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A Randomized Controlled Trial of Brief Coparenting and Relationship Interventions During the Transition to Parenthood

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Abstract

The transition to parenthood has been repeatedly identified as a stressful period, with couples reporting difficulties in domains of individual, coparenting, and relationship functioning. Moreover, these difficulties have been shown to impact children's development. To buffer against these difficulties, numerous effective parenting, couple, and combined interventions have been developed; however, these interventions are typically lengthy, which limits their potential for dissemination. Therefore, in the present study, we developed and tested separate six-hour interventions that focused exclusively on improving either coparenting or relationship functioning. In a randomized control trial, 90 heterosexual couples (180 individuals) were randomly assigned to an information control group, a coparenting intervention, or a relationship intervention and assessed on seven occasions during the two years following birth. Results revealed that women and high-risk men in both the couple and coparenting interventions showed fewer declines in relationship satisfaction (Cohen's $d = 0.53-0.99$) and other areas of relationship functioning. Women also reported improved coparenting in both intervention groups (Cohen's $d = 0.47-1.06$). Additionally, women in both interventions experienced less perceived stress during the first year after birth. Given similar effects of the two interventions on coparenting and relationship functioning, future dissemination may be enhanced by delivery of coparenting interventions, as coparenting (compared to relationship) interventions seem to attract more interest from couples and are likely easier to integrate into existing services.

Although the transition to parenthood is often a joyous time in the lives of first-time parents, it can also prove to be a tumultuous and challenging period of adjustment. In addition to

increased depression, anxiety, and stress following the birth of a baby (e.g., NICHD, 1999), the average couple experiences declines in relationship satisfaction (e.g., Doss, Rhodes, Stanley & Markman, 2009; Lawrence, Rothman, Cobb, Rothman, & Bradbury, 2008) and deteriorations in relationship confidence, relationship dedication, observed negative communication, conflict management, and problem intensity (Doss et al., 2009). These negative changes in couples' relationships have wide-reaching consequences, particularly because the quality of couples' relationships following birth are associated with children's early development (e.g., Horwitz, Irwin, Briggs-Gowan, Heenan, Mendoz & Carter, 2003) as well as later psychological, social and school functioning (e.g., Davies & Cummings, 1994).

While declines in couple functioning are fairly common over the transition to parenthood for men and women, women tend to experience greater decline in relationship adjustment (e.g., O'Brien & Peyton, 2002; Shapiro, Gottman, & Carrère, 2000). Additionally, women suffer declines across more areas of relationship functioning than men (e.g., Doss et al., 2009). Other studies have suggested that women show more immediate declines in relationship adjustment post-partum, while men show these same declines 6–15 months after birth (e.g., Belsky & Hsieh, 1998). In addition to gender, a variety of risk factors have also been identified as predictive of declines in relationship adjustment over the transition to parenthood. At the couple level, unmarried couples experience higher rates of negative communication (Hsueh, Morrison, & Doss, 2009); negative communication has been shown to predict greater post-birth increases in problematic communication (Doss et al., 2009). A particular type of negative communication – that which results in low-to-moderate physical aggression – has been shown to be especially predictive of future relationship dissatisfaction and instability (e.g., Rogge & Bradbury, 1999) as well as postpartum depression (e.g., McMahon, Huang, Boxer, & Postmus, 2011). On an individual level, perinatal and postpartum depressive symptoms predict subsequent relationship distress (Cowan & Cowan, 2000). Additionally, poor functioning in an individual's family of origin, indicated by higher levels of conflict and/or divorce, has been associated with greater declines in relationship adjustment after birth (e.g., Cowan & Cowan, 2000; Doss et al., 2009). Finally, characteristics of the circumstances surrounding the birth have also been linked to subsequent relationship adjustment. For instance, compared to those with planned pregnancies, women who reported their pregnancies were unplanned also reported greater deterioration in relationship functioning in some (e.g., Cox, Paley, Burchinal & Payne, 1999; Lawrence et al., 2008) but not all studies (e.g., Doss et al., 2009).

Given that the transition to parenthood is a difficult time for new parents, interventions have been developed to buffer new parents against these problems. The majority of these interventions target parenting behavior by increasing knowledge of infant care, increasing parental sensitivity and responsiveness, and promoting the cognitive stimulation of the child (Pinquart & Teubert, 2010a; 2010b). Unfortunately, while results show that these parenting-focused interventions positively impact these targeted areas, the effects do not tend to generalize to preventing declines in couple functioning (e.g., couple adjustment Cohen's $d = .13$, ns ; Pinquart & Teubert, 2010a). Therefore, there is a pressing need for interventions that can buffer couples' relationships against postpartum deterioration.

One approach to helping couples successfully navigate the transition to parenthood has been to offer interventions that combine a focus on the couple's relationship with strengthening the newly-formed coparenting relationship, one of the most contentious issues for new parents (e.g., Khazan, McHale & Decourcey, 2008). There are four distinct components of coparenting (Feinberg, 2003): a) the extent to which partners engage in supportive coparenting behavior that affirms the competency and contribution of their partner's parenting behaviors; b) the division of childcare labor; c) the degree of child-rearing disagreements; and d) the effectiveness of handling interaction patterns around childcare issues, such as not fighting in front of the children. In addition to the content differences, romantic and coparenting domains are differentiated by the level of analysis of behavior – coparenting is triadic, including interactions among partners and their children, whereas the romantic relationship is dyadic.

Empirical studies demonstrate that coparenting predicts child functioning outcomes even after controlling for relationship satisfaction (Feinberg Kan, & Hetherington, 2007; McHale & Rasmussen, 1998). In some studies, coparenting has also been found to mediate the relation between global marital conflict and parenting behaviors (e.g., Margolin, Gordis, & John, 2001). The quality of the coparenting relationship has been linked to numerous outcomes, including relationship satisfaction, quality of parenting, and child adjustment (e.g., Feinberg, 2003; McHale, Kuersten-Hogan & Rao, 2004; Teubert & Pinguart, 2010).

