills at pregnancy and when the couples' first child was 3, 6, and 12 months old.

1.1. Marital Adaptation Across the TtP

1.1.1. Variation in Marital Adjustment

A large body of literature on the TtP highlights that, on average, heterosexual couples experience decreases in marital satisfaction and increases in negative marital interactions from the time of pregnancy through the first years of their child's life (Doss and Rhoades 2017; Mitnick et al. 2009; Ryan and Padilla 2019). For example, overall marital quality diminishes for around 60–80% of couples, and many experience decreases in general conversation and the frequency of sex (Doss and Rhoades 2017; Don and Mickelson 2014). New parents also often report increased conflict over physical intimacy, finances, division of household labor, family and in-laws, shared leisure time, and life goals (Kluwer and Johnson 2007). In addition, childrearing emerges as a potentially new source of friction, with wives typically taking on a disproportional amount of infant care and couples often discovering they disagree about coparenting (Cowan and Cowan 1992; Ryan and Padilla 2019). In observational studies, couples' interactions also tend to deteriorate after the TtP, with an increase in hostile, critical comments and a decrease in positivity during problem-solving focused discussions (Cox et al. 1999; Trillingsgaard et al. 2014; Houts et al. 2008; Ryan and Padilla 2019). Despite these clear trends, a minority of couples report increased marital satisfaction (Doss and Rhoades 2017) and feeling closer to one another after their infant enters their lives (Holmes et al. 2013).

Given the marked variation in marital adjustment across the TtP, researchers have called for more attention to be paid to adaptive communication skills that could facilitate marital adjustment as couples cope with the strains of new parenthood (Mitnick et al. 2009; Rholes et al. 2014). Such calls dovetail with a growing emphasis in couples' literature to identify specific marital resources that could help couples sustain the quality and stability of their unions (Bradbury et al. 2000). In particular, Vulnerability Stress Adaptation (VSA) models of relationship dynamics expand the theoretical lens of couples' research beyond dysfunctional problem-solving interactions exhibited by clinic-referred couples; VSA models also strive to identify adaptive dyadic coping strategies that help generally non-distressed couples successfully navigate stressful, yet normative, challenges in daily life and accommodate the enduring psychological vulnerabilities that each partner possesses (Falconier et al. 2015; Karney and Bradbury 1995).

1.1.2. Intimacy Skills

One form of dyadic coping likely to help protect marriages during the TtP is a type of social support we refer to here as intimacy skills. Consistent with Reis and Shaver (1988) interpersonal process model of intimacy, intimacy skills refer to how effectively spouses disclose emotional distress (e.g., anxiety, sadness, sense of vulnerability) as well as give and receive empathic support when discussing potentially sensitive topics. Self-report and observational studies have linked couples' capabilities to engage in emotionally intimate dialogues to greater marital satisfaction (e.g., Greeff and Malherbe 2001; Meeks et al. 1998; Mirgain and Cordova 2007; Osgarby and Halford 2013; Patrick et al. 2007), and less deterioration in problem solving skills and marital dissolution over time (Sullivan et al. 2010). Emotionally focused intimate dialogues appear to be particularly helpful, yet difficult to enact, when partners are facing significant personal stressors (Bodenmann et al. 2015; Kuhn et al. 2018), such as a physical illness (e.g., Manne and Badr 2010; Porter et al. 2012) or psychological disorder (e.g., Hanley et al. 2013). Couples' educational prevention and clinical interventions programs also posit that partners' ability to effectively share and respond to one another's personal vulnerabilities during emotionally focused dialogues are critical mechanisms to promote marital satisfaction and stability (e.g., Sullivan et al. 2010; Wiebe and Johnson 2016).

The TtP represents a salient stage to observe couples' emotional intimacy skills because it often evokes strong feelings, ranging from joy, anticipation, awe, and love for the new infant to uncomfortable emotions such as anxiety, apprehension, irritation, and insecurity as spouses adjust to fatigue, new roles, and a new lifestyle (Cowan and Cowan 1992; Ryan and Padilla 2019). Furthermore, both spouses are experiencing the same stressful life event rather than only one spouse experiencing a particular difficulty. Indeed, ample opportunities occur for spouses to share and empathize about their respective emotional reactions to the TtP (Pistrang et al. 2001), and greater emotional support from a partner during pregnancy predicts less post-natal depression and anxiety (Pilkington et al. 2015). In addition, greater constructive communication during pregnancy is a fairly consistent predictor of less deterioration in post-birth marital functioning across studies (Cox et al. 1999; Doss et al. 2009; Rholes et al. 2014). Nevertheless, couples with the highest levels of prenatal relationship positives, such as emotional intimacy, tend to exhibit the largest decreases in marital well-being following biological births and adoption (Doss and Rhoades 2017). Thus, prenatal dyadic strengths need to be identified that predict the trajectory of change over time in married couples' intimacy skills. We could not, however, locate such studies in the TtP literature. To address this need, we directly observed married husbands' and wives' emotionally-laden disclosures (i.e., shared feelings of anxiety and vulnerability about becoming a parent) and supportive responses to disclosures (i.e., validating comments and emotionally positive non-verbal reactions) during late pregnancy and when their first biological child was 3, 6 and 12 months old. Ratings also encompassed spouses' warmth and affection (i.e., shared humor, physical affection) that could increase the frequency of emotional disclosures and punishing responses (i.e., invalidating comments and emotionally negative non-verbal reactions) that could decrease emotional disclosures (Kuhn et al. 2018; Mirgain and Cordova 2007). Notably, mixed theory and findings exist on whether gender predicts differences in spouses' emotional skillfulness, with especially scarce studies existing on couples coping the TtP. Available evidence, however, implies that wives would exhibit higher emotional skillfulness than husbands during this stage (Yu et al. 2011; Knoll et al. 2007).

