Published in final edited form as:

Fam Relat. 2020 October ; 69(4): 849–864. doi:10.1111/fare.12431.

An Uncontrolled Trial of Flexibly Delivered Relationship Education with Low-Income, Unmarried Perinatal Couples

Richard E. Heyman,
New York University

Katherine J. W. Baucom,
New York University

Amy M. Smith Slep,
New York University

Danielle M. Mitnick,
New York University

W. Kim Halford
University of Queensland

Abstract

Objective—To examine couple and parenting outcomes from an American version of Couple CARE for Parents (CCP) in low-income, unmarried couples.

Background—We adapted an evidence-based, flexibly delivered program for use with low-income, unmarried couples, for whom the outcome literature is scarce.

Method—Couples ($n = 443$) were recruited from maternity units and began CCP. They completed measures before, during, and immediately after the intervention, and 6 months later.

Results—Moderate psychological intimate partner violence (IPV) declined and perceived parenting efficacy increased over time; there was no change in severe psychological or physical IPV. Individuals with lower levels of relationship commitment than their partners showed improvement in relationship satisfaction, whereas those with similar or higher levels of commitment maintained their baseline levels despite being in a period of expected satisfaction decline.

Correspondence concerning this article should be addressed to Richard E. Heyman, Family Translational Research Group, New York University, 137 E 25th Street, 6th Floor, New York, NY 10010. Telephone: 212-998-9984. richard.heyman@nyu.edu.

Author Note

Richard E. Heyman, Family Translational Research Group, New York University; Katherine J. W. Baucom, Family Translational Research Group, New York University; Amy M. Smith Slep, Family Translational Research Group, New York University; Danielle M. Mitnick, Family Translational Research Group, New York University; W. Kim Halford, Department of Psychology, University of Queensland. Katherine J. W. Baucom is now at the Department of Psychology, University of Utah.

Conflict of Interest: W. Kim Halford is the co-developer of Couple CARE and Couple CARE for Parents programs and receives royalties from the sale of these programs. He is also the Principal Investigator on grants which provide funding for intervention research on Couple CARE for Parents program. All the other authors declare that they have no conflict of interest.

Conclusion—CCP showed some signs of helping low-income couples during a stressful period and its flexible service delivery model allowed these couples to participate by reducing the impediments of transportation challenges, conflicting work schedules, and overall time poverty.

Implications—Practitioners interested in using CCP with low-income couples would likely maximize the impact by (a) focusing on pregnant, first-time parents; (b) integrating CCP within post-natal healthcare; and/or (c) assuming that a considerable minority of couples will avail themselves of only up to two sessions, and thus practitioners should front-load content, making other content optional or just-in-time. In addition, non-psychoeducational elements (e.g., gamification, easy computerized tasks to reduce angry responses, watching couple-themed movies) could enliven preventative offerings for perinatal couples.

Keywords

prevention; couple relationship; parenting; socioeconomic status; intimate partner violence

Despite valuing marriage equally, adults from low-income circumstances are at higher risk than those from other income groups for having children out-of-wedlock, not marrying, and divorce (e.g., Karney & Bradbury, 2005). Children from low-income homes are at higher risk than those from other income groups for myriad problems, ranging from cognitive and academic issues to delinquency to psychological disorders (e.g., Roy & Raver, 2014), and the elevated risk for children's negative outcomes extends into early adulthood (Sobolewski & Amato, 2005). A key pathway to children's poor adjustment is economic stress, which is substantial in low-income families and is associated with elevated discord in parent-parent and parent-child relationships (Sobolewski & Amato, 2005).

Likewise, compared with their married counterparts, unmarried women who give birth tend to have less stable romantic relationships (Graefe & Lichter, 2007), are less likely to enroll in college (Radey, 2017), and are more likely to subsequently marry men who earn less or are unemployed (Graefe & Lichter, 2007). Further, compared with children with two residential parents, those with single mothers are at increased risk for poor health (e.g., psychological problems, overweight), which is only partially explained by socioeconomic factors (Scharte & Bolte, 2012).

Around the turn of the century, stakeholders in high-income countries—politicians, policymakers, researchers, religious leaders, social service agencies, advocates—converged on the belief that fostering healthier, more stable families was good public policy and good public health practice (Cowan & Cowan, 2014; Wilcox et al., 2005). Given antipathy in the United States toward European-style social services for young parents and U.S. norms emphasizing individual responsibility for behavior, momentum built toward investing in relationship education programs (Giele, 2013). Support for programs promoting respectful, nonviolent intimate partner and parent-child relationships reached its apex in the mid-2000s with the massive federal funding of the Building Strong Families study (Wood, McConnell, Moore, Clarkwest, & Hsueh, 2010) and the Healthy Marriage Initiative (see Johnson, 2012).

The United States has spent nearly \$1 billion since 2005 to promulgate and evaluate prevention programs for low-income couples and parents. The logic behind prevention

programs held that if healthy, stable relationships are due to a partner or parent's behavior, then prevention programs at key developmental milestones that teach and bolster relationship skills could reduce the emotional and financial cost of problems, improve public health and, more broadly, the commonweal.

This study was funded as part of the U.S. government's Healthy Marriage Initiative (see Cowan & Cowan, 2014; Johnson, 2012) to study the impact of service provision to low-income, unmarried perinatal couples. There are some reasons why the perinatal period may be a propitious time for couples prevention. First, parents of newborns recognize the challenges facing them, providing a critical period for optimal openness to learning and improving relationship and parenting skills (Halford et al., 2003). Second, high-risk couples agree to participate in prevention prior to the birth of a child at rates higher than do such couples prior to marriage (Petch, Halford, Creedy, & Gamble, 2012a). Third, the perinatal period is an important one for prevention because partners are at slightly elevated risk for intimate partner violence (IPV; Charles & Perreira, 2007) and substantial relationship satisfaction decline (see meta-analysis by Mitnick, Heyman, & Slep, 2009). Yet effectiveness studies of such programs have been decidedly mixed (e.g., Pinquart & Teubert, 2010; Wood et al., 2010), with a recent meta-analysis finding an exceedingly small effect size ($d = 0.09$) for low-income new parents (Arnold & Beelmann, 2018). Of greater concern, there have been indications of iatrogenic effects, especially around IPV (e.g., Heyman, Slep, et al., 2019; Moore et al., 2012). Thus, despite some promising results and the possible openness of parents to prevention during the perinatal period, further research is needed to test both effectiveness and iatrogenic effects.

Given that low-income status contributes to time poverty and transportation difficulties (Broussard, 2010), we selected a relationship education program (Couple CARE for Parents [CCP]; Halford, Petch, & Creedy, 2015) that does not require travel; does not impose inflexible, group-oriented scheduling demands; and allows both partners to build their skills in their home at the time of their choosing (with no work time missed). These factors were critical given that perception of barriers (e.g., time, travel) is the strongest predictor non-participation in family skills education (e.g., Sullivan, Pasch, Cornelius, & Cirigliano, 2004).