Combined interventions (focusing on both the coparenting and relationship domains) have proven to have a number of positive effects. Combined interventions positively impact the couple's romantic relationship, with intervention couples typically experiencing significantly smaller satisfaction declines (Schulz, Cowan & Cowan, 2006; Shapiro & Gottman, 2005) and smaller increases in negative communication (Halford, Petch & Creedy, 2010; Shapiro & Gottman, 2005) than control couples. Gender may moderate some of these intervention effects, with one study finding larger effects for women in relationship domains (Halford et al., 2010) and other studies finding larger effects for men's involvement in childcare (e.g., Doherty, Erickson & LaRossa, 2006). Additionally, a couple's risk of post-birth deterioration may moderate the effect of relationship interventions, with interventions being especially effective for high-risk couples. Indeed, a recent large-scale randomized study of 250 couples found that higher-risk women benefited more than low-risk women from an intensive, combined intervention; high-risk men showed trends in the same direction (Petch, Halford, Creedy and Gamble, 2012). These results are consistent with studies of premarital education interventions, some of which have been shown to be more effective for women (e.g., Laurenceau et al., 2004) and higher-risk couples (e.g., Halford, Saunders, & Behrens, 2001).

Although combined interventions have proven to be effective across a wide range of outcomes, these interventions typically involve a significant time commitment. Indeed, the combined interventions reviewed above require a mean of 30.1 hours to complete, limiting their cost-effectiveness and potential for dissemination, particularly when one considers the limited free time new parents have during pregnancy and after birth. Indeed, given that only 59% of first-time mothers in the United States find time to attend childbirth classes (Declercq, Sakala, Corry, Applebaum, & Herrlick, 2013), the expectation that a significant

portion of new mothers would attend additional relationship classes – especially ones 2–5 times longer than typically childbirth classes – is likely a poor foundation for future dissemination. Indeed, when pregnant couples were asked to participate in a relatively shorter, 16-hour coparenting intervention, 77% of initially-interested couples declined to participate, primarily because of a lack of time (Feinberg & Kan, 2008). Unfortunately, meta-analyses of marriage education programs in general (Hawkins, Stanley, Blanchard, & Albright, 2012), and over the transition to parenthood specifically (Pinquart & Taubert, 2010b), document that moderate-dosage (9–20 hours) interventions have larger effects on relationship satisfaction than shorter interventions. However, it may be that shorter interventions are less effective because they attempt to cover multiple topics and perhaps do not cover key topics in sufficient detail. Therefore, it may be that superior outcomes can be obtained with brief interventions by focusing only on coparenting or the couple relationship, with the hope that a narrow focus would generate broad effects.

We are aware of only one empirically-based intervention that focuses exclusively on the coparenting relationship. This intervention, Family Foundations (Feinberg & Kan, 2008), is a 16-hour intervention consisting of four prenatal and four postnatal sessions. It has been shown to result in significantly improved coparenting behavior and lower parenting stress after birth (e.g., Feinberg, Jones, Kan & Goslin, 2010); however, most effect sizes were in the small range. Unfortunately, relationship satisfaction was only assessed at 3.5 years after birth; positive intervention effects on relationship satisfaction were found, but only for parents of boys. Similarly, only two interventions during the transition to parenthood focus exclusively on the couple relationship (Kermeen, 1995; Matthey, Kavanagh, Howie, Barnett & Charles, 2004); unfortunately, neither study found significant effects on global relationship satisfaction.

While there have been a number of interventions developed that are effective in preventing declines in couple functioning after birth, their comprehensive nature result in programs that are prohibitively long for many or most couples. Moreover, research on interventions focused on only the relationship or coparenting domains is limited. Thus, this study sought to investigate the impact of brief interventions focused on improving either coparenting or relationship functioning. The first aim of the present study was to determine the effectiveness of 6-hour couple- and coparenting-focused interventions over the transition to parenthood. We hypothesized that these programs would have substantial benefits, although the magnitude of these benefits would likely be smaller than those achieved in more intensive interventions. The second aim of the current study was to examine whether the effects of the coparenting- and relationship-focused interventions would generalize outside of their specific foci. Given the interrelatedness of the constructs after birth, we hypothesized that couples in the relationship-focused intervention would report benefits in both couple and coparenting functioning. Similarly, we hypothesized that couples in the coparenting-focused intervention would report superior relationship and coparenting functioning relative to the control group. Finally, the third aim of the current study was to explore whether gender and risk status moderated the magnitude of intervention effects. Based on previous literature, we hypothesized that both interventions would be more effective for women and for higher-risk individuals.

Methods

Participants

Ninety heterosexual couples (180 individuals) who were either married (86%) or cohabiting (14%) and 6–8 months pregnant with their first child were recruited from a number of sources in the community, including childbirth classes (47%), gynecology offices (26%), flyers (10%), word of mouth (10%), and offices providing services to low-income pregnant women (7%). Couples were paid a total of \$500 (\$250 per person) for completing all research assessments; no payment was offered for completing intervention sessions. On average, participants were 27.8 years old ($SD = 5.00$, Range 18–47 years old) and had been married for 2.52 years at the beginning of the study ($SD = 2.47$, Range 0–10 years). While the sample was largely White, non-Hispanic (88.3%), smaller percentages of White, Hispanic (7.8%), Native American or Alaskan Native (3.3%), Asian or Pacific Islander (2.2%), and African American (1.1%) individuals also took part in the study. Participants were generally well-educated, with 31% having obtained a Bachelor's Degree and 29% a graduate-level degree. The average individual yearly income before taxes was \$25,967 ($SD = \$1,652$ /month). Couples were excluded if both partners were not between the ages of 18–65, if this was not the first child for both partners, if either partner reported severe interpersonal violence (e.g., punching or more severe items) in the relationship, if either partner was diagnosed with a psychotic or personality disorder, or if either partner was unable to speak English fluently (see Figure 1)

Additionally, to be eligible, one or both partners had to meet at least one of seven risk factors identified in previous literature on the transition to parenthood (e.g., Halford et al., 2001; Petch et al., 2012). Couples with no risk factors were excluded in an effort to obtain a sample with higher levels of, and greater variability in, risk given evidence that low-risk couples tend to be overrepresented in preventative couple interventions offered through universities (e.g., Sullivan & Bradbury, 1997). The seven risk factors in the present study were: (1) parental divorce in family of origin; (2) father-to-mother violence in the family of origin; (3) not being currently married; (4) a previous marriage; (5) reporting that they were unsure they wanted to have a baby at this time; (6) mild-to-moderate violence in the relationship as indicated by endorsing one or more items assessing physical aggression or injury (e.g., pushing, slapping); and (7) mild-to-clinical levels of depressive symptoms, as indicated by a score of 14 or greater on the Beck Depression Inventory II during pregnancy. A total of 86 couples were excluded for not reporting any risk factors and 18 couples were excluded for reporting severe interpersonal violence (see Figure 1).

