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Recruitment and Retention of Low-SES Ethnic Minority Couples in Intervention Research at the Transition to Parenthood

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Abstract

Low-SES couples have limited resources to manage the chronic and acute stressors with which they are disproportionately faced. Whereas these couples are at greater risk for negative individual and relationship outcomes, evaluations of the impact of couple relationship education (CRE) in low-SES couples have been plagued by methodological problems, most notably challenges associated with recruitment and retention. We review the literature on challenges couples face associated with low SES, as well as on recruitment, retention, and CRE in low-SES, ethnic minority populations. We illustrate some of these challenges in a case study of CRE for low-SES couples transitioning to parenthood. In this pilot study, 21 couples were recruited from a community health clinic and randomized to either an experimental treatment condition (EXP; $N = 11$) or a treatment-as-usual control condition (TAU; $N = 10$). This study sought to mitigate documented challenges with recruitment and retention: we leveraged community partnerships, attempted to build and maintain strong relationships with study participants, provided incentives for assessments as well as intervention meetings, and attempted to reduce potential barriers to enrollment and retention. Nonetheless, we had low rates of recruitment and retention. We integrate these findings and experiences with our review of previous work in this area. We make

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recommendations for future CRE research and practice that have potential implications for public policy in this area.

Keywords

couple relationship; prevention; socioeconomic status; ethnic minority; recruitment; retention

Couples' socioeconomic context determines the availability of resources to cope with stressful life events (Story & Bradbury, 2004). Despite the unique challenges with which low-SES ethnic minority couples are faced, relationship research has been largely unsuccessful at recruiting representative samples (Karney, Kreitz, & Sweeney, 2004). Furthermore, low-SES and ethnic minority participants successfully recruited into longitudinal relationship studies are more likely to drop out (Karney & Bradbury, 1995). In the current paper, we describe basic research findings from low-SES and ethnic minority samples that point to the potential utility of intervention, as well as translational work in low-SES populations. We then review challenges with, and recommendations for, successful recruitment and retention of ethnically diverse samples. Finally, we illustrate many of these challenges with data from a pilot preventive intervention study with low-SES ethnic minority couples transitioning to parenthood, and place the results in the context of previous work in this area.

Stress Associated with Low SES and Ethnic Minority Status

Low-SES couples are at disproportionate risk for a number of negative outcomes. Stress levels are higher in low-income households, and the discrepancy in stress levels between lower and higher-income households is growing (APA, 2015). Lower weekly wages are associated with poorer maternal physical and mental health (Coley & Lombardi, 2014). One mechanism for these effects is the influence of low SES on couples' relationship functioning. Low SES may impose significant social challenges that function as external stressors on the relationship, such as reduced access to resources (e.g., transportation), neighborhood disadvantage (Berkul-Silberman, Dreyer, Huberman, Klass, & Mendelsohn, 2010), and a tendency for lower-earning shift work (Perry-Jenkins, Goldberg, Pierce, & Sayer, 2007). Consistent with the notion of SES as an external stressor (e.g., Story & Bradbury, 2004), SES moderates associations between stressful life events, mental health, and relationship satisfaction, with stressful events and mental health concerns explaining greater variance in relationship satisfaction for low-income couples (Maisel & Karney, 2012). Although low-SES couples are generally at a disadvantage relative to their middle- and upper-SES counterparts, these effects appear to be even more pronounced for ethnic minority couples. For example, studies have demonstrated poorer mental health in low-income Hispanic compared with low-income White or Black mothers (Coley & Lombardi, 2014), and low-income Black couples have smaller social support networks relative to low-income White couples (Jackson, Kennedy, Bradbury, & Karney, 2014). Thus, stress is prominent in the lives of low-SES couples, and may be heightened in ethnic minority couples.

Low-SES couples' experience of stress is exacerbated at certain life transitions, such as the transition to parenthood (TTP). For example, low-SES parents have reduced access to sources of parenting information compared to higher-earning parents (Berkulke-Silberman et al., 2010). Research has linked SES to poorer outcomes in the early years of parenthood, with lower income parents being more likely to use harsh parenting styles (Callahan, Scaramella, Laird, & Sohr-Preston, 2011) and to be more permissive of child behavior problems (Bluestone & Tamis-LeMonda, 1999). Multiple theories (e.g., family stress, investment model) have attempted to explain the links between SES and relationship functioning. In their review of the literature on associations between SES and family outcomes, Conger, Conger, and Martin (2010) note that these associations, and the mechanisms underlying them, are particularly complex and likely intertwined. Low-SES couples may be especially challenged in their family relationships if stressors are greater in number and more embedded in an interactive system between family processes and SES. Acknowledging the various challenges these couples face in maintaining their well-being in the face of significant adversity, recent research and practice efforts have been devoted to interventions for low-SES ethnic minority couples. Work in this area is encouraging: a recent meta-analysis demonstrated small positive between-group effects, as well as moderate positive within-group (i.e., pre-post) effects, of couple relationship education (CRE) on self-report measures of relationship satisfaction and communication (Hawkins & Erickson, 2015).