Couple CARE for Parents of Newborns

CCP, which was developed and tested in Australia (Halford, Petch, & Creedy, 2015), was designed for flexible delivery in a variety of settings (telephone, face-to-face individual, group, or Internet) and is a new-parents variant of the original Couple CARE (Halford, Moore, Wilson, Dyer, & Farrugia, 2004). CCP targets behaviors and cognitions associated postnatal decline in relationship satisfaction (Shapiro, Gottman, & Carrère, 2000) and IPV (Slep et al., 2011)—such as hostile reciprocity, unrealistic expectations, poor conflict management, and stress—by assisting partners in the following: (a) assessing relationship strengths and weaknesses, (b) developing realistic parenting and compatible coparenting expectations, (c) defining the relationship they want, (d) developing key relationship and parenting skills, and (e) identifying individual actions to strengthen their relationship and parenting skills.

An Australian randomized, controlled trial (RCT) compared Couple CARE for Parents with a mothers-only treatment control and found less decline in relationship satisfaction for women (but not men) who received CCP (Halford et al., 2010). A larger subsequent RCT found support for moderated effects on relationship satisfaction: high-risk women who received the couple-based program evidenced less decline in satisfaction compared with those in the control group, with a similar, but not statistically significant, trend for men (Petch et al., 2012b). The Australian CCP trials focused on couples having their first child and delivered CCP in concert with birthing classes and home-visitation for new parents (part of the Australian universal health system). Three-quarters of the program was delivered in weekend workshops during the final trimester, with two home visits after the child's birth. Participants were almost entirely middle-class couples in long-term relationships.

CCP targets interpersonal processes within relationships and promotes skills-based changes in behavior among couples with a newborn in four domains: (a) coping and stress, (b) couple communication and conflict management, (c) expectations for both the couple relationship and for the parent-child relationship, and (d) mastery of self-directed change (Halford et al., 2015). CCP is similar to other cognitive-behavioral dyadic skills-based approaches to relationship education (e.g., Halford, Markman, Kline, & Stanley, 2003) with two important exceptions. First, it has a greater emphasis on flexibility in mode of delivery (e.g., video-based content and participant personalization via workbook exercises combined with coaching done face-to-face, via telephone or video, or via the Internet). Second, CCP has a greater emphasis on self-directed goal setting and self-targeted behavior change. Halford, Sanders, and Behrens (1994) argued that most skills-based couple prevention and treatment adopt the same problematic approach that produces couple distress: individuals trying to change their partners. In a self-regulation approach, prevention involves moving participants toward a self-focused, positive change orientation. This approach is empowering because individuals have no direct control over their partners' behavior but do have control over their own behavior. See Heyman, Baucom, Slep, Mitnick, and Lorber (2019) for detailed information about CCP and for effect sizes for the Australian trials.

The American version of CCP (Halford, Heyman, Slep, Petch, & Creedy, 2009) was developed to better suit low-income, unmarried parents and to fit American participants. First, our recruitment partners in exurban New York obstetrics departments indicated that only postnatal recruitment on maternity units would provide access to most in the target population. Second, this change in recruitment necessitated vast rearrangement and reworking of CCP material to transform a largely prenatal program into a postnatal one. Third, the language and coverage of concepts were simplified. Fourth, based on pilot testing, the highly didactic style of the relationship education videos was a poor fit to our couples, so American CCP videos were professionally produced by a New York-based film company in a documentary style using American couples (with diverse racial and ethnic backgrounds, socioeconomic statuses, living situations, and relationship statuses) who had participated in CCP pilot testing. Finally, content explicitly focused on IPV was included.

The American version of CCP comprised eight sessions during the baby's first eight months. Similar to the Australian version, a coach assisted each couple through the program. Coaches were master's- or doctoral-level clinicians supervised by licensed clinical

psychologists. Sessions 1 and 4 were home visits; the others were typically conducted via telephone. Sessions began when newborns were 3 months-of-age and were scheduled 1–3 weeks apart, with early sessions being more closely spaced. Home visits were approximately 1 hour, and phone sessions were 30–60 minutes. Sessions 1–7 comprised 2–3 segments, with each segment including a 5–7-minute video that introduced key relationship or parenting skills. Videos included didactic content and demonstrations of the skills targeted in that session (e.g., communication, playing with a young baby, asking for support). Couples watched the videos and completed activities from their workbooks prior to the session. Session 8 aimed to solidify prior gains and a plan for maintaining those gains into the future. During each session, the coach (a) checked on progress concerning self-change plans from the last session, (b) discussed the activities the couple completed pre-session, (c) reviewed the session content and explored it with the couple, and (d) worked with each partner to identify and create self-change plans.

These adaptations, along with the implementation details described below, incorporated the eight successful techniques for retaining low-income parents of Katz et al. (2001) and Senturia et al. (1998): (a) in-person recruitment; (b) flexible scheduling; (c) convenient access; (d) option of telephone or in-person contact; (e) incentives; (f) multiple follow-up calls; (g) maintaining multiple contacts for every participant; and (h) frequent contact (i.e., no more than a month goes by without contact). In this uncontrolled study of a flexibly-delivered program for low-income, unmarried parents of a newborn, we hypothesized that CCP would result in (a) decreased psychological and physical IPV and (b) increased relationship and parenting satisfaction and parenting efficacy compared with pre-program levels. Because CCP was designed for those in committed relationships, we hypothesized that relationship commitment would moderate the program impacts.

Method

Participants

Recruitment took place at maternity units in two hospitals in Suffolk County, NY. As shown in the flow diagram (see Figure 1), a total of 11,014 couples were approached about the intervention. Inclusion criteria were that the partners had to be (a) in an ongoing relationship but unmarried, (b) able to participate using English language, and (3) of low-income status (below the self-sufficiency standard for Suffolk County, NY, which at the time was, for example, \$4,066 per month for two adults and one infant; Fiscal Policy Institute, 2010). Exclusion criteria were either partner reporting IPV toward the mother that resulted in injury or fear. In total, 2,096 couples met study inclusion criteria (19.0% of those approached, 22.1% of those screened), 491 couples enrolled in the study (23.4% of those eligible), and 443 couples participated in at least one session (90.2% of those enrolled, 21.1% of those eligible). At least one partner from 373 couples completed some portion of the assessments described below; study hypotheses were tested using these data. The sample that began the program was 43.4% White non-Hispanic; 20.9% Hispanic or Latino (of any race); 23.7% African American; 10.3% of more than one race or ethnicity; and 1.8% Asian, Native American, or Pacific Islander. Partners tended to be in their 20s ($M_{age} = 28.99$, $SD = 8.47$

for men, $M_{age} = 25.77$, $SD = 6.19$ for women) and had been together for 3.81 years ($SD = 3.18$).

