

Preliminary Efficacy of an Intervention to Reduce Psychosocial Stress and Improve Coping in Low-Income Families

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Abstract This article reports pre–post intervention results from a randomized controlled trial evaluating the initial efficacy of a couples-based intervention aimed at teaching skills for coping with stress and improving relationship skills in a sample of 173 ethnically diverse low-income co-resident mothers and fathers who were raising at least one child together. Couples were randomly assigned to one of three interventions or to an assessment-only control condition. The Fatherhood, Relationship, and Marriage Education (FRAME) intervention is a 14-h psychoeducation intervention developed specifically to strengthen the ability of low-income mothers and fathers to reduce conflict, cope with stress, and co-parent effectively. Three versions of FRAME were assessed: a men-only group, a women-only group, and a couple’s group. The pre-post intervention analyses revealed reductions in financial stress, disengagement coping, and involuntary disengagement responses, as well as improvements in problem solving. These pre–post changes on stress and coping variables were both statistically significant and reliable as assessed by the Reliable Change Index (Jacobson and Truax 1991). Results were particularly strong for the couples’ and women’s groups. In addition, positive pre-post changes on stress and coping variables were associated with pre-post reductions on symptoms of depression for participants assigned to an intervention. The results demonstrate that participants in FRAME acquire some of the

key skills taught in the intervention, and skills acquisition appears to translate into symptom reduction. In addition, this study highlights the value of an intervention aiming to improve the capacity of parents with economic hardship to cope effectively with stress.

Keywords Prevention · Poverty · Families · Stress · Coping

Introduction

Living with economic hardship takes a significant toll on the health and well-being of individuals and families, leading to considerable SES-based health disparities. A steady income-health gradient is evident across the world for both mental and physical health (Sapolsky 2005). Each step down the socioeconomic ladder is accompanied by worse health. The gradient remains even when healthcare access and a variety of health risk behaviors are accounted for, and psychosocial stress has emerged as an important mechanism of the SES-health gradient. Conger and colleagues’ Family Stress Model (e.g., Conger et al. 2000), for example, identifies the day-to-day stressors resulting from living without sufficient income (e.g., economic strain) as a key conduit through which economic hardship takes a toll on individuals and families. A recent review by Conger et al. (2010) concluded that theoretically driven experimental and longitudinal investigations of family processes in low-SES families are sorely needed to advance science and address SES-based health disparities. This study evaluates the preliminary efficacy of a new preventive intervention for families with low incomes designed to address several family processes negatively affected by economic hardship in the service of preventing family dysfunction.

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The current project is guided in part by Conger and associates' integrated and expanded Family Stress Model. Applications of the Family Stress Model with ethnically diverse families affected by chronic economic problems and poverty (e.g., White et al. 2009) have expanded the base of support for a basic cascade of disruption and disorder that starts with (1) economic hardship, which leads to (2) economic strain, that (3) wreaks havoc on the relationships of parents and their psychological functioning, that (4) interfere with effective parenting and positive parent–child relationships, all of which ultimately lead to (5) negative outcomes for children (e.g., Dennis et al. 2003; Mistry et al. 2002). Thus, we have developed an intervention which specifically targets three areas: financial stress, interparental (couple) relationships, and parenting. By focusing on these multiple risks of the Family Stress Model, we maximize our potential to strengthen families and improve health and well-being. In keeping with the Family Stress Model, which places stress at the core of SES-linked family disruption, this paper focuses on our ability to effect change in coping and stress early in the intervention process. Future papers will examine later changes in the process, such as relationship quality, parenting, and child outcomes.