1.2. Spiritual and Religious Marital Resources across the TtP

1.2.1. Global S/R Indices

Spirituality and religiousness (henceforth referred to as S/R) encompass an intriguing yet understudied sphere of life that may facilitate couples' marital functioning as they adapt to parenthood (Mahoney and Boyatzis 2019). Major world religions have long taught that sustaining a stable, well-functioning marriage within which to conceive and raise a child are highly valued goals for women and men (Goodman et al. 2013; Mahoney 2013). Findings based on brief measures of S/R support the notion that spouses who are more involved in organized religion may be more motivated to act in ways that protect and preserve their marriage across the TtP (Mahoney et al. 2008; Mahoney 2010). For example, a four-item measure of private prayer, importance of religion, and individual and joint religious attendance related to greater maternal, but not paternal, marital satisfaction over the transition (Nock et al. 2008). In a study of mothers, frequent attendance at religious services while pregnant predicted less post-partum declines in marital satisfaction compared to infrequent or no attendance (Dew and Wilcox 2011). However, Doss et al. (2009) found that a one-item measure of religious involvement before the birth of a first child did not predict later changes in marital satisfaction. With regard to co-parenting dynamics, which could impinge on the quality of dyadic marital relations, greater general S/R has been tied to wives engaging in greater maternal gatekeeping in childcare (Schoppe-Sullivan et al. 2015) as well as more infant care and domestic labor than husbands (Mahoney and Boyatzis 2019). Finally, more religiously engaged fathers in a low SES setting are more

likely to take paternity leave to care for infants and, if more engaged in child care, they are less likely to have conflicts with the mother (Petts 2018).

While valuable and intriguing, available peer-reviewed quantitative studies on the role of S/R in facilitating marital adjustment across the TtP are limited in two key ways (Goodman et al. 2013; Mahoney et al. 2008; Mahoney 2010). First, brief indices of S/R tend to exhibit limited variability which may contribute to mixed or null results. Second, such measures cannot disentangle specific S/R processes that theoretically should motivate partners to support and rely on one another to cope with the strains of the TtP from S/R processes that are likely to undermine marital functioning. Hence, in this study, we examined two conceptually-based and specific S/R factors that have been identified in studies on S/R and marriage that should motivate new parents to engage in supportive intimate dialogues with one another as they adjust to the TtP.

1.2.2. Sanctification of Marriage

Sanctification refers to perceiving an aspect of life, such as one's marriage, as having divine significance and character (Mahoney et al. 2013; Pargament and Mahoney 2005). Community and national surveys have found that most married Americans view their union as having sacred qualities, such as holy, blessed, sacred (i.e., non-theistic sanctification), and as being a manifestation of a Higher Power (i.e., theistic sanctification) to some degree (e.g., Ellison et al. 2011; Mahoney et al. 1999). Greater belief regarding sanctity of one's marriage has been tied to greater subjective marital satisfaction, forgiveness, supportive dyadic coping, and sacrifice (e.g., Ellison et al. 2011; Rusu et al. 2015; Sabey et al. 2014). Studies using structural equation or fixed effects modeling with longitudinal data also show that greater sanctification of marriage predicts better observed problem-solving behavior and more positivity by husbands and wives during videotaped interactions where couples were asked to discuss their core conflicts during the TtP (Kusner et al. 2014; Rauer and Volling 2015). Couples who perceive sexual relations with a spouse as sanctified also report more sexual satisfaction cross-sectionally (Uecker and Willoughby 2018). Likewise, the more newlyweds view marital sexuality as sanctified, the more marital and sexual satisfaction as well as more frequent sex they report longitudinally (Hernandez-Kane and Mahoney 2018).

The above empirical findings imply that perceiving marriage as embodying divine qualities and/or a deity's presence during pregnancy could be a resource that motivates first-time parents to give and receive more emotional support to each other across the TtP. This hypothesis is consistent with theory and research on sanctification across multiple domains of life, including family relationships (Mahoney et al. 2013; Pargament and Mahoney 2005; Pargament et al. 2017). More specifically, (Mahoney et al. 2009, 2013) have proposed that greater perceived sanctification of one's marriage can lead to a greater commitment and investment of time and energy to the union, elicit strong emotions, and function as a powerful personal and social resource that spouses tap into during events that place stress on their bond. Thus, the more that parents experience a marriage during late pregnancy as an embodiment of God's intentions, an expression of ultimate purposes, and the inspiration of profound feelings, such as wonder, reverence, and gratitude, then the more they may prioritize giving and receiving emotional support to each other as a means to guard against parenthood disrupting marriage as a foundation of their family unit which, in turn, is also likely to be viewed as a sacred object that merits protection.

1.2.3. Spiritual Intimacy

Spiritual intimacy between a dyad refers to engaging in spiritual disclosure and providing empathic support to a partner who offers such disclosures (Kusner et al. 2014). Thus, this process represents a particular sub-type of intimacy focused on the sensitive domain of openly sharing opinions or experiences or (dis)beliefs about supernatural phenomenon that cannot be proven as ontologically "true" but tap into profound concerns and ultimate desires. People may hesitate to reveal such information due to fears or experiences of being dismissed, misunderstood, or ridiculed

by the listener. Conversely, eliciting such disclosures from another person may especially require responding in an open-minded, empathic, and non-punishing manner (Mirgain and Cordova 2007). Theoretically, greater spiritual intimacy may foster peoples' sense they have found a special loved one with whom they can share their deepest aspirations and hopes as well as faith-based (dis)beliefs, doubts, troubles, or struggles. Disclosing one's spiritual or religious worldview or experiences can leave individuals feeling especially vulnerable to rejection or criticism because disclosures about supernatural powers, existential concerns, and/or S/R communities can be difficult, if not impossible, to verify as ontologically or morally defensible (Brelsford and Mahoney 2008; Mahoney 2013). Like other family dyads (Brelsford and Mahoney 2008; Desrosiers et al. 2011), however, couples' ability to talk about these sensitive topics in a candid and supportive manner may foster a greater sense of trust, attachment, emotional safety, and togetherness or "we-ness." Such conversations before having a child may thus set the stage for couples later being able and willing to engage in emotionally focused dialogues about new parenthood where they share their vulnerabilities, fears, questions, and struggles in parenting an infant, an arena of discussion that can also be highly debatable and challenge deeply held values or preconceptions about marriage and family life.