Despite these encouraging findings, there are a number of methodological problems with CRE studies that have seriously limited the research and policy implications of this work in low-SES populations (Halford & Bodenmann, 2013). One particularly salient example is the Building Strong Families (BSF) study, a large-scale federally-funded program that aimed to improve relationship quality and stability by widely disseminating CRE and additional support to low-SES couples around the time of childbirth. The results of this study were sobering, with virtually no effects of the intervention in the full sample (Wood, McConnell, Moore, Clarkwest, & Hsueh, 2010). The BSF report led to a controversy in the field given the high costs associated with the initiative (see Cowan & Cowan, 2014, for a review). However, the BSF study faced particular challenges engaging couples in CRE; nearly half of the participants *did not attend any of the CRE intervention* (Dion, Avellar, & Clary, 2010).

Well-documented challenges with recruitment and retention of low-SES participants (Yancey, Ortega, & Kumanyika, 2006) have led to a number of recommendations for research with traditionally difficult-to-reach populations. First, it is recommended that researchers develop community partnerships. Specifically, recruitment should occur at places where potential participants already feel comfortable (e.g., community clinics) and involve community members (e.g., clinic staff members) (Harachi et al., 1997; Ooms & Wilson, 2004; Yancey et al., 2006). Second, it is recommended that researchers reduce potential time, transportation, and childcare barriers to participation. Services should be offered at a convenient time and place for participants (e.g., their home), and transportation and childcare should be provided (Ooms & Wilson, 2004; Yancey et al., 2006). Third, it is recommended that researchers maintain contact with participants over the course of a study with the use of reminder calls, letters, birthday cards, and postcards has also been found to increase retention rates (Harachi et al., 1997; Yancey et al., 2006). Fourth, it is recommended

that timely incentives (e.g., monetary compensation, food, raffle tickets) be provided (Ooms & Wilson, 2004; Yancey et al., 2006). Fifth, it is recommended that bilingual and bicultural staff be available for recruitment, and that measures be translated and back-translated in participants' preferred language (Miranda et al., 1996) in order to reduce language barriers. Finally, it is particularly important that study staff demonstrate strong clinical skills including genuineness, caring, respect, acceptance, and recognition of strengths, so as to develop warm relationships with participants (Ooms & Wilson, 2004; Miranda et al., 1996; Yancey et al., 2006). Although these recommendations are for research studies in particular, most of these suggestions can be applied to the practice of CRE outside of a research context.

Review of Recruitment and Retention in RCTs of CRE

In order to better understand the degree to which recommended recruitment and retention methods have been implemented in previous CRE work, as well as outcomes of these methods, we conducted a review of randomized trials of CRE for low-SES couples and CRE at the TTP. Details of our methods and the extracted data are presented in Appendix S1.

There were two key reporting issues across the studies we reviewed that limited our ability to extract critical data from these trials. The first issue was related to recruitment and enrollment. Few studies reported the total number of couples approached or the number of ineligible couples broken down by criterion. Further, methods of recruitment and their relative success were not reported in detail, despite the documented impact of recruitment method on both enrollment and subsequent engagement in CRE (e.g., Carlson et al., 2014). The second issue was related to engagement in CRE (i.e., receipt of the intervention), which is distinct from – but often overlapping with – retention in the study (i.e., provision of assessment data). Many studies had commendable retention rates that allowed for intent-to-treat analyses, but engagement in CRE was variable and inconsistently reported. Although there are published reporting guidelines for randomized trials in particular (i.e., Consolidated Standards of Reporting Trials, CONSORT; Altman et al., 2001) and empirical papers more generally (Journal Article Reporting Standards, JARS; APA, 2008), in the context of multi-session protocols common in CRE these minimum standards are insufficient. For example, the flow diagram template of (potential) participants through the stages of an RCT begins with assessment for eligibility rather than contact at recruitment, and guidelines for treatment allocation reporting do not include information on dose (Altman et al., 2001). For the field to improve in the recruitment, retention, and engagement of difficult-to-reach couples, more detailed reporting is imperative. This lack of data also limits what conclusions can be drawn by CRE programs about which interventions are most effective and successful at service delivery to guide their own practice.