According to the Responses to Family Stress Model (Wadsworth et al. 2010), economic stress not only disrupts family relationships and processes, but also constrains the ability to cope with stress and contributes to psychological problems in family members living with economic hardship. The Responses to Family Stress Model asserts that active coping, such as problem solving and cognitive restructuring, has the power to buffer some of the stressors associated with economic hardship. Unfortunately, research also shows that while such coping is related to better concurrent and prospective functioning, stress can reduce one's ability to make use of effective coping strategies (e.g., Gonzales et al. 2001). Hence, the Responses to Family Stress Model adds a sixth step to Conger's Family Stress Model—Coping—which is both constrained by economic stress and contributes to or protects against psychological distress. Of course, coping will not take care of structural barriers, physical stressors associated with residence in low-income communities, and race- and class-based discrimination. However, the idea behind the current project is that stress and depression can get in the way of proactive efforts to make positive and lasting changes for one's family—coping can help with that.

Primary control coping (e.g., direct efforts to manage a stressful situation, including emotional expression, emotional regulation, and problem solving) and secondary control coping (e.g., adapting oneself to a stressful situation, including acceptance, cognitive restructuring, distraction, and positive thinking) generally show protective effects in longitudinal research with adults and children exposed to

economic stress (e.g., Wolff et al. 2009). Unfortunately, as noted by Gonzales et al. (2001), there are limits to active coping's ability to protect against extreme stress. Hence, some studies of youths facing chronic, uncontrollable inner city violence, for example, have found that avoiding violence is associated with less hopelessness (e.g., Landis et al. 2007). In addition, however, the Landis and colleagues study was cross-sectional, and Santiago and Wadsworth (2009) have found different short- and long-term effects of disengagement coping. In particular, they found that while disengagement was not related to poorer functioning cross-sectionally, it was associated with more symptoms over time, suggesting that while disengagement coping may make an individual feel better in the short-term, long-term reliance on this strategy is ultimately not helpful.

Disengagement coping (e.g., avoidance, denial, and wishful thinking) and involuntary stress responses such as rumination, escape, and physiological arousal generally exacerbate rather than ameliorate stress (e.g., Santiago and Wadsworth 2009), except in extreme situations (e.g., Edlynn et al. 2008). Involuntary stress responses are thought to function as early warning signs of stress to the individual, thereby notifying the individual that coping is needed. However, involuntary responses can interfere with coping, especially if they take the individual's attention away from the situation or flood the individual with emotion. Coping and involuntary stress responses have the potential to mediate or moderate the associations between stress and disruptions/symptoms.

Bolstering the ability of adults in a family to cope with economic stress has the potential to break links in the family economic stress models by reducing the psychological distress that ties economic stress to the rest of the problems that wreak havoc on a family (such as conflict and disrupted parenting). In addition, interventions can give participants skills for reducing involuntary stress responses. Overall, enhancing adaptive primary and secondary control coping strategies and reducing involuntary engagement (emotional and physiologic arousal, rumination, intrusive thoughts, and impulsive action) and disengagement (cognitive interference, escape, emotional numbing, and inaction) responses may be an effective approach to preventing psychological problems among adults living in poverty, with positive implications for the entire family system. Such an approach has shown efficacy with low-income children and their parents (Raviv and Wadsworth 2010).

Current Study

This study reports initial findings from a randomized control trial evaluating preliminary efficacy of the Fatherhood, Relationship, and Marriage Education (FRAME) project, a new preventive intervention for low-income parents. FRAME

is based on the Responses to Family Stress Model, and therefore teaches a variety of skills to strengthen the interparental relationship and optimize parenting effectiveness, including a novel emphasis on stress education, coping, and stress management. In this report we explore how well the intervention addressed short term acquisition of coping and problem solving skills and the extent to which skill acquisition was related to decreased perceived stress and improved symptoms of depression. The current study is the first application of the Responses to Family Stress Model to the prevention of psychological problems on a large scale. In this study we are evaluating the initial (pre-post) efficacy of the intervention.