Empirically, in longitudinal studies, spiritual intimacy has predicted less negativity and more positivity during observed conflict interactions using fixed effects modeling (Kusner et al. 2014). Furthermore, among adult child-parent dyads, spiritual disclosure has been cross-sectionally tied to greater collaboration and less verbal aggression after controlling for disclosure about other sensitive topics (Brelsford and Mahoney 2008), and spiritual disclosure and support has been correlated more parental care and less overprotection by mothers and fathers (Desrosiers et al. 2011). In sum, across the TtP, spiritual intimacy could be expected to predict spouses' observable skills in disclosing highly emotionally laden information and responding to such disclosures in a supportive, non-judgmental manner (Kusner et al. 2014; Mahoney 2013).

1.3. Summary

The primary goal of this study was to examine whether greater sanctification and spiritual intimacy during pregnancy would predict higher levels of observed intimacy by both spouses over the TtP using a multilevel dyadic-discrepancy approach for growth-curve modeling with a linear mixed effects model. Theoretically, both constructs should function as protective factors that propel new parents to invest more effort into sharing and listening to one another's struggles with new parenthood to avoid the high spiritual and psychological costs to themselves and their child if their union deteriorated across this transition. We also examined the unique contribution of each construct in predicting observed emotional support but we did not make predictions about mediational effects due to the paucity of studies examining both processes in concert. Given that our primary analyses involved the trajectory of change over time in married couples' observed intimacy skills across the TtP, we note here that prior research has generally found decreases in marital satisfaction and increases in negative marital interactions across this transition. Thus, we anticipated couples would display a decline in intimacy skills after the first few months of having an infant due to fatigue and restructuring their lives, followed by at least some rebound in marital closeness during the second half of the first year of parenthood. We also expected that wives would likely exhibit greater intimacy skills than husbands, but this hypothesis was tentative and not a primary focus of the study. Finally, we examined whether our primary findings varied as a function of gender and time, but we did not make predictions about interaction effects with either factor due the scarcity of relevant prior studies.

2. Method

2.1. Participants

Participants were 164 married husbands and wives who underwent the transition to parenthood with both spouses' first biological child. The mean ages of husbands and wives, respectively, were

28.7 (SD = 4.4) and 27.2 (SD = 4.0). Self-described ethnicity for wives and husbands, respectively, was 92.0% and 85.0% White; 3.7% and 5.0% Asian American; 3.7% and 5.5% African American; 0% and 3.7% Hispanic/Latino; and 0.62% and 0.62% Other. The highest education for husbands and wives, respectively, was 11% and 6% high school, 28% and 21% partial college or post-high school education, 42% and 46% college degree, and 19% and 27% graduate/professional degree. Household income at pregnancy was broadly distributed as follows: 8% at \$0-\$25,000, 29% at \$25-50,000, 30% at \$50–75,000, 19% at \$75,000–100,000, and 13% at greater than \$100,000. Couples in the sample were married an average of 2.7 years, in a relationship for about 5.9 years and had cohabited for about 3.5 years; 53% had cohabited prior to marriage. The self-reported religious affiliation for wives was 35% non-denominational Christian, 31% Protestant, 27% Catholic, 4% None, 3% Other, and 0.6% Jewish, and for husbands was 30% Protestant, 29% non-denominational Christian, 27% Catholic, 7% None, 6% Other, and 0.6% Jewish; using these categories, 55% of couples reported same religious affiliation. More broadly, 85% of the pairs reported being affiliated with the same general religious tradition (i.e., Christian, Jewish, Muslim, Other, or No affiliation). Couples were no more involved in organized religion than other married U.S. couples with biological offspring based on national norms (National Survey of Family Growth) of wives' religious attendance (Mahoney et al. 2009).

2.2. Procedures

Couples were drawn from a mid-sized, Midwestern city and surrounding suburban and rural communities, and recruited primarily from childbirth classes (64%), with the rest responding to announcements posted in medical offices, retail locations or newspapers (14%), word of mouth referrals (15%) or direct mail (8%). Inclusionary criteria were that spouses: (1) were married, (2) pregnant with each individual's first biological child, and (3) both spoke English.

Data were collected in couples' homes. Each spouse read and completed consent forms for the project, which was approved by the university's Institutional Review Board. The couples participated in a 10 min, videotaped, emotionally focused interaction (details to follow), and each spouse completed questionnaires, with a research assistant present to answer questions and to monitor that spouses independently answered items. Couples were assessed in approximately their 9th month of pregnancy (T1) and re-assessed three more times over the course of the next year: at four (T2), seven (T3), and thirteen months (T4) after the first visit; the infants at these respective time points were thus approximately 3, 6 and 12 months old. Couples were paid \$75.00, \$100.00, \$100.00, and \$125.00 for their participation in waves 1–4, respectively. Relatively little participation attrition occurred, with 164 of the 178 couples who participated during pregnancy completing all four waves.

2.3. Participant Reported Measures of Major Variables

2.3.1. Sanctification of Marriage

To assess the sanctification of marriage during pregnancy, we revised the 20-item measure from Mahoney et al. (1999) so that: (a) 10 items used full sentences rather than single adjectives to assess whether the spouse viewed the marriage as having sacred qualities (i.e., non-theistic sanctification) without reference to a deity (e.g., My marriage is ... "sacred to me," "seems like a miracle to me," "part of a larger spiritual plan"), and (b) ten items assessed the extent to which the participants agreed that the marriage was a manifestation of God (i.e., theistic sanctification) with prior items about involvement in religious groups omitted (e.g., "God played a role in how I ended up being married to my spouse," "I sense God's presence in my relationship with my spouse"). Since different people use different terms to refer to "God," instructions asked participants to substitute their own word for God as needed. Each spouse rated items on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). In this study, each spouse's responses were summed and then averaged for analyses (for husbands, item M = 5.22, SD = 1.34; for wives, item M = 5.45, SD = 1.29) with alpha coefficients of 0.97 for both. This study thus builds on previous research on the original sanctification

of marriage scales that found high internal consistency and evidence of convergent and construct validity (Mahoney et al. 1999).