Table S1 summarizes the six trials we identified of CRE for low-SES couples. Aside from a trial of CRE for U.S. Army couples, studies included predominantly ethnic minority samples: less than 35% of participants identified as White, non-Hispanic. These studies were clearly designed with careful attention to factors related to recruitment and retention. Researchers reported the use of at least half of the recommended recruitment and retention strategies. Three trials, including the large-scale BSF and Supporting Health Marriage

(SHM) studies, reported use of all of the recommended strategies. It is likely the other trials used strategies that were not explicitly reported due to space constraints. Based on the number of participants enrolled, randomized, and retained through the post-intervention assessment, the weighted average retention rate was approximately 79% (M_{CRE} 79.9%, $M_{control}$ 78.8%). Engagement rates were generally low. Across studies where engagement was reported, approximately half of CRE couples completed most or all of the intervention. One exception was the BSF study, in which only 17% of couples in the CRE condition completed more than 80% of the CRE workshops. There was mixed evidence on factors related to retention. Some trials did not find differences in baseline demographic characteristics or distress levels between couples who dropped out and those who were retained. However, others found that couples who dropped out were lower in SES and more distressed at baseline. Thus, it is possible that the participants at greatest risk do not remain in studies, but the data thus far are inconclusive.

Consistent with critiques of relationship research more broadly (e.g., Karney et al., 2004), the overwhelming majority of participants in the studies reviewed were White and of middle or high SES. We did not identify any trials of CRE at the TTP with low-SES ethnic minority samples. All participants in these trials were recruited during pregnancy, and the majority of CRE in these studies occurred prenatally. The weighted average retention rate was approximately 86% (M_{CRE} = 85.1%, $M_{control}$ = 86.8%). Relative to studies with low-SES couples, engagement rates were higher in studies at the TTP; in most of the studies that reported these data, more than 90% of CRE couples participated in some portion of the intervention. Studies that investigated factors related to retention did not find significant differences in demographics (though limited by restricted ranges) or baseline distress. However, two studies found lower education levels in CRE noncompleters compared to completers. The most consistently reported reasons for noncompletion were lack of time and perceived lack of need.

Case Study

We illustrate challenges with recruitment and retention in the context of a study of CRE at the TTP for low-SES ethnic minority couples. The TTP is a time during which couples are open to intervention (Petch, Halford, Creedy, & Gamble, 2012). However, given the stress associated with low SES and ethnic minority status, recruitment and retention in CRE research during the TTP may be particularly challenging with this population. We implemented aforementioned recruitment and retention recommendations, and our study design was supported by meta-analytic findings: it included prenatal and postnatal components, at least 6 sessions instructed by professionals, couple and parenting elements, examination of immediate and long-term effects, and measurement of potential moderators (Pinquart & Teubert, 2010). We hypothesized that partners in the control condition would evidence declines in relationship satisfaction and increases in individual distress across the TTP that were larger in magnitude compared to partners in the intervention condition.

Method

Participants

Participants were 21 heterosexual couples recruited from a Comprehensive Perinatal Services Program (CPSP) in Los Angeles County. This practice is part of a state-funded voluntary program designed to improve the health of low-income pregnant women and infants in California (Korenbrodt, Gill, Clayson, & Patterson, 1995). Women were eligible for services based on an annual household income of less than 200% of the federal poverty line (FPL). The average annual household income reported by couples in the sample was \$15,943 ($SD = \$13,379$). Ten couples (47.6%) reported household incomes below the FPL (i.e., household income less than \$15,139 for a family of two in 2011 when couples were enrolled; U.S. Census Bureau), and 19 couples (90.5%) reported household incomes below 200% of the FPL. The mean age of participants was 24.33 years ($SD = 4.37$) for women, and 27 years ($SD = 6.53$) for men. Thirteen couples were cohabiting (61.9%) and eight were married (38.1%). Nearly half of the women and men (42.9%) had some college education. The rest of the sample reported lower levels of education. Participants' ethnicities were primarily Latina/o (61.9% women, 61.9% men). The remaining participants were African American (14.3% women, 14.3% men), Asian/Pacific Islander (14.3% women, 9.5% men), and Caucasian (9.5% women, 9.5% men). One man did not provide ethnicity data. Four couples (19.0%) participated in all aspects of the study in Spanish.

Couples were eligible for the study if both partners were 18 years or older, fluent in English or Spanish, living together most of the time, expecting their first child together (male partners could have children from other relationships but female partners could not have previous full-term pregnancies), and in the first 32 weeks of the women's pregnancy. Couples were excluded from the study if they were in couple therapy; had partners with active psychosis, suicidal ideation, or homicidal ideation; reported moderate to severe levels of intimate partner violence; or were unable to consent. Couples who were not interested or were ineligible for the study were offered a list of local resources (e.g., parenting, mental health, domestic violence).