Procedures

Eligible couples were first stratified based on whether relevant risk factors were only distal (e.g. divorce in family of origin) or included at least one proximal risk factor (e.g. current depressive symptoms), then randomly assigned to one of three conditions (information-only control, relationship intervention, coparenting intervention), resulting in 30 couples in each intervention group. Couples were also randomly assigned to one of five intervention coaches who were graduate students in a Clinical Psychology Ph.D. program; coaches worked with an equal number of couples in each intervention condition. In all three interventions, the

coaches met with each couple separately. Couples in the three conditions did not differ significantly on pre-treatment measures of relationship or individual functioning, cumulative risk, or the majority of demographic variables. The only exception was that women in the coparenting condition had a significantly higher mean level of total education than women in the relationship and control conditions; $F(2) = 3.458, p = 0.04$; however, women's education was not predictive of rates of change in any of the dependent variables and was therefore not controlled for in analyses.

Information control group—Couples randomized to the information-only control group attended a single 90-minute pre-birth meeting where participants discussed information focusing on infant development. At this meeting, participants were provided with a list of wide-ranging topics related to the transition to parenthood (e.g. budgeting for a child, the benefits of breastfeeding, coping with common infant health concerns etc.), from which the couple picked a few topics they wanted to discuss more in-depth. A variety of handouts and pamphlets addressing the aforementioned topics were also available to couples to take home and review.

Relationship intervention—Those couples randomized to the relationship intervention group participated in four 90-minute intervention sessions (6 hours in total), with two sessions conducted before birth and another two sessions conducted approximately 3.5 months after birth. This intervention was modeled after Integrative Behavioral Couples Therapy (IBCT; Jacobson & Christensen, 1996). In the two pre-birth sessions, the coach aided couples in developing a “theme” of relationship strengths and discussed how positive qualities may erode over the transition to parenthood. The coach also worked with the couple to identify current relationship difficulties, problematic communication around those difficulties, and engaged them in problem-solving exercises for these relationship problems. Post-partum depression, anxiety, and stress were discussed, but only in regards to their impact on the romantic relationship. The two post-birth sessions focused on how their relationship “theme” had changed since they became parents, focusing in the third session on resolving relationship problems through acceptance (empathic joining and unified detachment) or problem-solving exercises, as appropriate. In the fourth session, couples were asked to share how positive aspects of their relationship had changed since the birth of the child and brainstorm ways to keep positive aspects of the relationship strong.

Coparenting intervention—Couples in the coparenting intervention also participated in four 90-minute sessions (6 hours total) – two sessions before birth and two sessions roughly 3.5 months after the birth of the child. The intervention was designed to address all four components of coparenting, as identified by Feinberg (2003). In the first session, the coach encouraged the couple to discuss their expectations about the transition to parenthood, particularly pertaining to common coparenting tasks, such as expectations about the division of labor, anticipated changes to schedules or how child-rearing disagreements would be handled. In the second session, the couple then worked together to create a “coparenting plan” that operationalized their expectations into a detailed behavior plan, including anticipated obstacles implementing the plan. Post-partum depression, anxiety, and stress were discussed, but only in regards to their impact on the coparenting relationship. The first

post-birth session focused on revising their coparenting plan and modifying it if necessary using targeted problem-solving techniques. In the final session, couples created a coparenting plan for the remainder of their child's first year, including how consistency in limit setting would be implemented, both in terms of promoting supportive (vs. undermining) coparenting behavior and increasing the likelihood of more effective management of interactional patterns.

Adherence coding—To ensure that coaches were adhering to the intervention protocols and did not include prohibited interventions, 25% of the intervention tapes were coded by a team of trained coders blind to the study hypotheses. To ensure equal coverage across couples and conditions, one of the four sessions from each couple in the relationship and coparenting interventions was randomly selected for coding as well as 25% of information sessions. Across these 68 sessions, coaches were rated as providing extensive and in-depth coverage of the materials on a 7-point scale ($M = 6.62$, $SD = 0.47$, “Excellent adherence – covers all major and minor points”), with no significant differences across intervention conditions. There was single incident of a prohibited intervention (1% of sessions) in which a coach in a relationship intervention meeting encouraged the couple to consider post-birth division of labor. Couples would occasionally introduce topics more appropriate to another condition (e.g., a couple in a relationship intervention bringing up division of labor); in these cases, it was coded as a prohibited intervention only if, as in the one incident above, the coach then asked the couple to expand on the prohibited topic. Reliability coding of these prohibited interventions indicated perfect reliability.

Additionally, these 68 sessions were coded on important non-content dimensions. On average, coaches were rated on a 7-point scale as warm ($M = 5.86$, $SD = 0.39$, “Coach is consistently warm and kind with no breaks in connection”) and couples' in-session response to the material was rated as strong ($M = 5.25$, $SD = 0.58$, “Couple always interested and/or benefiting”). On average, sessions lasted just under 1.5 hours ($M = 83$ minutes, $SD = 12.6$). In all cases, omnibus and univariate comparisons indicated no differences between interventions.

Measures

Participants completed assessment packets upon entering the study, as well as at 1, 3, 6, 12, 18 and 24 months postpartum. The initial and 12-month assessments were completed in-person; the remaining assessments were completed by mail, with separate envelopes provided to partners to ensure confidentiality. Except where noted, measures were collected at all time points.

Demographic and relationship information—As part of a larger questionnaire, one-item measures were collected on education, relationship status, previous marriages, and information on the family of origin (parental divorce and father-to-mother violence). This information was collected only at the initial assessment.

Relationship satisfaction—The Dyadic Adjustment Scale (DAS; Spanier, 1989) is a 32-item measure of relationship satisfaction and is one of the most widely used satisfaction

measures in the literature. In the current sample, the mean Cronbach's alpha across assessments was .92 for women and .89 for men. Mean relationship satisfaction at the initial assessment was 119 (SD = 10.7) for women and 118 (SD = 9.77) for men, approximately equal to community norms in the United States.