2.3.2. Spiritual Intimacy

To assess spiritual intimacy during pregnancy, we modified four items from a 20-item index of spiritual disclosure previously used with college students (Brelsford and Mahoney 2008) so each spouse answered two items about disclosure by self and two items about the spouse's disclosure. We created four new items so each spouse answered two items about support by self and two items about the spouse's support. Thus, each spouse answered a total of four items about spiritual intimacy skills used by the self: "I feel safe being completely open and honest with my spouse about my faith," "I tend to keep my spiritual side private and separate from my marriage (reverse scored)," "I try not to be judgmental or critical when my spouse shares his/her ideas about spirituality," and "I try to be supportive when my spouse discloses spiritual questions or struggles," and four items about the partner's spiritual intimacy skills: "My spouse doesn't disclose her/his thoughts or feelings about spirituality with me," (reverse scored), "My spouse shares his/her spiritual questions or struggles with me," "My spouse really knows how to listen when I talk about my spiritual needs, thoughts, and feelings," and "My spouse is supportive when I reveal my spiritual questions or struggles to her/him." Items were rated on a Likert-scale from "not at all" (0) to "a great deal" (3). Husbands' and wives' ratings about each spouse were summed and averaged to create joint reports of each spouse's spiritual intimacy skills for analyses (for husbands, item M = 2.25, SD = 0.47; for wives, item M = 2.33, SD = 0.42) with alpha coefficients of 0.73 and 0.67, respectively.

2.4. Spouses' Observed Emotional Intimacy Skills

2.4.1. Eliciting and Videotaping Marital Interactions

Spouses were asked to talk with one another about their respective emotions of vulnerability, anxiety, worry, or insecurity about the pregnancy and becoming a new parent at each time point. To prime the couple for the interaction, research assistants provided each spouse with a list of 18–23 common questions or concerns at each time point about pregnancy or being a new parent that could potentially trigger such emotions. They asked spouses to read the list, mentally reflect on, and jot down notes on the back of the checklist on their own personal feelings of vulnerability or self-doubt for a few minutes to prepare to talk to their spouse about those feelings. Once both partners indicated they were ready to talk to one another, research assistants turned on video equipment and left the couple alone for ten minutes to talk to one another.

2.4.2. Observational Coding

Four separate teams (T1, T2, T3, T4) of three research assistants coded the four waves of videotaped marital interactions using a coding system that incorporated aspects of the System for Coding Interactions in Dyads (SCID) by Neena Malik and Kristin Lindahl (2000, as cited in Malik and Lindahl 2004) as well as the Intimacy Coding System by Marina Dorian and James Cordova (1999, as cited in Dorian and Cordova 2004), and the Emotion Skills Coding System by Shilagh Mirgain and James Cordova (Mirgain and Cordova 2003). Both sets of researchers gave permission for their systems to be modified for the purposes of this study. The original four codes from the Intimacy Coding System were used, but renamed as follows: Self Disclosure, Positive Support toward the Partner, Affection-Warmth-Display of Positive Emotions, and Negativity toward the Partner. The specific codes from the Emotion Skills Coding System and the SCID were used to supplement the content of the coding manual for the first three codes. All three coders on a team rated each spouse on each code on a 7-point scale ranging from 1 to 7 (1 = none to very low; 7 = very high). For analyses, Negativity toward Partner was reverse coded so a higher score meant less negativity. Table 1 displays the means, standard deviations, and ranges of the three coders' averaged ratings on each of the four codes and a

total observed emotional intimacy score at each time point for each spouse. Coders' averaged ratings of spouses' behavior fell at the low to moderate end for positivity and low end for negativity of the rating scale. Not displayed are intercorrelations among the four measured marital regressors at each time point, which ranged from Pearson correlations equal to 0.18 to 0.36 for wives and 0.17 to 0.43 for husbands.

Variable	Time Point	Time Point		SD		Intraclass Correlation	
Vallable		Husbands	Wives	Husbands	Wives	Coefficients	
Positive Self-Disclosure	T1	4.17	4.81	1.36	1.09	0.85	
	T2	2.90	3.57	1.02	1.11	0.85	
	T3	3.58	4.35	1.18	1.14	0.89	
	T4	3.34	4.15	1.10	1.18	0.93	
Positive Support	T1	3.92	4.22	1.08	0.93	0.78	
	T2	2.92	3.28	1.05	0.90	0.81	
	T3	3.44	3.50	1.22	1.06	0.87	
	T4	3.37	3.42	1.13	1.01	0.89	
Negativity toward Partner Reverse scored	T1	6.40	6.58	0.91	0.72	0.85	
	T2	5.46	5.88	1.29	1.46	0.85	
	T3	5.62	5.86	1.31	1.25	0.91	
	T4	5.92	6.00	1.23	1.20	0.94	
Affection/Warmth	T1	3.97	4.17	1.16	1.05	0.83	
	T2	3.13	3.45	1.22	1.70	0.87	
	T3	3.77	3.96	1.31	1.23	0.89	
	T4	3.84	4.02	1.13	1.05	0.92	
Total Emotional Intimacy	T1	18.46	19.78	3.47	2.69	0.91	
	T2	14.41	16.18	3.77	3.34	0.86	
	T3	16.41	17.67	4.12	3.56	0.91	
	T4	16.47	17.59	3.53	3.14	0.94	

Table 1. Descriptive Information for Predictor Variable: Observed Emotional Intimacy.

Table 2 also displays the intraclass correlation coefficients (ICC) that document the inter-rater reliability of coding teams. The ICCs for each code, collapsed across spouses, ranged as follows: positive self-disclosure = 0.85-0.93; positive support = 0.78-0.89; negativity = 0.85-0.94; and affection/warmth = 0.83-0.92. Combined emotional intimacy scores were used for primary analyses and the ICCs for these variables were T1 = 0.91, T2 = 0.86, T3 = 0.91, and T4 = 0.94. Intercorrelations between husbands' and wives' total emotional intimacy skills were r = 0.58 (p < 0.001) for T1, r = 0.77 (p < 0.001) for T2, r = 0.76 (p < 0.001) for T3, and r = 0.68 (p < 0.001) for T4.

Table 2. Bivariate Correlations between Major Study Variables at Each Time Point.