The central aims of the study were to (1) present basic information on the content and process of the new Fatherhood, Relationship, and Marriage Education (FRAME) intervention, (2) assess the extent to which couples who participated in the intervention improved significantly from pre- to post-intervention as compared to a control group on stress and coping, and (3) examine the extent to which pre-post changes on stress and coping variables predicted changes in depressive symptoms. Intent to treat analyses with all 173 randomized couples were conducted, as well as analyses with couples who completed at least one workshop and both pre and post assessments (efficacy analyses). In addition to testing for statistical significance using traditional methods, we assessed the extent to which observed changes were reliable, using the Reliable Change Index (Jacobson and Truax 1991). A benefit of this adjunctive technique is that it allows researchers to examine both improvements and deteriorations that occur as a result of participating in an intervention (Hawley 1995). This index is considered to be the more appropriate index of clinical significance to use in a prevention study using a non-clinical sample, where diagnostic cutoffs on symptom measures, for example, do not apply.

Hypotheses: (1) men and women in the intervention groups would show significantly greater pre-post increases in primary and secondary control coping and decreases in economic stress, disengagement coping, involuntary engagement, and involuntary disengagement than those in the control group, (2) pre-post changes on stress, coping, and involuntary responses would predict pre-post changes in depression for couples in the intervention groups, (3) the Reliable Change (RC) estimates would support the results of the Repeated Measures Analyses of Variance.

Method

Participants

Our sample contains: 32.8% Caucasian, 27.9% African-American, 23.5% Hispanic, 5.9% American Indian, 9.9%

Biracial/Multiracial or Other. The average family income is \$23,219 (SD = \$15,445; range \$0–70,000). We calculated income-to-needs ratios, using federal 2008 poverty line levels (used to qualify participants), and found that 53% of the sample was at or below the poverty line at baseline. Among male participants, 65.3% are employed, the average age is 33.9 (SD = 9.29), and they have on average 12.4 years of schooling (SD = 2.4). Of female participants, 57.6% are employed, the average age is 31 (SD = 8.3), and they have 12.78 years of schooling (SD = 2.3). Most participants are married (66.7% with 14.6% engaged) and the average length of the current couple relationship is 6.8 years (SD = 5.6). The mean number of children in the home is 2.23 (SD = 1.26).

Participants in this study were 173 low-income couples in committed relationships (married or cohabiting for at least 6 months) and caring for at least one child together. Only couples with children were recruited because the intervention is geared toward families with children in the home. Out of the 173 couples on whom baseline data were collected, data from 9 couples were dropped from analyses due to unusable data resulting from problems with language ability and inappropriate participant behavior. Out of the original 173 couples, 150 came in for their post assessment (86.7%).

Procedure

Couples were recruited via: flyers, newspaper advertisements, media interviews, direct contact with couples in community settings, and collaboration with community leaders and organizations in the Denver area. Interested couples were screened for the following criteria: low-income based on 200% of the federal poverty line, involved in an ongoing committed relationship, living together for ≥ 6 months, and co-parenting at least one child under age 18. In addition, participants were excluded if they had prior experiences with our intervention material, and if they could not read or write fluently in English. Participants were informed that 75% of couples in the study would be randomly chosen to participate in one of the intervention groups (traditional couples group, group for male partners only, and group for female partners only) and that 25% of couples would be assigned to a control group. Both partners needed to verbally agree to these procedures and state their willingness and availability to serve in any intervention condition before being signed up for the study. Once qualified, couples were scheduled to meet with assessment staff (independent team not involved in delivering the intervention). Each member of the couple completed the baseline assessment protocol in private. Measures gathered information on individual and relationship functioning, parenting, and child emotional/