Recruitment and Retention Plan

We took a number of steps consistent with aforementioned recommendations for recruitment and retention. Consistent with recommendations that researchers develop strong community partnerships, we worked closely and collaboratively with providers at the CPSP. Potential participants' introduction to the study occurred from medical assistants with whom they were familiar. Those interested in information were introduced to a member of our research team and given a brief overview of the study. If they were potentially interested, they provided contact information and length of pregnancy (in weeks) for subsequent telephone screening procedures.

We also sought to reduce both language and resource barriers for potential and enrolled participants, and provided incentives for participation. During recruitment, bilingual team members were available at the clinic to talk with potential participants, and all study procedures were available in Spanish or English. Enrollment and the Pre assessment, as well

as the first meeting for couples assigned to the experimental intervention condition (EXP), occurred at the CPSP either immediately before or after a scheduled prenatal checkup so couples would not need to make an additional trip for the study. All subsequent contact with participants was either at their home or over the telephone, eliminating the need for transportation. During in-home assessments and meetings, a study team member was available to provide care for infants. We provided participants with small baby gifts at in-home visits, as well as payment for assessments and meetings with trainers. Participants were compensated a fixed amount in cash at each contact totaling up to \$385 (EXP) or \$275 (treatment-as-usual control condition; TAU) per couple (i.e., \$10/hr for their time). It was possible for one partner to continue participation individually if the other partner declined to participate in an assessment or dropped out of the study.

Finally, members of our study team sought to build strong relationships and maintain contact with participants over the course of the study. Following enrollment, the same team of two study members conducted all reminders, telephone assessments, and home visits with a given couple. As couples were screened during the first 32 weeks of pregnancy, but were not enrolled until week 28, eligible couples waited several months for enrollment. Given this potentially long “lead time,” couples were contacted monthly between initial screening and enrollment to remind them of the study and timing of enrollment, and to determine whether their contact information or due date had changed. We attempted to contact couples at least three times using their preferred method of contact (typically phone or text) following our last contact with them. Finally, enrolled couples were sent cards following the births of their babies and before follow-up assessments. These practices did not differ by condition.

Procedures

Eligible and interested couples enrolled in the study during the third trimester of the woman’s pregnancy (weeks 28–32). Couples completed assessments at similar timing with respect to the birth of their baby regardless of the condition to which they were randomized.

Randomization and intervention.—Couples were randomized and enrolled in either TAU ($N = 10$) or EXP ($N = 11$) when they arrived to their initial study appointment (see Figure 1). The IRB overseeing the study required separate consent forms for each condition. Thus, we randomized prior to enrollment. An additional couple was randomized to the TAU condition, but subsequent contact revealed they were not in a relationship and we therefore removed them from the study. An additional couple randomized to the EXP condition did not enroll in the study.

Treatment as usual services, to which all enrolled couples had access through the CPSP, included educational materials and classes on topics including health behavior, depression, childbirth, breastfeeding, and infant care. There were no systematic psychosocial programs for new parents at the time of the study, and no programs focused on couple relationships. Couples assigned to the EXP condition received an adaptation of the American version of Couple CARE for Parents (CCP; Halford, Heyman, Slep, Petch, & Creedy, 2009), a cognitive-behavioral relationship education and parenting program designed to target areas of risk in low-income couples (e.g., bonding, infant care, conflict management). Whereas the

American version of CCP is delivered following birth, we added a meeting during pregnancy to engage couples in CRE before the stress of a new baby, and to facilitate partners' discussion of expectations for parenthood and sources of support within and outside the relationship. EXP couples were assigned a trainer to guide them through the program. All trainers had previous experience delivering cognitive behavioral therapies as well as master's degrees in either Clinical Psychology or Social Work. Trainers participated in a 3-hr training in the treatment protocol and were supervised in delivery of the intervention. One trainer was a native Spanish speaker and delivered the intervention to a Spanish-speaking couple.

Table 1 presents additional information on the EXP intervention, which consisted of a total of 8 meetings (8–12 hours of contact, as meetings lasted 60–90 minutes each). Couples watched DVD segments and completed workbook exercises between meetings with their trainer to apply skills. Couples received a final (9th) booster meeting with their trainer following the 6-month follow-up assessment, but no outcome data were collected following this meeting.

Assessment.—Partners completed self-report measures following study enrollment during pregnancy (Pre). Approximately 11 weeks after birth (within one week of EXP couples' meeting 8 with their trainer) partners completed questionnaires and behavioral interactions in their home (Post). Finally, partners completed questionnaires 3 and 6 months after Post.