	Husbands' Observed Emotional Intimacy				Wives' Observed Emotional Intimacy			
	T1	T2	T3	T4	T1	T2	T3	T4
T1 Husbands' Self-Report Sanctification	0.23 **	0.17 *	0.20 **	0.22 **	0.15 +	0.13	0.13	0.20 *
T1 Wives' Self-Report Sanctification	0.08	0.08	0.11	0.13	0.12	0.10	0.08	0.15
T1 Joint-Report Husbands' Spiritual Intimacy	0.31 ***	0.35 ***	0.28 ***	0.27 ***	0.30 ***	0.30 ***	0.26 ***	0.27 ***
T1 Joint-Report Wives' Spiritual Intimacy	0.27 ***	0.35 ***	0.37 ***	0.30 ***	0.32 ***	0.37 ***	0.36 ***	0.37 ***

Note. [†] approached significance at 0.0524, * p < 0.05, ** p < 0.01, *** p < 0.001. All Pearson product-moment correlations coefficients represent a sample of N = 164.

2.5. Data Analytic Plan: Multilevel Dyadic-Discrepancy Approach for Growth Curve Modeling

To examine the major questions of this study, we used the multilevel dyadic-discrepancy approach for growth-curve modeling, using a linear mixed effects model (Fitzmaurice et al. 2004) on a

transformed data set of multiple waves of data (Singer and Willett 2003). To facilitate comprehension of results, we next elaborate on this analytic approach. The dyadic-discrepancy aspect of the statistical model uses data from husbands and wives in the same model and thus allows for differences in trajectories between wives and husbands to be directly tested, which is not possible when trajectories are estimated in separate models for husbands and wives (Lyons and Sayer 2005). Specifically, a dummy code is added to the data matrix (-0.5 for husbands, and 0.5 for the wives), which represents a unit difference in the outcome variable between spouses and allows for detecting whether females are higher or lower than males in exhibiting intimacy skills. Furthermore, the dyadic-discrepancy approach allows the mean couple observed intimacy skills to be modeled and, if desired, for both the gender difference and the mean couple response to be modeled as functions of time and other covariates (DeMaris et al. 2011). The linear mixed effects model of the analytic approach is also useful in several ways. It allows some coefficients to be fixed, i.e., invariant, over all respondents. Other coefficients, e.g., the equation intercept and effects of time, are allowed to vary over respondents; they are considered to be random growth parameters. Because the model contains both fixed and random effects, the model is referred to as "mixed" (Fitzmaurice et al. 2004).

Furthermore, multilevel modeling allows for the analyses of two different levels of data. The first level of analysis examines within-individual change to describe each person's individual growth trajectory, and the second level asks about interindividual differences to determine the relationship between predictors and the shape of each person's individual growth trajectory (Singer and Willett 2003). This approach also rigorously addresses the issue of the degree of interdependence of husbands' and wives' behavior by controlling for the correlation among husbands' and wives' responses and adjusts the error variance for the interdependence of husband and wife outcomes within the same couple (Lyons and Sayer 2005). More technically, the level 1 model is an unconditional model containing only the effect of passing time. The very first step is to estimate a model containing only a random intercept. This provides the variance decomposition for the outcome; that is, the total variability in observed emotional intimacy skills between and within couples across couple, gender, measure, and time. Next is added the gender-of-spouse dummy. This model shows the average couple mean of intimacy skills and the average gender discrepancy in intimacy skills. Then the time effect is added and the model shows the initial couple mean of intimacy skills and how it changes with time (i.e., the slope/trajectory). Finally, at level 1, we add the potential interaction of the gender discrepancy with time (DeMaris et al. 2011). At level 2, a model can be created to include explanatory predictors of the dyadic discrepancy in intimacy skills and the trajectory of intimacy skills over time. Separate models can then be created to observe the impact of each S/R variable on the trajectory separately, and a final model can be created with both S/R variables to see if their individual effects persisted. Lastly, the same procedure is used to calculate the overall R-squared and the proportion of within couple variation accounted for by the trajectory over time. In summary, using this type of statistical model allowed us to examine how husbands' and wives' observed emotional intimacy skills changed across time, and whether the two S/R variables predicted the trajectories in spouses' behaviors. More examples of this model and explication of the mathematical equations can be found in Lyons and Sayer (2005) and DeMaris et al. (2011).

The observed data in this study were well suited for the analytic plan by: (1) having three or more waves of data, (2) an outcome whose values changes systematically across time, (3) a sensible metric for clocking time, and (4) the same observational coding system used reliably by independent teams of coders at each time point (considerations for when to use a multi-level model can be found in (Singer and Willett 2003)). In this study, there were a few technical video recording problems resulting in a few observations of the 164 cases not being video recorded or audio being lost at T1 (N = 4), at T3 (N = 1), and at T4 (N = 7). Our analytic model, however, accounted for this fairly low level of attrition because the mixed effects model is flexible in accommodating any degree of imbalance in longitudinal data and accounts for covariance among the repeated measures in a relatively parsimonious way by

not requiring each participant to have the same number of observations or that the observations be measured the same number of times (Fitzmaurice et al. 2004).

To run analyses, the data matrix was structured as follows. First, it is routine in dyadic models to use parallel measures of the spouses' responses to survey items, or, in this study, the direct observations of the two partners' behaviors. This creates enough degrees of freedom to accurately estimate the measurement-error term in the first level of the model, while maintaining enough degrees of freedom for modeling the time trajectory in an appropriate manner, and sets up the creations of growth trajectories, as two data points per member of the dyad are needed to create regression lines (DeMaris et al. 2011). Parallel scales are created by observing participant responses (typically to survey items) with similar standard deviations, pairing them together, and then randomly assigning each item in the pair to a different subscale (A or B). The responses by each spouse consisted of observations of behavior by three raters on each team rating the four types of behavior for each spouse (i.e., 12 coded behaviors) at each of four time points rather than spouses' responses to survey items. Thus, parallel scales were created by observing standard deviations among all raters for all observed behaviors at each time point for each spouse, resulting in parallel scales (A or B) of six coded behaviors for husbands and wives separately for all four time points. Although this creates scales with different items at each time for husbands and wives, the parallelism is more important, as all items are assumed to be measuring the same underlying construct.