Procedure

All study procedures were approved by the university institutional review board. Participants were paid up to \$175 per person for completing four questionnaire assessments over the course of the study: baseline (prior to Session 1), mid-program (after Session 4), post-program (when child was approximately 8 months-of-age), and a follow-up 6–7 months later (when child was approximately 15 months-of-age).

CCP sessions were free and participants were not paid for attending. Sessions began after the first assessment (when babies were 3 months-of-age) and were scheduled 1–3 weeks apart, with early sessions being more closely spaced. Sessions 1 and 4 were 1-hour home visits; the others were typically via telephone (30–60 minutes in duration). Videos and workbook exercises were completed during Session 1; thereafter couples watched the videos and completed activities from their workbooks prior to the session at a time and location of their convenience. Coaches initiated the telephone or video contact at a pre-arranged time. During each session, the coach (a) checked on progress from previous sessions' self-change plans; (b) discussed the activities the couple completed pre-session; (c) reviewed the session content, explored it with the couple, and clarified any concepts with which the couple may have been struggling; (d) worked with each partner to identify and create self-change plans; and (e) was a source of support and knowledge during this challenging transition. Session 8 was approximately 1 month after Session 7 and entailed a review of prior gains and an emphasis on the meta-skills of self-regulation and self-directed action for coping with future challenges. The (online only) Appendix provides the table of contents of the workbook.

Measures

Intimate partner violence—The Revised Conflict Tactics Scale (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996) is the most widely used measure of IPV, with excellent convergent validity (e.g., Heyman, Snarr, Slep, Baucom, & Linkh, in press). The following four subscales were used: moderate psychological IPV (4 items; e.g., insulted or swore), severe psychological IPV (4 items; e.g., called partner dumb or ugly), moderate physical IPV (5 items; e.g., grabbed), and severe physical IPV (7 items; e.g., punched or hit). Participants reported both perpetration and victimization frequencies in the past 12 months on a 7-point scale (0 = *never*, 1 = *1 time*, 2 = *2 times*, 3 = *3–5 times*, 4 = *6–10 times*, 5 = *11–20 times*, and 6 = *more than 20 times*). Mean response scores were calculated for each subscale. Subscale scores used for analysis were the higher of one partner's perpetration responses and the other partner's victimization responses. The CTS2 was not designed to sample a construct with a number of related items; thus, Cronbach's α s were not calculated (Shortt, Capaldi, Kim, & Owen, 2006). To decrease the skew and kurtosis of the distributions of the aggression subscales, we winsorized extreme high scores (> 2.5 SD s above the mean) to 2 SD s above the mean prior to analysis. At baseline, 88.7% of participants had engaged in moderate psychological IPV, 44.1% in severe psychological IPV, 41.7% in moderate physical IPV, and 25.5% in severe physical IPV.

Relationship satisfaction—The Quality of Marriage Index (QMI; Norton, 1983) comprises five broadly worded statements about relationship quality (e.g., “We have a good relationship”) with response options ranging from *very strong disagreement* (0) to *very strong agreement* (6) and a global satisfaction item rated on a 10-point scale (“relationship” was substituted for “marriage” throughout the measure). The QMI has excellent convergent and discriminant validity (Heyman, Sayers, & Bellack, 1994); and internal consistency in this study was excellent (mean α s across time = .96 for both men and women). At baseline, 18.1% of men and 24.1% of women reported clinically significant relationship distress (i.e., QMI scores less than 24.5; Funk & Rogge, 2007).

Parenting satisfaction and efficacy—Partners completed the 17-item Parenting Sense of Competence Scale (PSCS; Johnston & Mash, 1989). The PSCS includes a 9-item Satisfaction subscale that measures parenting frustration, anxiety, and motivation and an 8-item Efficacy subscale that measures competence, problem-solving ability, and capability in the parenting role. Items are rated on a scale from *strongly disagree* (1) to *strongly agree* (6). Mean α s across time were acceptable for both the Satisfaction (.74 for men, .75 for women) and Efficacy subscales (.78 for men, .79 for women).

Relationship commitment—Partners completed the single-item Broderick Commitment Scale (Beach & Broderick, 1982) at baseline, which assesses general commitment within a relationship on a scale from 1 to 10. Consistent with the population for which CCP was designed, both men and women reported high levels of commitment prior to CCP ($M = 9.29$, $SD = 1.50$ for men, and $M = 9.33$, $SD = 1.49$ for women). Fewer participants responded to this item ($n = 249$ men and $n = 279$ women) relative to the other baseline measures, likely due to the formatting and placement in the questionnaire packet.

Intervention process—Fidelity, alliance, and engagement were measured with rationally-derived study-specific measures. These intervention process measures are index measures that do not assume internal consistency (Shortt et al., 2006), so we do not report alphas. Intervention fidelity was assessed via coach ratings after each session. Nine items, including coach behaviors and session characteristics (e.g., “Coach reviewed reflections from the previous unit”) were rated as *yes* (1) or *no* (0). Therapeutic alliance was assessed via coach and participant ratings on seven items (e.g., “The coach created an environment that encouraged the participants to open up”); response options ranged from *not at all* (0) to *very much* (4). Participant ratings were made after Sessions 2 and 7. Finally, engagement was assessed via coach ratings of a random subsample (20%) of sessions. Three items (e.g., “Participants completed the assigned homework from the previous session”) were rated as *no* (0), *somewhat* (0.5), or *yes* (1). Mean ratings of intervention process were calculated across sessions to form composite measures, with higher scores indicating greater fidelity, alliance, or engagement.

Data Analysis

We examined linear and quadratic change in outcomes across time with full information maximum likelihood estimation growth models computed in Hierarchical Linear and Nonlinear Modeling (HLM 7; Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2011).

Table 1 shows descriptive statistics for outcomes at each assessment wave. To determine whether it was necessary to control for variance due to extraneous factors, we tested preliminary models to examine whether the following covariates independently moderated baseline levels and change in outcome over time: gender (*male* = -0.5 , *female* = 0.5) and racial/ethnic minority status (*racial/ethnic minority* = -0.5 , *White* = $.5$) at the individual level (Level 2) and intervention dosage (number of sessions completed; mean centered) at the couple level (Level 3). Covariates that were statistically significant in preliminary models were added to the 3-level base model below. The winsorized IPV scales were still somewhat skewed and kurtotic, so we re-ran models with square root transformations. The pattern of results did not change; therefore, we report the untransformed results for ease of interpretation.

Time was coded 0 (*baseline*), 1 (*mid-program*), 2 (*post-program*), and 3 (*6-month follow-up*) such that the intercept represented expected outcome at baseline, the linear slope represented instantaneous growth rate at baseline, and the quadratic effect represented acceleration in each growth trajectory. When there was not a statistically significant quadratic effect, this term was removed from the final model. We probed statistically significant interactions with post hoc hypothesis tests in HLM or (in the case of interactions with covariates) re-centering the predictor variable to 1 SD above or below the mean (Aguinis, Gottfredson, & Culpepper, 2013). We tested whether commitment was a statistical moderator of baseline levels or changes in outcomes across time by adding group (couple) mean-centered commitment at Level 2. When it was statistically significant in preliminary models, we included it in the final model. Table 2 presents the full results of fixed effects from the multilevel growth models.