Measures

Relationship satisfaction.—The 32-item Couples Satisfaction Index (CSI; Funk & Rogge, 2007) was used to track partners' relationship satisfaction across assessments. This measure was translated into Spanish using recommended translation-back translation methods (e.g., Miranda et al., 1996). The CSI has established validity (Funk & Rogge, 2007), and internal consistency was good among items at Pre in the current sample for both men ($\alpha = .97$) and women ($\alpha = .98$). At Pre, one woman reported a low level of satisfaction on the CSI that was an outlier in the current sample (i.e., less than 2.5 *SDs* below the gender mean). There was also an outlier at Post (one woman's CSI). We winsorized these values for analyses unless otherwise noted (i.e., replaced them with a value 2 *SDs* from the gender mean at that time point; Erceg-Hurn & Mirosevich, 2008). Both men ($M = 139.67$, $SD = 22.91$) and women ($M = 137.67$, $SD = 27.05$) were, on average, in the nondistressed range of relationship satisfaction at Pre based on the distress cutoff of 104.5 (Funk & Rogge, 2007), although both partners in one TAU and one EXP couple, as well as a man from another EXP couple, reported clinically significant relationship distress. There were no significant differences between conditions at Pre.

Individual distress.—The 21-item version of the Depression Anxiety Stress Scales (DASS; Lovibond & Lovibond, 1995) was used to track individual distress across assessments. Spanish-speaking couples completed a translation of the DASS that was validated in Latino populations (Daza, Novy, Stanley, & Averill, 2002). The DASS composite scale has demonstrated good internal consistency and convergent and

discriminant validity in community samples (e.g., Sinclair et al., 2012). Internal consistency in the current sample was good at Pre for both men ($\alpha = .89$) and women ($\alpha = .88$). We winsorized one man's report at Pre, one man and one woman's reports at Post, and one woman's report at 3-month follow-up to 2 SDs from the gender mean. We doubled composite scores on the DASS as Sinclair et al. (2012) recommended. On average, both men ($M = 7.93$, $SD = 9.66$) and women ($M = 15.81$, $SD = 14.97$) were in the normal range of individual distress at Pre based on community samples in the U.S. (Sinclair et al., 2012). Both partners in one EXP couple, women from two other EXP couples, and one woman and one man from TAU couples reported clinically significant distress (i.e., in the moderate, severe, or extremely severe ranges of depression, anxiety, and/or stress; Lovibond & Lovibond, 1995). There were no significant differences between conditions at Pre.

Participant satisfaction with the intervention.—We assessed EXP partners' satisfaction with the intervention up to five times between Pre and Post with a 10-item measure developed for use with CCP (Halford et al., 2009; see Table 2). This measure assessed satisfaction with program content, alliance with trainer, trainer credibility, and overall experience, on a scale from 1 (*not at all*) to 5 (*very much*). Internal consistency in the current sample was good ($\alpha = .87$).

Trainer skill and adherence.—Trainer skill and adherence were assessed during audio-recordings (meetings 1, 2, and 5). Seven trained observers rated all meetings in a random order of couples and meetings. Four bilingual observers rated the monolingual Spanish-speaking couple's meetings. Items were rated on a scale from 0 (*poor*) to 6 (*excellent*). Skill items were based on a measure of therapist competence and included neutrality, understanding, interpersonal effectiveness, and quality of the therapeutic alliance (Jacobson, Christensen, Prince, Cordova, & Eldridge, 2000). These items had excellent internal consistency in the current study ($\alpha = .92$). Adherence items were ratings of the degree and quality of coverage of meeting-specific tasks. Inter-rater reliability was good for skill ($\alpha = .83$) and fair for adherence ($\alpha = .68$).

Results

Recruitment Outcomes

Of the 192 women who spoke with a member of our study team, 156 (81.3%) provided us with their contact information. Fewer Spanish-speaking ($n = 19$; 65.5% of 29) relative to English-speaking women ($n = 137$; 84% of 163) expressed interest, $\chi^2 = 5.55$, $p = .018$. Following in-person contact at the CPSP, we were able to reach 95 women by phone (60.9% of those who expressed interest in person). Twenty-one eligible couples were randomized to conditions and enrolled in the study. Thus, our overall recruitment rate was just 10.9% of the women to whom we provided study information. See Figure 1 for additional details.

We sought to better understand our low recruitment rate using data on pregnancy length at initial contact ($n = 151$; $n = 5$ declined to provide these data). These women were, on average, early in the second trimester of pregnancy (week $M = 14.07$, $SD = 6.56$). There was not a significant difference in pregnancy length between those who enrolled ($M = 13.90$, SD

= 4.64; $n = 21$) and those who did not ($M = 14.09$, $SD = 6.83$; $n = 130$), $t(149) = 0.12$, $p = .90$.