Additionally, the data had to be transformed into a person-period dataset which contained a separate record for each time period for each partner (Singer and Willett 2003). This study, therefore, had 2 measures, for each of the 2 spouses for each of the 4 time periods for 164 couples, for a total of $2 \times 2 \times 4 \times 164 = 2624$ observations total. Furthermore, all independent variables were grand-mean-centered and a time variable was created (0 for the first wave, and then 4, 7, and 13 representing the number of months since the initial wave of data was collected). Furthermore, a time squared variable was created to test for a quadratic effect of time. Additionally, as explained earlier, a code was created to measure the gender gap; this is similar to dummy coding in that it creates a unit difference that represents the discrepancy between husbands and wives while allowing for interpretation of other variables in terms of average effects across spouses (DeMaris et al. 2011). Once the data set was organized in the manner described above, the means of observed emotional intimacy skills of husbands and wives were plotted to determine the trajectory of the growth curve. The dyadic discrepancy mixed effects analyses were then done in multiple steps, and all analyses were completed using SAS and the PROC MIXED procedure.

3. Results

Preliminary analyses were conducted to observe whether demographic variables (each spouse's highest level of education, duration of marriage, and household income) were correlated with observed spouses' behaviors. Husbands' education was the only variable that was significant (r = 0.27 to r = 0.44 across the four time points, all at p < 0.001) and thus included in analyses. In addition, the magnitude of the bivariate correlations between spouses' self-reported sanctification of marriage and joint reports of spouses' spiritual intimacy at pregnancy was r = 0.42 (p < 0.001) for husbands and r = 0.24 (p < 0.001 for wives), indicating the two predictor variables were sufficiently independent to be treated as separate variables in analyses.

3.1. Descriptive Bivariate Correlations between Predictor and Criterion Measures

Table 2 displays the bivariate correlations between the two S/R variables and observed emotional intimacy skills at each time point for wives and husbands. Husbands' self-reports of sanctification at Time 1 were significantly correlated with all four time points of husband's observed skills, while only correlating with wives' observed skills at Time 4. No significant correlations emerged for wives' reports of sanctification of marriage with intimacy skills by either spouse. Joint reports of both spouses'

spiritual intimacy were significantly correlated with both spouses observed emotional intimacy skills at all four time points.

3.2. Trajectory of Observed Emotional Intimacy Skills

As displayed in Figure 1, the shape of the trajectory in observed emotionally intimate behaviors was similar for both husbands and wives, and exhibited a pattern where behaviors decreased at Time 2, came back up again at Time 3, and stayed relatively stable from Time 3 to 4. Figure 1 displays the total means for husbands' and wives' parallel scales for each time point. The primary trend is concave, with a minimum emotional intimacy reached at Time 2, a trend that was consistent with theoretical expectation. We elected to capture this trend using a quadratic function of time in our growth-curve model. Although one might argue for a cubic function, the additional interpretational complexity of adding time-cubed to the model did not seem warranted, given that modeling the time trend was not the primary focus of the study. The quadratic function allowed us to adequately model the nonlinearity in time while preserving model parsimony and interpretability.

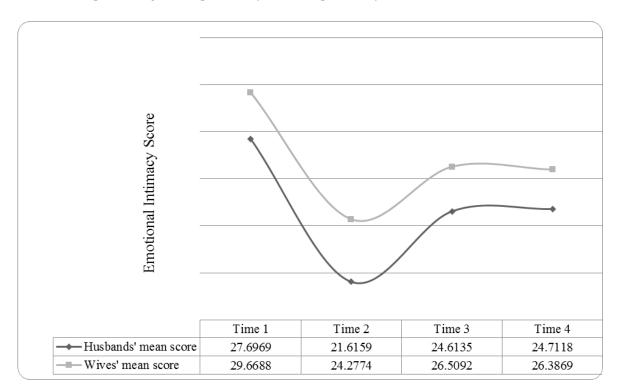


Figure 1. Growth trajectories of husbands' and wives' observed emotional intimacy at all four time points. Means are for parallel measures created for analyses.

3.3. Gender Difference in Emotional Intimacy Skills

Prior to taking the gender difference into account, an unconditional means model was run in order to observe the composition of variance in the model across measure, gender, and time. We found 41.9% of the variability in observed emotional intimacy skills to be between couples, while 58.1% was within couples, but across measure, gender, and time. Also, the variance parameter for the intercept was significant, so that there is significant variability in mean intimacy across couples. The grand mean emotional intimacy score over couples, gender, measure, and time was 25.66.

The next step was to add time and the gender difference in to the model. Significant variability was found in both couple mean observed emotional intimacy skills and the gender difference in observed emotional intimacy across couples. This is the variability that we tried to account for with predictors. The initial average couple mean emotional intimacy was 27.83 (p < 0.0001) and, on average, the gender difference at any given time is that wives are 2.05 units higher than husbands (p < 0.0001).

The next step was to add an interaction of time and time squared with the gender difference. In this model, the variance parameters were all significant; however, the fixed effects for the interactions were not significant. This indicates that the effect of time did not differ across genders (see Model 1 in Table 3). The interactions of the gender difference with time and time squared were therefore not included in the remaining models.

Explanatory Variable	Model 1	Model 2	Model 3	Model 4	
	Level 1	fixed effects			
Intercept	27.829 ***	20.477 ***	21.866 ***	21.683 ***	
	(0.323)	(1.663)	(1.604)	(1.606)	
Gender Gap	2.115 ***	1.945 ***	1.860 ***	1.820 ***	
	(0.341)	(0.248)	(0.253)	(0.252)	
Time (months)	-1.144 ***	-1.146 ***	-1.145 ***	-1.145 ***	
	(0.100)	(0.100)	(0.100)	(0.100)	
Time Squared (months)	0.082 ***	0.082 ***	0.082 ***	0.082 ***	
	(0.008)	(0.008)	(0.008)	(0.008)	
Gendergap x Time	0.072 (0.117)				
Gendergap x Time Squared	-0.009 (0.009)				
	Level 2	fixed effects			
Husband's Education		1.300 *** (0.289)	1.054 *** (0.279)	1.086 *** (0.279)	
Sanctification of Marriage		0.023 ** (0.008)		0.013 (0.008)	
Spiritual Intimacy			0.288 *** (0.060)	0.253 *** (0.063)	
	Variano	ce Parameters			
Intercept	13.898 ***	12.490 ***	11.431 ***	11.393 ***	
	(1.910)	(1.775)	(1.664)	(1.658)	
Gender Gap	6.587 ***	6.451 ***	6.795 ***	6.666 ***	
	(1.105)	(1.092)	(1.142)	(1.128)	
Time (months)	1.071 ***	1.072 ***	1.074 ***	1.073 ***	
	(0.182)	(0.182)	(0.182)	(0.182)	
Time Squared (months)	0.006 ***	0.006 ***	0.006 ***	0.006 ***	
	(0.001)	(0.001)	(0.001)	(0.001)	
Level 1 error	13.282 ***	13.286 ***	13.286 ***	13.285 ***	
	(0.428)	(0.428)	(0.428)	(0.428)	