Frequency of affection and criticism—The natural log of the affection and criticism subscales of the Frequency and Acceptability of Partner Behavior Inventory (FABPI; Christensen & Jacobson, 1997; Doss & Christensen, 2006) were used. The three-item affect subscale (physical affection, verbal affection, sexual activity) had a mean Cronbach's alpha of .70 for women and .68 for men across time points. At the initial assessment, couples reported their partner engaged in a mean of 266 incidents of affection in the past month (almost 9 per day; SD = 153). The three item criticism subscale (critical, verbal aggression, controlling/bossy) subscale had a mean Cronbach's alpha of .75 for women and .68 for men across time points and a mean of 9.27 (SD = 14.9) incidents in the past month at the initial assessment.

Relationship aggression—An 8-item short form of the Conflict Tactics Scale-2 (Straus & Douglas, 2004), consisting of reports of physical aggression and injury committed by either the self or the partner, was used to assess the presence of relationship aggression at the initial assessment. Twelve percent of couples reported physical aggression by either partner in the past year but only one couple reported that the physical aggression resulted in injury.

Coparenting—The Parenting Alliance Measure (PAM; Abidin & Konald, 1999) is a 20-item scale that assesses the degree to which individuals emotionally support each other as parents, respect each other's parenting decisions, effectively communicate about the child, and share a commitment to parenting the child. In the current sample, the mean Cronbach's alpha across all time points was .94 for women and .92 for men. At the one-month assessment (the first time PAM was administered), women in the control group reported a mean of 80.1 (SD = 9.8) and men reported a mean of 84.6 (SD = 6.7).

Division of childcare—The Childcare Responsibility Questionnaire (Barnett & Baruch, 1987) was administered at the 1, 3, 6, and 12-month assessments. In the current study, nine items assessing direct childcare were selected from the 15-item scale; items were scored on a 5-point scale such that zero indicated parents were equally dividing childcare and higher numbers indicated that women were doing more. The mean Cronbach's alpha for these nine items was .81 for women and .64 for men across time points. At one month after birth, both men (M of items = 0.51; SD = 0.40) and women (M of items = 0.70; SD = 0.41) in the control group reported that women were doing more direct childcare.

Depressive Symptoms—The Beck Depression Inventory- 2nd Edition (BDI-II; Beck, Steer & Brown, 1996) is a 21-item measure used to assesses the severity of depressive symptoms. Only the score from the initial assessment is utilized in the current study (Cronbach's alpha = .88 for women and men). During pregnancy, women reported a mean BDI score of 11.2 (SD = 5.5) while men scored slightly lower (M = 7.34, SD = 6.0).

Stress—The Perceived Stress Scale (PSS; Cohen, Kamarck & Mermelstein, 1983) is a 10-item self-report questionnaire that assesses the degree to which situations in an individual's life are appraised as stressful in the past month. The PSS was administered at the initial and 1, 3, 6, and 12-month assessments, the mean Cronbach's alpha was .90 for women and .87 for men over all time points. During pregnancy, both women ($M = 13.9$, $SD = 5.3$) and men ($M = 12.7$; $SD = 5.2$) reported moderate amounts of stress.

Calculation of Cumulative Risk

Cumulative risk was calculated for each individual based on his or her total combination of the seven possible risk factors used as part of the eligibility criteria. Each risk factor was assessed for each individual dichotomously, with each individual receiving a score of one (presence) or a zero (absence) for a given risk factor. Individuals' risk factors were summed and used as a continuous variable in later analyses. A Cronbach alpha was not computed for this total score as it was conceptualized as a sum of independent risk factors, consistent with previous research on risk in marriage more generally (e.g., Rauer, Karney, Garvan, & Hou, 2008) and the transition to parenthood (e.g., Halford et al., 2012). For this sample, the men's mean risk score was 1.31 ($SD = 1.02$; range: 0–4) and women's mean risk score was 1.78 ($SD = 1.07$, range = 0–5).

Data Analysis and Missing Data

Analyses were conducted using the HLM program (Version 7.1; Rudenbush, Bryk, & Congdon, 2010). Using a multivariate equation following the recommendations of Raudenbush, Brennan, and Barnett (1995), separate intercepts, slopes, errors, and variances were fit for men and women at level one utilizing Full-Information Maximum Likelihood (FIML) estimation. At level 2, each level 1 variable was modeled by an intercept, two dummy codes for the two active interventions, a main effect of risk (grand-mean centered), two risk-by-intervention interaction terms (one for each intervention dummy code), separation status, and a random effect. Separation status was included as a covariate in all analyses (0 = intact; 1 = separated) such that reported estimates are for couples who remained together throughout the study.

Examination of the distributions for dependent variables revealed that all were normally distributed except the frequency of affection and criticism behaviors; analyses assuming a Poisson distribution were used to account for the positively-skewed nature of these variables. For each dependent variable, a chi-square difference test of the model deviance was used to compare fits of intercept-only, linear change, quadratic change, and cubic change models. In all cases, a model with both linear and quadratic parameters for time showed superior fit.

During the course of the study, seven couples separated (two from the control group, one from the coparenting group and three from the couples group). Coparenting and individual functioning measures, but not relationship functioning measures, were collected after separation. Across all couples, data was collected at 95.4% of the possible assessment points. Compared to those with complete data, individuals who failed to complete questionnaires at one or more time points differed significantly only on the rates of change

in the frequency of critical behavior. Therefore, missingness was included as a control variable for all analyses involving this variable.

Results

Information Control Group

Relationship functioning—Women in the information control group reported significant initial declines in global relationship satisfaction and physical affection; these declines significantly slowed for both variables over time (see Table 1 and Figure 2). Women also reported significant initial increases in criticism after birth; these increases significantly slowed over time. Men in the control group did not report any significant changes in relationship functioning (Table 1 and Figure 2).

Parenting alliance—Neither women nor men in the information control group reported significant change in parenting alliance or division of childcare (Table 1 and Figure 2).

Perceived stress—Women, but not men, in the control group reported rapid initial increases in perceived stress which peaked approximately six months after birth; by approximately one year after birth, women's perceived stress had returned to pregnancy levels (see Table 1 and Figure 2).