Retention Outcomes

We also experienced substantial challenges with retention. Significantly fewer EXP couples (36.3%; $n = 4$) completed Post relative to TAU couples (75%; $n = 7$ plus one additional woman), $\chi^2 = 6.31$, $p = .01$. We examined whether there were differences in demographics or baseline measures between couples in which both partners remained in the study through Post ($n = 11$) and those who dropped out ($n = 10$). There were not significant group differences in individual or relationship distress, age, marital status, ethnicity, language, education, or annual household income ($ps > .10$). There was a marginally significant difference between groups in pregnancy length at initial contact: women in couples who remained in the study were somewhat earlier in their pregnancies when they were recruited ($M = 12.27$ weeks, $SD = 3.85$) relative to women in couples who dropped out ($M = 15.70$ weeks, $SD = 4.95$), $t(19) = -1.78$, $p = .09$.

Intervention Outcomes

Seven of the EXP couples who enrolled in the study did not receive the full intervention. They completed one ($n = 3$), two ($n = 1$), or three ($n = 3$) meetings with their trainers. The four EXP couples who remained in the study received all 8 intervention meetings. Descriptive statistics, as well as within- and between-group effect sizes, are presented in Table S3 of Appendix S1. No effect sizes were significantly different from zero.

Participant Satisfaction with the Intervention

Satisfaction with the program was high among the four EXP couples who completed the study ($M = 4.26$, $SD = 0.63$; see Table 2 for descriptive statistics of items by participant gender). Partners in one EXP couple that completed satisfaction ratings prior to dropout also reported high satisfaction with the intervention ($M = 4.55$, $SD = 0.09$). The Spanish-speaking couple's satisfaction with the intervention ($M = 3.52$, $SD = 0.49$) was significantly less positive than that of English-speaking couples ($M = 4.60$, $SD = 0.34$), $t = -5.63$, $p < .001$.

Trainer Skill and Adherence

Trainer skill and adherence were between “good” and “very good” (skill $M = 4.39$, $SD = 0.47$, range = 2.96 – 5.29; adherence: $M = 4.46$, $SD = 0.32$, range = 3.89 – 5.14).

Discussion

We sought to mitigate challenges with recruitment and retention of low-SES ethnic minority couples in this trial of CRE at the TTP. Despite our efforts, we had low rates of both recruitment (approximately 11%) and retention through Post (36.3% EXP, 75% TAU). Participants engaged in the intervention reported satisfaction with it, and trainers were both clinically skilled and adherent, yet we were unable to draw conclusions about the effectiveness of the program due to our small sample size. To better understand factors related to recruitment and retention, we conducted a series of post hoc analyses. We discuss

these findings in the context of our review of previous work in this area, and make recommendations for future research, practice, and public policy.

Our review of previous work illustrated difficulty recruiting, retaining, and engaging low-SES ethnic minority couples in CRE research. There was a less extreme yet similar pattern of difficulty during the TTP, although we did not identify any trials with predominantly low-SES ethnic minority samples. Our case study illustrates challenges at the intersection of the two sets of CRE studies reviewed. For couples who are already faced with the chronic stress of low SES and ethnic minority status, the added stress of the TTP may present a higher obstacle to participation in CRE than any of these factors in isolation. This is one potential explanation for the lower retention rate in the EXP compared to the TAU condition in our study despite similar hourly compensation across the two conditions. It may be that too much time was required for CRE, a common reason for noncompletion noted by participants in the studies we reviewed.

Women in couples who dropped out of our study were somewhat later in pregnancy at initial contact relative to those in couples who were retained (a marginal effect). We would have expected the opposite pattern since recruitment with too much lead time may result in disinterest in the study (Harachi et al., 1997). However, this trend is consistent with a finding in the BSF study: couples who enrolled early in pregnancy were more likely to participate in CRE compared to those who enrolled in late pregnancy or after giving birth (Dion et al., 2010). Although in contrast to our study, BSF staff sought to enroll couples and deliver CRE right away, this combination of findings suggests that stage of pregnancy at recruitment may be a proxy for couple characteristics that increase retention in research and engagement in CRE. It is possible that couples who enroll in a study many months before the birth of a baby are the most invested, interested, or able participants. Taken together, these findings point to the potential importance of the timing of recruitment and delivery of CRE. All participants in the trials we reviewed of CRE during the TTP were recruited during pregnancy, consistent with our methods. However, in contrast to our methods, and relevant to the above finding from the BSF study, the majority of CRE in these studies occurred prenatally. It is possible that typical challenges associated with delivering CRE to low-SES couples were exacerbated by the timing of CRE in our study.