Results

Intervention Process

Coaches reported that CCP was delivered as intended—mean session fidelity was 0.97 ($SD = 0.07$). Participants and coaches rated the therapeutic alliance as generally high: on a 0–4 scale, respectively, ratings for male participants were $M = 3.34$ ($SD = 0.52$) and 3.41 ($SD = 0.54$), and for female participants were $M = 3.44$ ($SD = 0.48$) and 3.48 ($SD = 0.51$). Finally, participants were generally rated as engaged in the CCP content by coaches (males: 0.88 [$SD = 0.18$]; females: 0.91 [$SD = 0.17$] on a 0–1 scale).

Intimate Partner Violence

As presented in Table 2, there were no statistically significant quadratic effects of time on IPV. Thus, we tested linear effects of time and (when applicable) whether these were moderated by covariates based on the preliminary models described above. Compared with male-to-female, baseline levels of female-to-male moderate physical IPV ($p = .002$) and moderate ($p = .008$) and severe ($p = .016$) psychological IPV were higher. Higher relationship commitment was associated with lower baseline levels of moderate physical IPV ($p = .008$).

CCP may have impacted moderate psychological IPV because there was a statistically significant linear decline ($p = .008$). However, there was no statistically significant linear change in moderate ($p = .190$) or severe ($p = .797$) physical IPV, nor in severe psychological IPV ($p = .070$).

Relationship Satisfaction

As presented in Table 2, both linear and quadratic components of change in relationship satisfaction were included in the final model. Both change components depended on partners' commitment to the relationship ($p = .012$ and $.018$, respectively). Given that relationship commitment was group (couple) mean centered, Table 2 results represent predicted relationship satisfaction at baseline (intercept), initial change from baseline to mid-program (linear slope), and curvature (quadratic slope) for individuals with the same level of commitment to the relationship as their partner.

Table 2 results indicate no statistically significant initial change ($p = .141$) or curvature ($p = .060$) for those with the same level of relationship commitment as their partner. We re-centered relationship commitment to better understand the commitment levels at which change in relationship satisfaction was statistically significant. There was linear ($b = 1.62$, $SE = 0.59$, $p = .006$) and quadratic change ($b = -0.61$, $SE = 0.21$, $p = .004$) in relationship satisfaction for those with lower levels of commitment relative to their partners (at -1 SD; -0.67). The positive linear component indicates an initial increase in relationship satisfaction from baseline to mid-program, and the quadratic change component indicates a concave downward curve (inverted U-shape) across time. In contrast, there was no statistically significant linear ($b = -0.19$, $SE = 0.62$, $p = .762$) or quadratic change ($b = -0.07$, $SE = 0.22$, $p = .729$) in relationship satisfaction for those with higher levels of commitment relative to their partners (at $+1$ SD; 0.67). Predicted relationship satisfaction scores across time are presented in Figure 2.

To understand this finding, we conducted post-hoc tests (using HLM) to examine whether there were differences in predicted levels of relationship satisfaction at post-program and follow-up assessments in individuals with lower levels of commitment relative to their partner. Participants with lower levels of commitment relative to their partners reported relationship satisfaction levels at post-program and follow-up that were not statistically different from baseline ($b = 0.79$, $SE = 0.52$, $\chi^2 = 2.29$, $p = .124$ and $b = -0.66$, $SE = 0.75$, $\chi^2 = 0.77$, $p > .500$, respectively). Thus, although initial gains from baseline to mid-program were not maintained, baseline levels of relationship satisfaction were (i.e., these partners did not show declines in relationship satisfaction commonly seen across the transition to parenthood). To identify the precise range of discrepancy in relationship commitment at which there was statistically significant initial change in relationship satisfaction, we computed Johnson–Neyman (J–N) regions of statistical significance using Miller, Stromeier, and Schwieterman's (2013) methods and tools. We report results of regions rounded to the nearest whole point given that commitment was rated on a 10-point scale with 1-point increments. Individuals with baseline relationship commitment any amount lower than their partner (i.e., 1 point or more) demonstrated an initial increase in

relationship satisfaction. In contrast, individuals with relationship commitment 3 or more points higher than their partner demonstrated an initial decrease in relationship satisfaction.

There were additional statistical increases in relationship satisfaction from mid- to post-program for participants with baseline relationship commitment any amount lower than their partners' and statistical decreases in relationship satisfaction for those with relationship commitment any amount higher than their partners' (i.e., 1 point or more). Finally, there were additional increases from post-program to follow-up for those with baseline relationship commitment 3 or more points lower than their partner, yet statistical decreases for those with equal or higher levels of commitment relative to their partner.

Parenting Satisfaction and Efficacy

As presented in Table 2, there were no statistically significant quadratic effects of time on parenting satisfaction or efficacy. Thus, we tested linear effects of time for these outcomes. We also examined whether baseline levels of parenting efficacy were moderated by gender, based on the preliminary models with covariates described above. Baseline levels of parenting efficacy were statistically higher in women relative to men ($p < .001$). There was a statistically significant linear increase in parenting efficacy across time ($p < .001$); however, there was no statistical change in parenting satisfaction over time ($p = .221$).

Discussion

Given the wide-ranging adverse outcomes of noxious home environments on children and parents (Kitzman et al., 2003), extensive resources (\$1B in the United States alone) have been devoted in the last 15 or so years to prevention programs in hopes of optimizing family relationships—especially for at-risk new parents. This was sensible given the generally supportive evidence of the effectiveness of relationship education for low-income couples (see meta-analyses by Arnold & Beelmann, 2018; Hawkins & Erickson, 2015). Although some evaluations of such programs suggested they are effective in improving new parents' couple relationships (Halford et al., 2010), other studies—including two large-scale evaluations (Wood et al., 2010; Hsueh et al., 2012)—have not found expected preventive effects, and the overall effect size reported in meta-analyses is negligible (e.g., $d = .09$; Arnold & Beelmann, 2018). Clearly, it is important for there to be maximal transparency and reporting of whether such preventive efforts, with high public policy import, are accomplishing their intended goal.

We tested the American version of CCP (Halford et al., 2009), a flexibly delivered skills-based prevention program for new parents. CCP targets both couple and parent-child relationships and is delivered near the birth of a child, a time when couples are especially open to relationship education (Feinberg, 2002; Halford et al., 2003). The present study extends the original Australian studies of CCP by demonstrating that it is feasible to disseminate a flexibly-delivered intervention to low-income couples during this major life transition. Given the difficulties with transportation, work schedules, and overall time poverty of most low-income couples (especially in exurban areas with limited public transportation), reducing logistical barriers to zero makes eminent sense.