Relationship-Focused Group

Relationship functioning—Women in the relationship intervention, compared to women in the control group, reported significantly fewer initial declines in relationship satisfaction (see Table 1 and Figure 2). To determine the magnitude of these effects, we combined the linear and quadratic terms (controlling for initial, non-significant differences in intercept) and divided by pooled gender-specific standard deviation for that time point. At one year after birth, women in the relationship intervention were 10.41 points higher than women in the control group, a large effect (Cohen's $d = 0.87$). By two years after birth, the advantage had shrunk to 6.50 points, a medium effect (Cohen's $d = 0.53$). The intervention was equally effective for high- and low-risk women in preventing declines in relationship satisfaction. In comparison to the control group, women also reported significantly fewer initial declines in affection frequency but more subsequent declines in affection (Table 1). There were no significant effects of the intervention on changes in perceived criticism.

For men, there were no significant main effects of the relationship intervention on their linear or quadratic slopes of relationship satisfaction (see Table 1 and Figure 2). One year after birth, men in the couples group were an estimated 0.01 points lower than men in the control group and 2.37 points higher by two years after birth (Cohen's $d = 0.18$). Notably, however, the program was significantly more effective for higher-risk men in reducing initial declines in relationship satisfaction ($b = 0.49$, $SE = 0.22$; $p = .031$). Additionally, the intervention effect on men's reports of their partners' criticism significantly interacted with risk such that higher risk men in the relationship intervention showed fewer increases in criticism over time than did lower risk men ($b = -0.075$, $SE = 0.027$; $p = .007$).

Parenting alliance—One month after birth, women in the relationship intervention reported parenting alliance that was an estimated 10.26 points higher than women in the control group; this effect was large in magnitude (Cohen's $d = 0.92$). Women's parenting alliance did not significantly change over time and the advantage of the relationship intervention remained at one year (Cohen's $d = 0.84$) and two years (Cohen's $d = 0.53$) after birth. In contrast, men in the relationship intervention did not report significantly higher parenting alliance at one month (Cohen's $d = 0.03$) or significant changes in that parenting alliance over time. By two years after birth, men in the relationship intervention reported moderately higher parenting alliance than the control group (Cohen's $d = 0.63$); however, this difference was not statistically significant ($b = 5.91$, $SE = 2.77$; $p = .080$).

Compared to the control group, neither men nor women reported significant differences in initial division of childcare or changes in that division over time (Table 1).

Perceived stress—As depicted in Figure 2, both women's and men's perceived stress remained relatively stable during the first year postpartum. Compared to the control condition, women reported significantly fewer initial increases in perceived stress but fewer subsequent declines in stress (Table 1) during the first year after birth. Men in the relationship condition did not significantly differ from men in the control group.

Coparenting-Focused Group

Relationship functioning—Compared to the control group, women in the coparenting group showed significantly fewer declines in global relationship satisfaction (Figure 2 and Table 1). Combining the linear and quadratic terms (controlling for initial, non-significant differences in intercept) revealed an estimated large difference of 11.98 points at one year after birth (Cohen's $d = 0.99$) and 10.33 points by two years after birth (Cohen's $d = 0.84$). Additionally, women in the coparenting group reported significantly smaller initial drops in the frequency of affection, but also significantly fewer gains during the latter part of the study, than the control group (Table 1). However, the coparenting intervention was significantly less effective at preventing initial declines in affection for higher risk women ($b = -0.055$, $SE = 0.020$; $p = .009$), such that the positive intervention effect on initial affection was reduced to zero at approximately two standard deviations above the mean of risk. Additionally, although the coparenting intervention did not have a main effect on women's linear or quadratic reports of their partners' criticism, the intervention effect again interacted with risk such that higher risk women reported fewer quadratic declines in criticism ($b = 0.005$, $SE = 0.002$; $p = .033$).

Men in the coparenting group did not significantly differ from the control group in their relationship satisfaction over time (Cohen's $d = 0.45$ at one year and Cohen's $d = 0.42$ at two years; Table 1 and Figure 2); there was no significant risk-by-intervention interaction. Although the coparenting intervention did not have significant effects on men's reported frequency of their partner's criticism, the intervention effect interacted with risk such that higher risk men showed significantly greater initial decreases in criticism than did lower risk men ($b = -0.076$, $SE = 0.028$; $p = .009$).

Parenting alliance—Women in the coparenting group, compared to women in the control group, reported significantly greater parenting alliance shortly after birth (see Table 1 and Figure 2). The estimated mean difference at one month after birth 11.49 and was large in magnitude (Cohen's $d = 1.24$). However, there was a significant interaction with risk such that the parenting intervention was less effective in strengthening initial parenting alliance for high-risk women ($b = -3.79$, $SE = 1.67$, $p = .026$). Although neither the linear nor quadratic slopes were significantly different than the control group over time, the estimated size of the difference decreased somewhat over time (Cohen's $d = 1.06$ at one year and Cohen's $d = 0.47$ at two years), primarily due to improvements in parenting alliance in the control group over time (Figure 1).

Men in the coparenting group did not significantly differ from the control group in parenting alliance at one month (Cohen's $d = -0.13$; see Table 1) and neither the linear nor quadratic slopes were significantly different from the control group. By two years after birth, men in the coparenting group reported moderately higher parenting alliance than the control group (Cohen's $d = 0.66$); however, this difference was not significantly different ($b = 5.10$, $SE = 2.84$; $p = .076$). However, men in the coparenting intervention reported that, compared to the control group, they participated in a significantly greater proportion of the childcare ($b = -0.33$, $SE = 0.16$, $p = .029$) at one month after birth, a difference that did not significantly change during the first year after birth.

Perceived stress—As with the relationship-focused intervention, during the first year after birth, women in the coparenting intervention reported significantly fewer initial increases in perceived stress than the control group but significantly greater subsequent increases than the control group (see Figure 2 and Table 1). There were no significant intervention effects for men or significant interactions with risk for either gender.