The BSF study successfully recruited a sample of predominantly low-SES ethnic minority unmarried couples during pregnancy or early postpartum. Although these couples were going through a transition, the population from which the researchers sampled was somewhat different from ours in that BSF couples had an average of one other child living in the home (Dion et al., 2010). Nonetheless, of the studies reviewed, the BSF sample was most similar to that of the current study. The Oklahoma site recruited the largest sample of couples into the BSF study of the eight sites, although it was somewhat less diverse than the pooled sample. Participating couples were more likely to identify as White, non-Hispanic (37%), have higher education levels and employment rates, and be more committed to their relationship relative to the average couple in the larger study. Its engagement rates were the highest (73% of CRE couples participated in at least one workshop together, 45% completed > 80% of workshops), but retention rates were near the BSF average (Dion et al., 2010).

Oklahoma *also* participated in the SHM study, recruiting the largest sample and evidencing some of the highest engagement and retention rates (Miller Gaubert et al., 2012).

As this site appeared uniquely able to recruit, retain, and engage low-SES couples around the birth of a child, we considered what factors may have contributed to Oklahoma's success. In addition to federal funding for BSF and SHM, the site had state funding for the projects and several years' experience planning widespread dissemination of CRE (Miller Gaubert et al., 2010). With these pooled resources, Oklahoma's program was created to carry out these studies. It had the greatest number of dedicated staff, the most CRE workshops offered (attended by married and unmarried couples together), and the most extensive system of incentives for CRE participation (Dion et al., 2010). This combination of factors allowed couples to complete the CRE program in a matter of weeks (compared to many months at other sites) and to receive more incentives for participation in that period of time (up to \$800 per couple in cash, gift cards, and credit toward items in a store run by the program) (Dion et al., 2010). This, in combination with the fact that 80% of women in BSF were pregnant at baseline (compared with 62% in the full sample), may explain high engagement yet just average retention in BSF for couples at the Oklahoma site (Dion et al., 2010). It is possible that delivery of CRE during a concentrated time during pregnancy with the same total incentives would have led to greater participant engagement and retention in the current study.

It is also possible that the small percentage of couples who enrolled and were retained in our study were not representative of the larger population served by the clinic, as suggested by our higher recruitment rate of English-speaking compared to Spanish-speaking couples. As we did not target a single ethnic group, we were unable to consider potential cultural adaptations to the intervention and broader study in depth. This may explain both our lower recruitment rates and lower levels of participant satisfaction with the intervention in Spanish-speaking compared to English-speaking couples. While ethnically diverse samples such as ours are more likely to lead to generalizable results, they are limited in the degree to which the study can be targeted or tailored to participants' specific situations (Knight, Roosa, & Umaña-Taylor, 2009).

The couples we retained in our study may have represented the couples who were functioning well in their relationships and coping most effectively with the stress associated with the TTP. Consistent with this, participants in our sample were on average in the nonclinical range of individual and relationship distress. Although there were not differences in individual and relationship distress scores between couples who dropped out and those who were retained, it is possible this varied by condition. Of the one-third of couples in our sample in which at least one partner reported clinically significant individual or relationship distress at Pre ($n = 5$ EXP, $n = 2$ TAU), the two couples that dropped out were in the EXP condition (a couple in which both partners reported relationship distress, and a couple in which the woman reported clinically significant symptoms of depression and anxiety). Future studies with low-SES samples that are adequately powered to detect condition by dropout interactions may support the possibility that baseline distress is more strongly related to dropout in CRE compared with control conditions. Another possible explanation for the differential attrition rates is that the self-directed format of the intervention was

particularly challenging for our sample of couples; previous work has found lower education levels in CRE noncompleters compared to completers (e.g., Petch et al., 2012).

Conclusions and Recommendations

There is an on-going debate about the helpfulness of CRE that has important research, practice, and policy implications (Cowan & Cowan, 2014). Unfortunately there are serious methodological problems with existing research in this area that include, but are not limited to, low generalizability due to recruitment, retention, and engagement challenges. Our review of related literature and our experience in the current study highlight several considerations in the design of future studies of CRE for low-SES couples during the TTP. First, timing is likely crucial. It appears that enrolling and intervening with expectant couples prior to the birth of their baby may be linked with more successful recruitment as well as greater retention and engagement. Second, delivery of CRE over a concentrated period of time may be more feasible than the same dose spread out over many months. Finally, it is possible that providing large early financial incentives facilitates initial engagement in CRE, consistent with experimental work examining low-SES families' engagement in parent training (Heinrichs, 2006).