Results suggest that CCP may lead to improvements in some key outcomes for low-income, unmarried couples (moderate psychological IPV, parenting efficacy) that are maintained through a 6-month follow-up. Individuals with lower levels of commitment than their partners showed statistically significant initial improvement in relationship satisfaction during the program and maintained their baseline levels of relationship satisfaction through the 6-month follow-up, whereas those with similar or higher levels of commitment showed maintenance of relationship satisfaction. Maintenance of baseline relationship satisfaction during the first 15 months post-partum is certainly encouraging, especially when compared with the within-subject declines from baseline to 6-month follow-up in the present study ($g_s = -.17$ and $-.25$ in men and women, respectively) and the moderate effect sizes of declines in studies with longer follow-ups (i.e., 12–14 months; Mitnick et al., 2009). This is especially noteworthy because of the fragility of low-income, unmarried relationships and the public policy desire to support these families during the perinatal period. However, there was no impact on physical IPV or on severe psychological IPV. Given detrimental impacts to both couple (see Heise & Garcia-Moreno, 2002) and child (Bair-Merritt, 2006) health of exposure to IPV, this is certainly a point of concern.

The positive outcomes should be interpreted with caution. Because there was control group, we can only make educated guesses about how untreated couples would have fared. Certainly, if there were beneficial effects of participation, they could be due to factors beyond true CCP efficaciousness, for example (a) our and their own belief in the efficacy of CCP (i.e., placebo effect) or (b) the nonspecific effects of attention focused on them (i.e., Hawthorne effect). For results of a concurrent randomized, controlled study of CCP with American couples that included a broad range of income groups, see Heyman, Slep, et al. (2019).

Several facets of our sample composition are important to note. Although this was a prevention program, we did not exclude couples who were unhappy in their relationship; over one-quarter of mothers in the sample reported clinically significant relationship distress at baseline. Additionally, we did not require couples to be first time parents. Couples reported a mean of 1.9 children ($SD = 1.3$) in the home (including their new baby). Finally, although during the screening process we excluded couples with IPV causing injury or fear, there was a high prevalence of physical IPV reported at baseline in the sample (41.7% moderate, 25.5% severe). IPV in couples entering prevention programs often goes undetected because it is often not assessed; these rates underscore the need to assess IPV along with the more commonly identified demographic and socioeconomic risk factors when working with couples.

Limitations

As mentioned previously, the primary limitation of the present study is the uncontrolled design. Without randomization, it is unknown whether changes in outcome over time are due to the intervention or to natural change that occurs following the birth of a child (e.g., Mitnick et al., 2009). Although published randomized trials of CCP have documented within-person declines in relationship satisfaction for couples who did not receive CCP (see Table S1 in Heyman, Baucom, et al., 2019), only one (pilot) study has been published that

focused specifically on low-income couples (Baucom et al., 2018). Further investigation of a wider range of relationship and parenting outcomes in a larger randomized trial of low-income couples is needed. Second, we recruited a racially and ethnically diverse sample of couples from the maternity unit of a large university hospital that served the vast majority of low-income couples in our exurban county. Thus, our results may differ substantially from studies conducted in urban settings, with different racial/ethnic make-ups, or that use a different operationalization of low-income (e.g., ours used a cost-of-living sensitive self-sufficiency standard, not the national poverty threshold). Third, a little over 1 in 5 eligible couples began the intervention. Of those that began the program, just under half completed all sessions. Whereas nearly two-thirds completed at least half of the sessions (the threshold for being considered “completers”), the majority of enrolled participants did not receive the full intervention under evaluation.

It appears as if recruiting in maternity units was a double-edged sword. On the one hand, according to our obstetrics partners, this was the only time that we would likely be able to reach these couples. On the other hand, we were asking couples to participate in a voluntary program at one of the most time-starved periods of life; reducing logistical barriers to zero did not reduce the time barriers of the program itself. In contrast, in Australia, CCP was incorporated into the universally-delivered pre- and post-natal home visitation program for parents of newborns. Almost all of the CCP content was delivered in a weekend workshop prior to delivery of the first child. Petch et al. (2012) reported that over half of the eligible couples began the intervention and 80% of couples who started CCP finished it. Although our two-thirds completion rate is similar to those of published studies delivering prevention programs to low-socioeconomic status couples or couples transitioning to parenthood in the United States (see Baucom et al., 2018, for a review), it is possible our rates of dropout were related to the timing of the intervention. Other prevention programs have reported greater attendance at prenatal versus postnatal sessions (e.g., Feinberg et al., 2009). Although not possible in our data to disentangle differences surrounding program-delivery infrastructure, timing, and couple circumstances, the attendance challenges of our sample highlight the multiple ecological and contextual challenges facing both low-income, unmarried new parents and those offering interventions designed to assist these families. Flexible delivery may help retain couples but is not a panacea for helping postnatal couples receive an adequate dose of prevention.

Implications for Practice and Policy

As noted earlier, the initial policy decisions to begin initiatives for bolstering the relationships of low-income couples were made before established science could soundly recommend these programs; despite subsequent evaluations showing lack of impact in target populations (e.g., Lundquist et al., 2014; Wood et al., 2010), policymakers have failed to change the continued funding of the initiatives (e.g., Johnson, 2014). Although recent meta-analytic studies have found positive treatment effects of prevention programs delivered to low-income couples, the overall between-group effect sizes are quite small (e.g., $d = .06$ on self-report measures of relationship outcomes; Hawkins & Erickson, 2015). Importantly, Hawkins and Erickson (2015) did not find statistically significant treatment effects in studies with samples similar to those targeted by the initiative that funded the present study (i.e.,

unmarried couples, couples in a relationship of shorter duration, majority of couples below the federal poverty line). Thus, the implementation of traditional relationship education programs with less advantaged couples should be carefully considered.

Compared with programs delivered only via in-person groups, CCP's flexible service delivery model allows low-income couples to participate in perinatal prevention by reducing the impediments of transportation challenges, conflicting work schedules, and overall time poverty). Considering our context and results and those of CCP trials in Australia, practitioners interested in using CCP with low-income couples would likely maximize the impact by (a) focusing on pregnant, first-time parents, as was done in the original Australian RCTs; (b) integrating CCP within post-natal healthcare; and/or (c) assuming that a considerable minority of couples will avail themselves of only up to two sessions, and thus practitioners should front-load content, making other content optional or just-in-time (with optional coaching support).