Comparisons of Relationship and Coparenting Groups

Finally, to compare the relative effectiveness of the relationship and coparenting interventions against each other, analyses were conducted omitting the control group and coding intervention as 0 = relationship and 1 = coparenting. Results indicated that the interaction between risk and intervention type was significant when predicting changes in relationship satisfaction. Specifically, the coparenting intervention, compared to the relationship intervention, was significantly less effective in buffering higher-risk men from significant initial declines in relationship satisfaction ($b = -0.69$, $SE = 0.25$, $p = .0007$). However, the coparenting intervention was significantly more effective than the relationship intervention in preventing subsequent (quadratic) declines in higher-risk men's satisfaction ($b = 0.022$, $SE = 0.10$, $p = .033$). To place the magnitude of these effects in context, however, the intervention-by-risk interactions were approximately equal to the main (non-significant) beneficial effects of the coparenting intervention compared to the relationship intervention (linear $b = 0.67$ and quadratic $b = -0.23$) on relationship satisfaction. In other words, men in the coparenting intervention who were one standard deviation higher than average on risk experienced trajectories of satisfaction similar to men in the relationship intervention at average levels of risk. No other statistically significant differences between the active interventions were found. However, the parenting intervention was somewhat

more effective than the relationship intervention in increasing men's initial childcare involvement at one month after birth ($b = -0.264$, $SE = 0.141$, $p = .067$).

Discussion

Overall, the effects of the brief coparenting and relationship interventions were promising. Compared to the information control group, both interventions buffered women's relationship satisfaction from declines; these effects were large in magnitude one year after birth and generally medium in magnitude two years after birth. Furthermore, compared to the control group, both interventions created large, initial improvements in women's parenting alliance which were generally maintained as medium effects two years following birth. Moreover, the size of these intervention effects was notably larger than those reported in meta-analyses of couple- and parenting interventions over the transition to parenthood (Cohen's $d = 0.08$ – 0.13 for relationship satisfaction; Pinquart & Teubert, 2010a; 2010b; Cohen's $d = 0.35$ for parenting; Pinquart & Teubert, 2010a). These and other meta-analyses (e.g., Hawkins et al., 2012) have documented that brief interventions – such as those examined in the present study – tend to have even smaller effects, making the efficacy of the current interventions on women's outcomes notable. Additionally, both interventions successfully buffered women against a spike in perceived stress during the first year after birth, consistent with research on existing coparenting interventions (e.g., Feinberg & Kan, 2008; Feinberg et al., 2010).

Additionally, the interventions had a significantly stronger effect on high-risk, compared to low-risk, men's outcomes in several domains. These findings are consistent with previous literature on the transition to parenthood that has found non-significant intervention effects for men on average (e.g., Halford et al., 2010; Petch et al., 2012), yet significant intervention effects for high-risk men (Petch et al.). While there are several possible explanations for this pattern of findings, one likely explanation is that men tend to experience fewer difficulties over the transition to parenthood (e.g., Doss et al., 2009; O'Brien & Peyton, 2002; Shapiro et al., 2000). Indeed, in the present study, men's relationship satisfaction in the control group did not significantly decrease over time – a stability that was roughly comparable to women in the two intervention groups (see Figure 2). Furthermore, men's parenting alliance in the control group started high shortly after birth and remained that way throughout the study – at a level approximately comparable to women in the two intervention groups. In other words, the couple and coparenting interventions served to preserve women's relationship satisfaction and parenting alliance to the level that men – especially low-risk men – experience without intervention. However, results indicated that interventions can be useful for high-risk men.

One of the primary aims of the study was to determine whether a couple- or coparenting intervention would create more change in targeted outcomes. Notably, across 24 tests (6 outcome variables by 2 genders by 2 growth terms) for group differences, there were no main effects for intervention. There was a risk-by-intervention interaction for men's linear and quadratic changes in relationship satisfaction; however, the competing directions of these interaction and their relatively small magnitude suggested that they are likely not clinically meaningful. Thus, the overall results suggest that the coparenting and relationship

interventions resulted in similar improvements when compared to the information control group. Especially notable was the fact that the effects of the targeted interventions generalized across domains – the relationship intervention improved women’s parenting alliance and the coparenting intervention prevented declines in women’s relationship satisfaction. Both interventions also created medium-sized (but non-significant) increases in men’s parenting alliance by two years after birth. While research has repeatedly demonstrated the high correlations between coparenting and relationship satisfaction after birth (e.g., Feinberg, 2003; Margolin et al., 2001), this study is the first we are aware of that experimentally demonstrates that focusing on one domain can create improvements in the other.

There are several implications of the generalization of intervention effects. It suggests that the lengthy interventions that have been previously developed – which include a focus on both coparenting and couple relationship content – can be safely shortened by including a focus on only one of those domains. The question then arises: which is the better focus – coparenting or the couple’s romantic relationship? If resources and time allow, our experience would suggest that an intervention focused on coparenting during the pre-birth sessions and both coparenting and relationship issues during the post-birth sessions (when relationship difficulties have become more salient) would be maximally responsive to the issues that most couples introduce. However, if a focus on only one domain is feasible, then we tentatively suggest coparenting should be the primary target for several reasons. First, we suspect that an intervention with a coparenting focus may be more attractive to expecting couples, as it is more consistent with the broader pre-birth emphasis on the baby (and parenting the baby). In our experience, couples pregnant with their first child were very receptive to the idea they could benefit from outside expertise on how to work together as parents; however, they were less sure how having a baby would affect their relationship. As a result, they sometimes required some convincing that such a focus would be beneficial. Second, coparenting interventions will likely be easier to integrate into existing services for expectant parents. For example, the coparenting intervention as delivered in the present study would be a natural add-on to an existing childbirth class and likely could be delivered in a group setting. However, the relationship intervention, which includes a focus on potentially more personal issues, may be more difficult to deliver in a group format. Finally, there would likely be more training needed for effective delivery of the relationship intervention than of the coparenting intervention – especially if existing childbirth educators provide the interventions. Compared to the coparenting intervention, our experience was that the relationship problems differed more from couple to couple and thus the relationship intervention required more clinical skill to deliver effectively.

The present study has some limitations which should be considered in interpreting the results. First, the relatively small sample size may provide somewhat unreliable estimates of effect sizes. Additionally, by limiting enrollment to couples who had at least one risk factor, we may have somewhat inflated the size of the effects for outcomes that showed larger effects at higher rates of risk (e.g., men’s relationship functioning) and somewhat deflated the size of the effects for outcomes that showed smaller effects at higher rates of risk (e.g., women’s relationship functioning in the coparenting intervention). Therefore, the impact of brief, focused interventions should be replicated in a larger sample. Additionally, the small

sample size limited our ability to detect effect sizes less than approximately $d = 0.60$ with 80% power; therefore, the present study may understate some of the benefits of the two interventions. Power to detect intervention effects on the frequency of affectionate and critical behaviors was also limited by low internal consistency of those measures. Another limitation of the study was the composition of the sample, which was primarily White, non-Hispanic and fairly educated. Previous research suggests that these types of couples are mostly likely to seek out relationship prevention interventions (e.g., Stanley, Amato, Johnson, & Markman, 2006). However, determining the effect of these interventions on a more diverse sample is important as the need is greatest in underrepresented minority couples.