Table 3. Restricted maximum likelihood coefficient estimates (standard errors) for curvilinear mixedeffects models of emotional intimacy.

Note. ** *p* < 0.05, *** *p* < 0.001.

3.4. Sanctification and Spiritual Intimacy Predicting Observed Emotional Intimacy Skills

After completing unconditional models, the next step was to conduct analyses to determine the relationship between spiritual variables during pregnancy and observed emotional intimacy skills over time. Each spiritual predictor variable was added into its own model prior to creating a final full model. In Model 2, which included sanctification of marriage, all variance parameters and fixed effects were significant. A significant effect emerged for sanctification of marriage, so that sanctification increases average observed emotional intimacy behaviors at any given time (see Model 2 in Table 3).

A similar finding was found in Model 3 when just spiritual intimacy was entered in the model. Again, all variance parameters and fixed effects were significant, so that spiritual intimacy increased average observed emotional intimacy at any given time point. Furthermore, the BIC was the lowest for this model compared to all other models, indicating that it is the best model out of all that were analyzed. Furthermore, interaction effects were tested between the gender gap with spiritual intimacy and with sanctification; these interactions were not significant and therefore not in the final model. Model 4 included sanctification and spiritual intimacy; the significant effect of sanctification disappeared when included in the model alongside spiritual intimacy. Although the two spiritual constructs were not highly correlated (i.e., r = 0.42 for husbands and r = 0.24 for wives), spiritual intimacy uniquely predicted observed emotional intimacy after controlling for sanctification.

4. Discussion

This longitudinal study investigated whether the sanctification of marriage and spiritual intimacy during pregnancy predicted married heterosexual parents' emotionally intimate dialogues about becoming a first-time parent across the TtP. In general, both spouses displayed a curvilinear trajectory in their observed intimacy skills, with both spouses' disclosures about their emotional vulnerabilities and supportive responses to each other declining between late pregnancy and when the baby was 3 months old, then rising again when the baby was 6 months old, and remaining stable when the infant was 12 months old. Such a trajectory is similar to observational studies of couples' problem-solving interactions across the TtP where parents' communication skills when discussing their conflicts become less positive and more negative after the child is born (e.g., Houts et al. 2008; Trillingsgaard et al. 2014), although here wives consistently exhibited higher observed intimacy skills than their husbands. This gender effect mirrors studies where women report offering more emotional support to their husbands during the TtP (Yu et al. 2011; Knoll et al. 2007). More centrally, as expected, each spouse's self-report of sanctity of marriage and couples' joint reports of each spouses' spiritual intimacy skills during late pregnancy predicted higher observed emotional intimacy skills by each parent across the TtP, with no differences in these findings due to gender.

Our result that wives' and husbands' perceptions of their marriage being imbued with sacred qualities and/or a manifestation of God/higher power during pregnancy predicted their respective observed intimacy skills over the TtP reinforces prior studies suggesting that the sanctification of marriage can function as a resource that facilitates positive marital dynamics. For example, this S/R factor also predicts more observed warmth and collaboration and better problem-solving skills by both spouses when they discuss core marital conflicts using fixed effects modeling (Kusner et al. 2014) and structural equation modeling (Rauer and Volling 2015). Greater sanctity of marriage also buffers married first-time parents from marital distress typically associated with viewing oneself as under or over-benefitting in the union (DeMaris et al. 2010). Furthermore, greater sanctity of marriage has been repeatedly tied to greater subjective marital satisfaction, forgiveness, and sacrifice (e.g., Rusu et al. 2015; Sabey et al. 2014). Thus, the current study's findings echo theory and research on sanctification across multiple domains of life positing that viewing a union as sacred motivates people to invest effort to protect their bond, especially during times of stress (Mahoney 2013; Mahoney et al. 2013; Pargament et al. 2017).

Although fewer prior studies exist on spiritual intimacy, our findings also highlight the potential value of this dyadic S/R construct to facilitate spouses' willingness to share and listen supportively to one another's emotional vulnerabilities across the TtP. Spiritual intimacy involves discussing one's subjective views, needs, thoughts, and feelings about spirituality, which can leave one feeling vulnerable to scrutiny because disclosures about one's views about supernatural powers, existential concerns, and/or S/R communities can be difficult, if not impossible, to verify as ontologically or morally defensible (Brelsford and Mahoney 2008; Mahoney 2013). Like other family dyads (Brelsford and Mahoney 2008; Desrosiers et al. 2011), couples' ability to explore such sensitive topics in an open and supportive manner may foster a greater sense of trust, attachment, emotional safety,

and togetherness or "we-ness." Such conversations during pregnancy may foster couples' willingness to engage in intimate dialogues about new parenthood where the optimal course of action in coping with an infant may also often be ambiguous and challenge deeply held values including choices tied to family life. Our results reinforce empirical findings from longitudinal studies where spiritual intimacy predicts better marital communication when first-time parents are observed discussing their core conflicts (Kusner et al. 2014) and less deterioration in marital and sexual satisfaction for newlyweds (Hernandez-Kane and Mahoney 2018).