Taken as a whole, the results show some encouraging signs but plenty of room for improvement. As detailed in Heyman, Baucom et al., (2019), given the modest (at best) results of relationship education programs for low-income, unmarried new parents, developers should consider broadening their palettes from the skills-based programs (that do not have enough time or repetition necessary to truly develop skills) with roots in 1970s communication-oriented interventions. For example, preventionists must grapple with the incompatibility of lengthy, multi-faceted programs for time-impovertised couples who are not seeking the programs in the first place. Very brief interventions followed by just-in-time, on-demand extended content may be the best way to engage and promote change in couples with a newborn. Glasgow et al. (2014) discussed "minimal intervention needed to produce change" (MINC), which they defined as the minimal or lowest level of intervention intensity, expertise, and resources needed to achieve a clinically significant improvement in a specified outcome for a particular target population under a particular set of conditions, when delivered by a specified type of staff or interactive modality. (p. 26).

Glasgow and colleagues illustrated MINC in the context of Type 2 diabetes self-management interventions. In their work, a computer-assisted intervention consisting of brief assessment and feedback with preventive care recommendations, originally designed as an attention control condition, produced improvements in health behavior and adjustment (Glasgow et al., 2014). A promising potential MINC in the content area of the present study is the Relationship Checkup (RC), a brief motivational assessment and feedback intervention (Cordova et al., 2014). A recent open trial of the RC in a large sample of low-income, underserved couples demonstrated that the 90-minute intervention had clinically significant (albeit small) effects on outcomes of interest in the present study (i.e., relationship satisfaction, IPV), with large effects on relationship satisfaction for couples who were in distressed relationships at baseline (Gordon et al., 2019). Over half of the couples in the RC open trial had a child under 18 years-of-age living in the home, providing a different context for the delivery of the intervention than our sample of couples with a newborn. Nonetheless, it is possible RC or a similar intervention is the MINC for low-income couples with a newborn, and that those couples demonstrating a need for additional intervention could be offered CCP. This would extend CCP's flexible approach to its natural ends. In addition,

non-psychoeducational elements—such as gamification (e.g., Johnson et al., 2016), easy computerized tasks to reduce angry responses (e.g., Stoddard et al., 2016), or even watching couple-themed movies (Rogge, Cobb, Lawrence, Johnson, & Bradbury, 2013)—could enliven preventative offerings for perinatal couples.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Acknowledgments

This work was supported by a grant from the Administration for Children and Families, U.S. Department of Health and Human Services (90FE013101) and the National Institute of Diabetes and Digestive and Kidney Diseases at the National Institutes of Health (grant K23DK115820). The content is solely the responsibility of the authors and does not necessarily represent the official views of the U.S. Department of Health and Human Services or the National Institutes of Health.

References

- Agrawal A, Ickovics J, Lewis JB, Magriples U, & Kershaw TS (2014). Postpartum intimate partner violence and health risks among young mothers in the United States: A prospective study. *Maternal and Child Health Journal*, 18, 1985–1992. doi:10.1007/s10995-014-1444-9 [PubMed: 24562504]
- Aguinis H, Gottfredson RK, & Culpepper SA (2013). Best-practice recommendations for estimating cross-level interaction effects using multilevel modeling. *Journal of Management*, 39, 1490–1528. doi:10.1177/0149206313478188
- Arnold LS, & Beelmann A (2018). The effects of relationship education in low-income couples: A meta-analysis of randomized-controlled evaluation studies. *Family Relations*, 26, 1–17. doi:10.1111/fare.12325
- Baucom KJW, Chen XS, Perry N, Revolorio KY, Reina A, & Christensen A (2018). Recruitment and retention of low-SES ethnic minority couples in intervention research at the transition to parenthood. *Family Process*, 57, 308–323. doi:10.1111/famp.12287 [PubMed: 28328086]
- Beach SRH, & Broderick JE (1982). Commitment: A variable in women's response to marital therapy. *American Journal of Family Therapy*, 11, 16–24. doi:10.1080/01926188308250143
- Broussard CA (2010). Research regarding low-income single mothers' mental and physical health: A decade in review. *Journal of Poverty*, 14, 443–451. doi:10.1080/10875549.2010.518003
- Charles P, & Perreira KM (2007). Intimate partner violence during pregnancy and 1-year post-partum. *Journal of Family Violence*, 22, 609–619. doi:10.1007/s10896-007-9112-0
- Cordova JV, Fleming CJE, Morrill MI, Hawrilenko M, Sollenberger JW ... Wachs K (2014). The Marriage Checkup: A randomized controlled trial of annual relationship health checkups. *Journal of Consulting & Clinical Psychology*, 82, 592–604. doi:10.1037/a0037097 [PubMed: 24932565]
- Cowan PA, & Cowan CP (2014). Controversies in couple relationship education (CRE): Overlooked evidence and implications for research and policy. *Psychology, Public Policy, and Law*, 20, 361–383. doi:10.1037/law0000025
- Dixon LJ, Gordon KC, Frousakis NN, & Schumm JA (2012). A study of expectations and the marital quality of participants of a marital enrichment seminar. *Family Relations*, 61, 75–89. doi:10.1111/j.1741-3729.2011.00681.x
- Feinberg ME (2002). Coparenting and the transition to parenthood: A framework for prevention. *Clinical Child & Family Psychology Review*, 5, 173–195. doi:10.1023/A:1019695015110 [PubMed: 12240706]
- Feinberg ME, Kan ML, & Goslin MC (2009). Enhancing coparenting, parenting, and child self-regulation: Effects of Family Foundations 1 year after birth. *Journal of Family Psychology*, 22, 253–263. doi:10.1007/s11121-009-0130-4