Future studies can extend the present study in important ways. There are several unanswered questions regarding the best way for these interventions (or other brief interventions during the transition to parenthood) to be disseminated. One exciting possibility is that brief interventions can be integrated into existing childbirth classes and delivered by childbirth educators (e.g., Petch et al., 2012). Additionally, it may be possible to modify these interventions so that they can be completed in a self-help manner, dramatically reducing staff burden. For example, self-help books or web-based programs (e.g., www.OurRelationship.com; Doss, Bensen, Georgia, & Christensen, 2013) have been developed to help couples navigate transitions and solve relationship problems. An additional important question for future studies is whether the interventions are effective when a single individual in a couple completes them. Given the present and previous results (e.g., Petch et al., 2012) showing primary benefit of conjoint interventions for women, it is possible that women could achieve many of these gains on their own. However, it is also possible that men's involvement is necessary for women's reported benefits. Additionally, future studies should investigate whether repeated brief interventions during the early parenthood years (following a model similar to that advocated by the Marriage Check-up; e.g., Cordova et al., 2005) can help couples adapt to changing demands on the coparenting and romantic relationships. Finally, in future research, it will be important to determine whether these interventions improve child functioning and whether those improvements can be traced to changes in coparenting or relationship functioning.

In summary, the present study demonstrated that brief interventions over the transition to parenthood can be effective in promoting coparenting and relationship functioning – especially for women and high-risk men – and that these gains persisted throughout the two years of the study. Furthermore, the effects of the coparenting and relationship interventions were similar, suggesting that a narrow focus on either of these domains created improvements in the other domain. Thus, the present study offers encouraging news for dissemination of brief, focused interventions given their lower cost, training requirements, and couples' time commitment.

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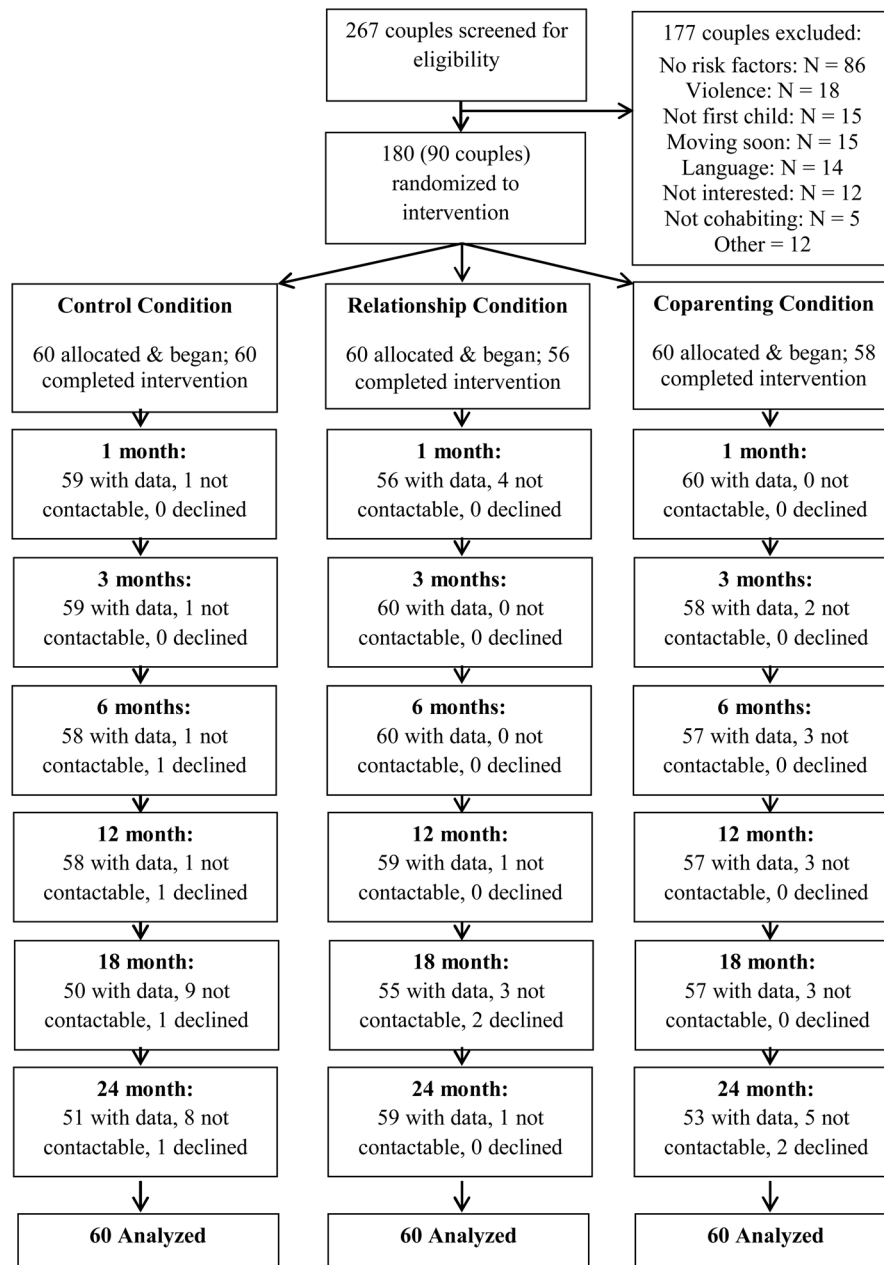