In randomized trials of CRE more broadly, we recommend more detailed reporting on recruitment, retention, and engagement, as well as systematic examination of differences in demographic and baseline factors based on retention and engagement status. Related to recruitment, we recommend that researchers track and report in outcome papers: (1) the total number of individuals or couples approached, (2) the specific recruitment method(s) used and relative success associated with each, (3) the number of couples formally screened, (4) reasons for exclusion along with respective numbers excluded, and (5) the timing of exclusion (for studies involving multiple contacts prior to enrollment). Related to retention, we recommend that researchers provide details on strategies used, as well as the number of participants retained at *every* time point. Finally, with regard to engagement, we recommend that researchers report or provide adequate data for calculation of: (1) the percent of randomized and enrolled couples that do not participate in the intervention at all, (2) the mean and median dose received by couples who began the intervention, and (3) the percent of randomized and enrolled couples who are “completers” (i.e., received > 75% of the intervention, and/or the key components of the intervention). This minimum information is crucial if the field is to improve upon previous work in this area.

Finally, our findings have implications for CRE delivery to low-SES couples outside of the research context. Consistent with our recommendations for research, the timing and length of CRE should be carefully considered for the specific population targeted. Programs that are able to reach couples early in pregnancy are likely to be the most successful. Consistent with both public health emphasis on community-based health promotion and prevention (e.g., Merzel & D’Afflitti, 2003) and our previous recommendations for research, engagement of community members is crucial for the successful delivery of CRE. Community participation in planning efforts, as well as in program implementation, has the potential to increase the acceptability of CRE programs' content and the likelihood of successful delivery to couples in target communities. Both improving upon the

methodological limitations of research and increasing community involvement in the delivery of CRE have the potential to inform public policy in this area. By refining efforts to reach low-SES couples across research, practice, and public policy initiatives, we can improve the quality of care for underserved couples.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Figure 1.
Recruitment and Assessment Flowchart

Note. m = men, w = women.

Table 1

Intervention Program Content

Meeting	Timing Location	Topic & Content
1 (following Pre assessment)	3 rd trimester CPSP office	Overview of Intervention <ul style="list-style-type: none"> • Assessment of relationship history, strengths, challenges • Expectations for parenthood • Social support
2	4 weeks after birth Couple's home	Life with Your New Baby <ul style="list-style-type: none"> • Bonding and infant care: sleeping, feeding, crying/soothing, playing • Self-change
3	5 weeks after birth Telephone	Family Expectations and Communication <ul style="list-style-type: none"> • Family expectations • Communication skills training
4	6 weeks after birth Telephone	Managing Stress & Differences <ul style="list-style-type: none"> • Self-talk • Problem solving training
5	7 weeks after birth Couple's home	Managing Conflict <ul style="list-style-type: none"> • Conflict styles • Conflict de-escalation
6	8 weeks after birth Telephone	Managing Challenges <ul style="list-style-type: none"> • Behavioral exchange • Division of household labor • Anticipating challenges
7	9 weeks after birth Telephone	Roles, Sex, and Commitment <ul style="list-style-type: none"> • Values • Sex after having a baby • Commitment

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Meeting	Timing Location	Topic & Content
8 (before Post assessment)	10 weeks after birth Telephone	The Road Ahead <ul style="list-style-type: none">• Managing change• Relationship and parenting goals

Table 2

Participant Satisfaction with the Intervention

Item	Men <i>M</i> (<i>SD</i>)	Women <i>M</i> (<i>SD</i>)
1. Material covered in this session fit my situation.	3.85 (1.21)	4.00 (1.08)
2. My coach and I work together as a team.	4.38 (0.96)	4.62 (0.65)
3. I feel comfortable opening up during sessions (for example, sharing feelings, trying new things).	4.08 (1.04)	4.08 (0.95)
4. I feel connected and comfortable with my coach.	4.15 (0.80)	4.46 (0.66)
5. There are some topics I am afraid to discuss during sessions. (r)	4.54 (0.88)	4.44 (0.88)
6. My coach understands me.	4.08 (0.76)	4.23 (0.60)
7. My coach does not have the knowledge and skills to help me. (r)	4.69 (0.85)	4.13 (1.64)
8. I feel defensive during sessions. (r)	4.46 (0.88)	4.56 (0.73)
9. I see <i>Couple CARE for Parents</i> as a way to strengthen our family.	4.15 (1.14)	4.31 (0.95)
10. I see <i>Couple CARE for Parents</i> as a good use of our time.	4.31 (0.95)	4.38 (0.87)
Overall satisfaction	4.28 (0.70)	4.25 (0.60)

Note. Items were rated on scale from 1 (*not at all*) to 5 (*very much*), with additional response options of *don't know* and *not applicable*. (r) indicates that the item was reversed-scored such that higher scores indicate more positive experience. Data presented are from the $n = 4$ EXP couples that received the full intervention and completed the Pre and Post assessments.