- Funk JL, & Rogge RD (2007). Testing the ruler with item response theory: Increasing precision of measurement for relationship satisfaction with the Couples Satisfaction Index. *Journal of Family Psychology*, 21, 572–583. doi:10.1037/0893-3200.21.4.572 [PubMed: 18179329]
- Glasgow RE, Fisher L, Strycker LA, Hessler D, Toobert DJ ... Jacobs T (2014). Minimal intervention needed for change: Definition, use, and value for improving health and health research. *Translational Behavioral Medicine*, 4, 26–33. doi:10.1007/s13142-013-0232-1 [PubMed: 24653774]
- Giele JZ (2013). *Contemporary family perspectives: Family policy and the American safety net*. Thousand Oaks, CA: Sage.
- Gordon KC, Cordova JV, Roberson PNE, Miller M, Gray T ... Martin K (2019). An implementation study of relationship checkups as home visitations for low-income at-risk couples. *Family Process*, 58, 247–265. doi:10.1111/famp.12396 [PubMed: 30311218]
- Graefe DR, & Lichter DT (2007). When unwed mothers marry. *Journal of Family Issues*, 28, 595–622. doi:10.1177/0192513X06295200
- Halford WK, Sanders MR, & Behrens BC (1994). Self-regulation in behavioral couples' therapy. *Behavior Therapy*, 25, 431–452. doi:10.1016/S0005-7894(05)80156-X
- Halford WK, Heyman RE, Slep AMS, Petch J, & Creedy DK (2009). *Couple CARE for Parents of Newborns*. Unpublished workbook. New York, NY: New York University.
- Halford WK, Markman HJ, Kline GH, & Stanley SM (2003). Best practice in couple relationship education. *Journal of Marital and Family Therapy*, 29, 385–406. doi:10.1111/j.1752-0606.2003.tb01214.x [PubMed: 12870411]
- Halford WK, Petch J, & Creedy DK (2010). Promoting a positive transition to parenthood: A randomized clinical trial of couple relationship education. *Prevention Science*, 11, 89–100. doi:10.1007/s1121-009-0152-y [PubMed: 19842037]
- Halford WK, Petch J, & Creedy DK (2015). *Clinical guide to helping new parents: The Couple CARE for Parents Program*. New York, NY: Springer.
- Hawkins AJ, & Erickson SE (2015). Is couple and relationship education effective for lower income participants? A meta-analytic study. *Journal of Family Psychology*, 29, 59–68. doi:10.1037/fam0000045.supp [PubMed: 25419911]
- Heyman RE, Baucom KJW, Slep AMS, Mitnick DM, & Lorber MF (2019). A research program testing the effectiveness of a preventive intervention for couples with a newborn. *Family Process*, 58, 669–684. doi:10.1111/famp.12428 [PubMed: 30811594]
- Heyman RE, Sayers SL, & Bellack AS (1994). Global marital satisfaction versus marital adjustment: An empirical comparison of three measures. *Journal of Family Psychology*, 8, 432–446. doi:10.1037/0893-3200.8.4.432
- Heyman RE, Slep AMS, Lorber MF, Mitnick DM, Xu S, Baucom KJW ... Nolon P (2019). A randomized, controlled trial of the impact of the Couple CARE for Parents of Newborns Program on the prevention of intimate partner violence and relationship problems. *Prevention Science*, 20, 620–631. doi:10.1007/s1121-018-0961-y [PubMed: 30535623]
- Heyman RE, Snarr JD, Slep AMS, Baucom KJW & Linkh DJ (in press). Self-reporting DSM-5/ICD-11 Clinically Significant Intimate Partner Violence and Child Abuse: Convergent and response process validity. *Journal of Family Psychology*. doi:10.1037/fam0000560
- Heise L, & Garcia-Moreno C (2002). Violence by intimate partners In Krug EG, Dahlberg LL, Mercy JA, Zwi AB, & Lozano R (Eds.), *World report on violence and health* (pp. 87–121). Geneva, Switzerland: World Health Organization.
- Johnson D, Deterding S, Kuhn K, Staneva A, Stoyanov S, & Hides L (2016). Gamification for health and wellbeing: A systematic review of the literature. *Internet Interventions*, 6, 89–106. doi:10.1016/j.invent.2016.10.002 [PubMed: 30135818]
- Johnson MD (2012). Healthy marriage initiatives: On the need for empiricism in policy implementation. *American Psychologist*, 67, 296–308. doi:10.1037/a0027743
- Johnston C, & Mash EJ (1989). A measure of parenting satisfaction and efficacy. *Journal of Clinical Child Psychology*, 18, 167–175. doi:10.1207/s15374424jccp1802_8

- Karney BR, & Bradbury TN (2005). Contextual influences on marriage: Implications for policy and intervention. *Current Directions in Psychological Science*, 14, 171–174. doi:10.1111/j.0963-7214.2005.00358.x
- Katz KS, El-Mohandes A, Johnson DM, Jarrett M, Rose A, & Cober M (2001). Retention of low income mothers in a parenting intervention study. *Journal of Community Health*, 26, 203–218. doi:10.1023/A:1010373113060 [PubMed: 11478566]
- Miller JW, Stromeyer WR, & Schwieterman MA (2013). Extensions of the Johnson–Neyman technique to linear models with curvilinear effects: Derivations and analytical tools. *Multivariate Behavioral Research*, 48, 267–300. doi:10.1080/00273171.2013.763567 [PubMed: 26741727]
- Mitnick DM, Heyman RE, & Slep AMS (2009). Changes in relationship satisfaction across the transition to parenthood: A meta-analysis. *Journal of Family Psychology*, 23, 848–852. doi:10.1037/a0017004 [PubMed: 20001143]
- Moore Q, Wood RG, Clarkwest A, Killewald A, & Monahan S (2012). *The long-term effects of Building Strong Families: A relationship skills education program for unmarried parents (technical supplement)*. Washington, DC: Mathematica.
- Norton R (1983). Measuring marital quality: A critical look at the dependent variable. *Journal of Marriage and the Family*, 45, 141–151. doi:10.2307/351302
- Pinquart M, & Teubert D (2010). A meta-analytic study of couple interventions during the transition to parenthood. *Family Relations*, 59, 221–231. doi:10.1111/j.1741-3729.2010.00597.x
- Radey M (2017). Postnatal college trajectories: When and under what circumstances do mothers enroll? *Teachers College Record*, 119, 1–28.
- Raudenbush SW, Bryk AS, Cheong YF, Congdon RT, & du Toit M (2011). *HLM 7: Hierarchical Linear and Nonlinear Modeling*. Lincolnwood, IL: Scientific Software International.
- Rogge RD, Cobb RJ, Lawrence E, Johnson MD, & Bradbury TN (2013). Is skills training necessary for the primary prevention of marital distress and dissolution? A 3-year experimental study of three interventions. *Journal of Consulting and Clinical Psychology*, 81, 949–961. doi:10.1037/a0034209 [PubMed: 24060193]
- Roy AL, & Raver CC (2014). Are all risks equal? Early experiences of poverty-related risk and children's functioning. *Journal of Family Psychology*, 28, 391–400. doi:10.1037/a0036683 [PubMed: 24749652]
- Scharte M, & Bolte G (2012). Increased health risks of children with single mothers: The impact of socio-economic and environmental factors. *European Journal of Public Health*, 23, 469–475. doi:10.1093/eurpub/cks062 [PubMed: 22683774]
- Senturia YD, Mortimer KM, Baker D, Gergen P, Mitchell H, Joseph C, & Wedner HJ (1998). Successful techniques for retention of study participants in an inner-city population. *Controlled Clinical Trials*, 19, 544–554. doi:10.1016/S0197-2456(98)00032-4 [PubMed: 9875834]
- Shortt JW, Capaldi DM, Kim HK, & Owen LD (2006). Relationship separation for young, at-risk couples: Prediction from dyadic aggression. *Journal of Family Psychology*, 20, 624–631. doi:10.1037/0893-3200.20.4.624 [PubMed: 17176197]
- Slep AMS, Heyman RE, & Foran HM (2015). Child maltreatment in DSM-5 and ICD-11. *Family Process*, 54, 17–32. doi:10.1111/famp.12131 [PubMed: 25615555]
- Sobolewski JM, & Amato PR (2005). Economic hardship in the family of origin and children's psychological well-being in adulthood. *Journal of Marriage and Family*, 67, 141–156. doi:10.1111/j.0022-2445.2005.00011.x
- Straus MA, Hamby SL, Boney-McCoy S, & Sugarman DB (1996). The revised Conflict Tactics Scales (CTS2): Development and preliminary psychometric data. *Journal of Family Issues*, 17, 283–316. doi:10.1177/019251396017003001
- Sullivan KT, Pasch LA, Cornelius T, & Cirigliano E (2004). Predicting participation in premarital prevention programs: The health belief model and social norms. *Family Process*, 43, 175–193. doi:10.1111/j.1545-5300.2004.04302004.x [PubMed: 15603502]
- Thibaut N, & Kelley H (1959). *The social psychology of groups*. New York, NY: Wiley.
- Wilcox WB, Doherty WJ, Fisher H, Galston WA, Glenn ND, & Gottman JM ... Wallerstein J (2005). *Why marriage matters* (2nd ed.). New York, NY: Institute for American Values.