Figure 1.
CONSORT Figure

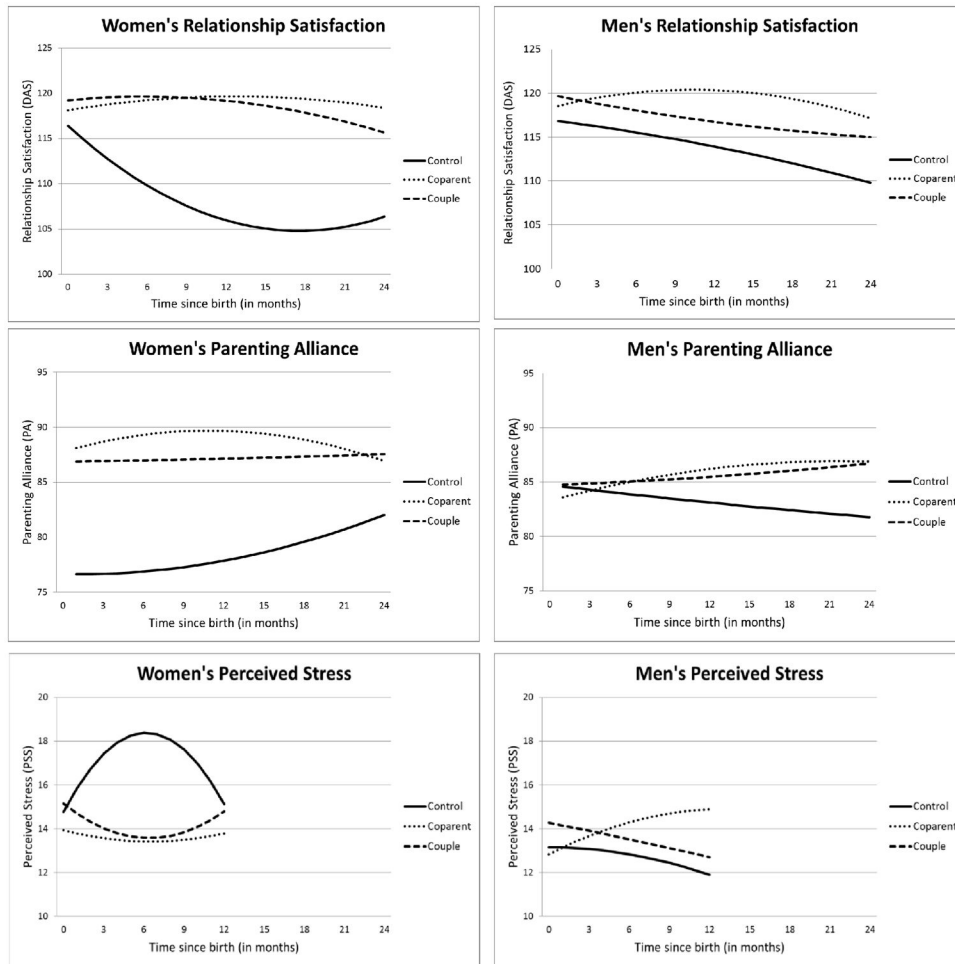


Figure 2. Estimated Change in Relationship Satisfaction and Parenting Alliance
Note: Parenting alliance was not assessed before birth; intercept differences reflect differences in coparenting at one month after birth. Perceived stress was not assessed in the second year after birth.

Table 1
Change in Dependent Variables (Controlling for Risk and Risk-by-Intervention Interactions)

Predictors	Women						Men					
	Intercept		Linear		Quadratic		Intercept		Linear		Quadratic	
	b	SE	b	SE	b	SE	b	SE	b	SE	b	SE
	<i>Information Control Group</i>											
Satisfaction	116.41	2.75	-1.32**	0.41	0.037*	0.016	116.82	2.34	-0.19	0.33	-0.004	0.014
Affection ^a	5.28	0.21	-0.16***	0.03	0.006***	0.002	5.16	0.18	-0.05	0.04	0.002	0.003
Criticism ^a	1.94	0.34	0.14*	0.06	-0.010*	0.003	2.36	0.30	-0.01	0.04	-0.000	0.002
Parent Alliance ^c	76.63	2.40	-0.02	0.42	-0.010	0.016	84.72	1.75	-0.15	0.33	-0.001	0.012
Childcare ^c	0.59	0.15	0.04	0.06	-0.004	0.004	0.60	0.10	-0.01	0.04	-0.001	0.003
Stress	14.78	1.38	1.17**	0.37	-0.095**	0.029	13.16	1.28	-0.00	0.32	-0.009	0.027
	<i>Relationship Intervention (Relative to Control Group)</i>											
Satisfaction	5.84	4.56	1.38*	0.67	-0.050	0.027	1.71	3.58	-0.10 ^b	0.50	0.008 ^b	0.021
Affection ^a	0.04	0.34	0.15***	0.05	-0.008**	0.002	0.26	0.28	-0.01	0.05	0.000	0.005
Criticism ^a	-1.08	0.57	-0.13	0.10	-0.008	0.005	-1.01*	0.46	0.11 ^b	0.06	0.003	0.002
Parent Alliance ^c	10.23*	3.98	0.04	0.69	-0.010	0.028	0.01	2.62	0.19	0.49	0.001	0.018
Childcare ^c	0.08	0.24	-0.01	0.09	0.001	0.007	-0.07	0.16	0.02	0.06	-0.002	0.004
Stress	0.37	2.30	-1.66**	0.61	0.134**	0.049	1.11	1.96	-0.12	0.49	0.008	0.027
	<i>Coparenting Intervention (Relative to Control Group)</i>											
Satisfaction	1.73	4.12	1.57*	0.62	-0.047	0.025	0.55	3.53	0.55	0.50	-0.013	0.021
Affection ^a	-0.19	0.31	0.11* ^b	0.05	-0.005*	0.002	-0.30	0.28	-0.03 ^b	0.05	-0.001	0.005
Criticism ^a	-0.16	0.51	-0.16	0.09	0.009 ^b	0.005	-0.39	0.45	0.05 ^b	0.06	0.003	0.002
Parent Alliance ^c	11.15*** ^b	4.02	0.37	0.63	-0.026	0.025	-1.47	2.62	0.48	0.50	-0.009	0.019
Childcare ^c	0.17	0.22	-0.04	0.08	0.001	0.005	-0.35*	0.16	0.07	0.06	-0.003	0.004
Stress	-0.84	2.07	-1.33*	0.56	0.107*	0.045	-0.33	1.94	0.32	0.49	-0.004	0.040

Note: There were no significant differences between the Relationship and Coparenting intervention in intercepts or the main effects for linear/quadratic changes;

^a results of Poisson models, given the skew of frequency data;

b significant interaction with risk – see text;

c Intercept represents level at 1 month post birth;

* $p < .05$

** $p < .01$

*** $p < .001$