Taking a step back, given the long-term risks to parents and offspring tied to deterioration in marital satisfaction and stability, researchers have called for the identification of adaptive dyadic coping mechanisms that may help couples better manage normative life stressors and thereby avoid the widespread declines in relational well-being due to the TtP and passage of time for childless couples (Mitnick et al. 2009). Effectively engaging in emotionally-focused intimate dialogues has clearly been identified as one important dyadic resource (Reis and Shaver 1988; Mirgain and Cordova 2007), and relational factors have been uncovered that facilitate such interactions. For example, higher self-reported mindful awareness (Wachs and Cordova 2007), compassionate love (Collins et al. 2014), and romantic competence encompassing psychological insightfulness, mutuality in balancing and maximizing both partners' needs, and emotion regulation (Davila et al. 2017) have been tied to observations of married or romantic partners' skillfulness in listening to and expressing supportive emotions across a variety of social support tasks. This study adds sanctification and spiritual intimacy as two specific S/R resources to the potential menu of potential adaptive dyadic resources that could, with more basic research, be candidates to integrate into educational programs to help couples cope with the TtP.

Delving further into the intricacies of intimacy interactions, being motivated to care about another person's well-being (i.e., empathic concern), not just possessing the ability to comprehend another person's distressing thoughts and feelings (i.e., empathic accuracy) may be critical in promoting interpersonal responsiveness. For instance, Winczewski et al. (2016) found that when a spouse exhibited high empathic concern during marital dialogues, higher empathic accuracy was associated with greater responsiveness to the partner; however, if the listener's empathic concern was low then his or her greater empathic accuracy predicted being less caring and responsive. Such moderator effects of empathic concern on links between empathic accuracy and responsiveness did not differ based on whether the couples engaged in a conflictual or supportive dialogue, nor were explained or moderated by relationship satisfaction. Building upon these findings, sanctification and spiritual intimacy may encompass two dyadic resources that facilitate empathic concern, accuracy, and responsiveness. Although neither S/R process could be deemed sufficient nor necessary for all couples, both factors may motivate many couples to care about their partner's well-being. That is, viewing marriage as a sacred bond or one's spouse as a special individual to share one's vulnerabilities about S/R matters could prompt spouses to be concerned about the other's distress and draw on such empathic insights for the benevolent goals to protect the partner and union from distress. Reciprocally, spouses may be more willing to share their emotional vulnerabilities, recognizing that lowering one's defenses when experiencing stressors offers a means to solicit support and bond with a spouse.

Finally, in this study, we explored the unique effects of sanctification and spiritual intimacy in predicting observed intimacy skills (see Table 3, Model 4). Spiritual intimacy contributed significantly to emotional intimacy after taking into account the sanctification of marriage, whereas the reverse was not true. This implies spiritual intimacy may partly or fully drive sanctification effects. Notably, higher engagement in organized religious groups by spouses in the past or present may help foster sanctification beliefs and pro-social relationship values and behaviors such as generosity and commitment (Wilcox and Dew 2016). Yet those who no longer or rarely attend religious services may benefit from being able and willing to engage in spiritual dialogues which, in turn, may reinforce (dis)beliefs in the sanctity of one's union. Thus, spiritual intimacy may be a construct that mediates sanctification effects, and facilitates relational well-being for couples who are and aren't highly

embedded in religious groups. But to verify such speculations, our findings would need to be replicated and extended to couples from diverse backgrounds.

Limitations and Future Research Directions

The strengths of this study included using a longitudinal design to examine causal effects of couples reports of two S/R variables, direct observations of each spouse's emotional intimacy skills to rule out monomethod bias to account for results, and analytic strategies to address the interdependence of spouses' functioning. This study has limitations nonetheless. For practical reasons, we restricted our sample to heterosexual, married, first-time coparents in relatively short-duration and well-adjusted unions. We presume that greater sanctification and spiritual intimacy would likewise benefit unmarried, remarried, same-sex, cohabiting, or non-residential coparents who are generally satisfied with their unions. Notably, while the mean levels of both S/R resources are likely to be the most elevated for "traditional couples" (i.e., married heterosexuals with biological children), sanctification has been linked to greater relationship satisfaction for same-sex (Phillips et al. 2017) and cohabiting or dating couples (Henderson et al. 2018), and more parenting satisfaction for married and unmarried parents (Nelson and Uecker 2018). Nevertheless, this study's findings about both adaptive S/R factors need to be replicated within diverse families. Future work also needs to be done to identify S/R dyadic processes that would likely exacerbate distressed couples' difficulties (Goodman et al. 2013; Mahoney 2013). Like other pathological processes, the baserates of such processes are likely to be low and more prevalent in clinic-referred samples rather than generally satisfied couples. Our study was also limited to couples who married prior to the birth of both spouses' first biological child which represents a declining portion of all childbearing liaisons (Cherlin 2010). Such couples tend to be more affluent, well-educated, and likely to self-describe as Caucasian than unmarried and/or cohabiting coparents (Cherlin 2010). Consistent with US norms of married, heterosexual coparents, our spouses predominantly identified as Christian, but future work should verify the expectation that both constructs would operate similarly among more socioeconomically and religiously diverse samples (Goodman et al. 2013; Mahoney 2010). Finally, future studies could delve into couples' interpretations of items on both S/R measures and whether intimate dialogues about other sensitive and value-laden topics tied to family life (e.g., sexuality, politics) yield similar findings to spiritual intimacy.

Overall, this study adds to emerging research on adaptive S/R dyadic processes that may be helpful to many couples. Specifically, viewing a marital relationship as sacred and engaging in spiritually intimate dialogues appears to function as a resource that encourages first-time parents to sustain their emotional intimacy as they face the stressors of integrating an infant into their family unit. Both constructs longitudinally predicted wives' and husbands' skills in revealing and handling their partner's emotional vulnerabilities with care which, in turn, is likely to help protect and preserve their union as they travel down the challenging road of parenthood.

Author Contributions: The manuscript is based on the first author's dissertation. A.M. and K.I.P. conceived the broader project from data for this project was used. E.P. conceived and designed the study for her dissertation, chaired by A.M. with K.I.P. and A.D. as involved committee members. E.P. and A.D. analyzed the data; E.P., A.M., K.I.P. and A.D. co-authored the paper.

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