Wood RG, McConnell S, Moore Q, Clarkwest A, & Hsueh J (2010). Strengthening unmarried parents' relationships: The early impacts of building strong families. Washington, DC: Mathematica Policy Research.

Author Manuscript

Author Manuscript

Author Manuscript

Author Manuscript

Figure 1.
Participant flow diagram
Notes. ^a Heyman et al., 2019

Figure 2.
Relationship satisfaction as a function of relationship commitment at baseline, mid- and post-program, and 6-month follow-up

Table 1

Descriptive Statistics and Effect Sizes for Outcomes over Time

	Baseline			Mid			Post			Follow-up		
	<i>n</i>	<i>M (SD)</i>		<i>n</i>	<i>M (SD)</i>		<i>n</i>	<i>M (SD)</i>		<i>n</i>	<i>M (SD)</i>	<i>g</i>
Moderate psychological IPV												
Male-to-female	310	1.98 (1.48)	255	1.91 (1.47)	0.02	171	1.70 (1.45)	0.07	122	1.77 (1.53)	0.06	
Female-to-male	310	2.07 (1.50)	255	2.04 (1.50)	-0.01	171	1.78 (1.55)	-0.14	122	1.75 (1.53)	-0.13	
Severe psychological IPV												
Male-to-Female	310	0.47 (0.85)	255	0.46 (0.91)	-0.02	171	0.37 (0.75)	-0.10	122	0.52 (1.01)	0.06	
Female-to-male	310	0.55 (0.90)	255	0.52 (0.93)	-0.02	171	0.44 (0.88)	-0.17	122	0.54 (0.94)	0.01	
Moderate physical IPV												
Male-to-female	310	0.36 (0.73)	255	0.40 (0.85)	0.06	171	0.33 (0.75)	-0.04	122	0.39 (0.87)	0.01	
Female-to-male	310	0.50 (0.97)	255	0.43 (0.89)	-0.05	171	0.42 (0.89)	-0.04	122	0.44 (0.90)	-0.04	
Severe physical IPV												
Male-to-female	310	0.19 (0.51)	255	0.28 (0.63)	0.12	171	0.15 (0.43)	-0.11	122	0.25 (0.57)	0.08	
Female-to-male	310	0.21 (0.54)	255	0.24 (0.61)	0.12	171	0.18 (0.48)	-0.06	122	0.20 (0.51)	0.07	
Relationship satisfaction												
Men	269	30.73 (7.74)	244	31.12 (7.52)	0.08	144	31.56 (7.85)	0.07	99	30.45 (8.26)	-0.17	
Women	296	29.72 (8.26)	248	30.06 (8.51)	-0.01	162	29.68 (8.43)	-0.07	117	28.10 (9.42)	-0.25	
Parenting satisfaction												
Men	273	43.03 (7.34)	242	42.67 (7.16)	-0.06	148	43.64 (6.88)	-0.02	104	43.27 (7.98)	-0.07	
Women	308	42.95 (6.84)	249	43.01 (7.40)	0.01	162	43.77 (7.50)	0.12	118	43.85 (6.63)	0.11	
Parenting efficacy												
Men	272	37.65 (6.23)	242	38.15 (6.38)	0.07	148	38.97 (6.65)	0.23	104	37.71 (6.71)	-0.04	
Women	309	38.80 (5.91)	249	39.58 (6.42)	0.09	162	40.55 (6.25)	0.38	119	40.48 (5.93)	0.36	

Note. Descriptive statistics are based on raw data (prior to winsorizing IPV scales) and include all collected data. IPV = intimate partner violence. *g* = within-group effect size relative to Baseline (Hedge's *g* for dependent groups), calculated using data from participants with complete data at both baseline and the respective time point (indicated by *n*).

Table 2

Trajectories of Change in Outcomes over Time

	<i>n</i>	<i>b</i>	<i>SE</i>	<i>p</i>	<i>SC</i>
Moderate psychological IPV					
Intercept	373	2.06	0.08	< .001	
Gender		0.11	0.04	.008	0.04
Time		−0.09	0.03	.008	−0.07
Gender		−0.04	0.02	.087	−0.03
Severe psychological IPV					
Intercept	306	0.44	0.03	< .001	
Gender		0.05	0.02	.016	0.04
Commitment		−0.04	0.02	.073	−0.04
Time		−0.03	0.02	.070	−0.05
Moderate physical IPV					
Intercept	306	0.37	0.03	< .001	
Gender		0.05	0.02	.002	0.04
Commitment		−0.05	0.02	.008	−0.05
Time		−0.02	0.02	.190	−0.03
Severe physical IPV					
Intercept	373	0.18	0.02	< .001	
Time		0.00	0.01	.797	−0.01
Relationship satisfaction					
Intercept	306	30.02	0.43	< .001	
Commitment		0.81	0.43	.060	0.07
Time		0.72	0.49	.141	0.10
Commitment		−1.35	0.53	.012	−0.20
Time ²		−0.34	0.18	.060	−0.15
Commitment		0.40	0.17	.018	0.16
Parenting satisfaction					
Intercept	373	42.96	0.31	< .001	
Time		0.19	0.16	.221	0.03
Parenting efficacy					
Intercept	373	38.18	0.27	< .001	
Gender		1.61	0.33	< .001	0.13
Time		0.52	0.13	< .001	0.09

Note. *n* = number of couples with some data included. Lower *n*s for some models are due to missing data on relationship commitment (see Measures). *SC* = standardized regression coefficient (calculated as $b \times SD_{\text{predictor}} / SD_{\text{outcome}}$), which represents the predicted change in outcome (in *SD*s) given a 1 *SD* increase in predictor. Coding of Gender was −0.5 (*male*), 0.5 (*female*). Coding of Time was 0 (*Pre*), 1 (*Mid*), 2 (*Post*), 3 (*6-month follow-up*). Relationship was group (couple) mean centered. Post hoc results are reported in Results text.