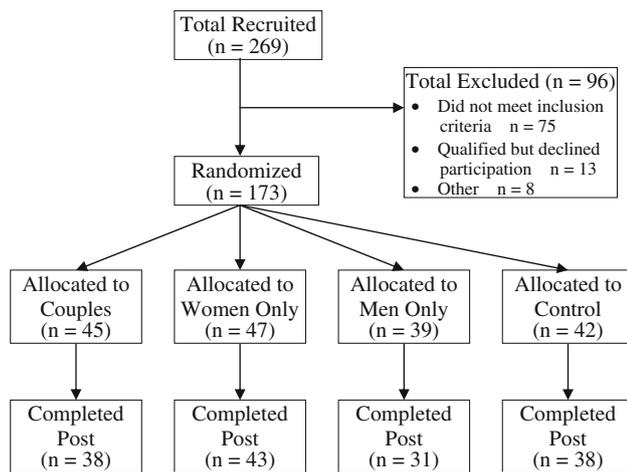


Fig. 1 Recruitment and participation flowchart

behavioral functioning and took on average 1–2 h to complete. Upon assessment completion, couples were randomized into groups (see Fig. 1). Randomization was accomplished by the assessment team using the online random number generator: <http://www.randomizer.org/form.htm> to request unique sets of block randomization with a range of 1–4. Assignments were printed by a member of the research team and put into an envelope in the order in which it was generated, and the envelopes were kept in that order. After a couple's baseline assessment was completed, a member of the assessment team who had no knowledge of the contents of the envelope handed the couple the sealed envelope containing their assignment. Those selected for workshops began attendance within 2 weeks of completing baseline measures. Couples were paid \$40 each for conducting baseline assessments, \$60 each for conducting post-intervention assessments, and \$70 for follow-up assessments. Childcare stipends in the amount of \$20–30 (depending on # of children) were also provided to offset costs of attending workshops.

Intervention

Workshops involved 14 h of content and were conducted on 3 Saturdays (6 h each) or 5 weeknights (3.5 h each), with meals and childcare stipends provided. Workshops were conducted both at the university and at two centrally located community agencies (a community college and a housing authority community center). Sixty-eight percent of participants completed workshops on the Saturday schedule. Participants who were unable to attend a session were invited to make up the session. 19.7% couples were invited to attend make-up sessions, and 10% of couples completed at least one make-up session. Workshops were led by a team of highly trained male–female leaders,

comprised of community service providers (B.A.-level full- and part-time employees of the grant-funded project with strong community connections) and clinical psychology graduate students and post doctoral fellows. Groups ranged from 3 to 9 participants or couples, with larger groups having trained coaches in addition to leaders who facilitated the practice of skills.

The FRAME (Fatherhood Relationship And Marriage Education) intervention is a father-inclusive, father-friendly family strengthening psychoeducation intervention based in part on a new adaptation of PREP (Prevention and Relationship Enhancement Program; Markman et al. 2010), developed specifically to meet the needs of lower income and higher risk couples (Stanley et al. 2006). The FRAME curriculum was created with extensive contact, interviews, and piloting in ethnically and financially diverse communities and with those who work extensively with these communities, and is designed to build on the existing strengths of couples and add critical life and relationship skills.

The curriculum has three main components: (1) relationship education; (2) stress and coping skill training, and (3) child-centered parent training. The relationship education portion teaches couples positive communication skills and also teaches about negative communication styles such as invalidation and withdrawal. Couples learn about prosocial conflict resolution, techniques for improving their support and commitment to each other, and ways to evaluate their expectations of each other. Finally, couples learn about taking time out to preserve and protect the positive side of their relationship, how to maintain strong community connections, and how to plan for their futures. The stress and coping modules teach couples and individuals how to identify the stressors in their lives with an emphasis on financial stress and how to distinguish between those events and circumstances that are readily solvable and those that need to be coped with in another way. Next, individuals learn progressive muscle relaxation and are taught about the importance of giving and receiving social support. Then, individuals are taught basic problem solving steps and work through current problems using the steps, focusing on problems that have identifiable solutions. Finally, individuals learn how to cope more effectively with stressors that are not readily solved in the moment using active acceptance and cognitive restructuring (Raviv and Wadsworth 2010; Wadsworth and Santiago 2008). The child-centered parenting module teaches parents how to identify and set developmentally appropriate expectations for their children, teaches how to use positive reinforcement to build prosocial child behaviors, and introduces the idea of natural consequences and alternatives to corporal punishment such as time-out. Parents reflect on their own and their partner's

parenting styles and conduct a structured activity to help them develop a co-parenting plan.

FRAME includes extensive use of activities, discussions, and practice designed to teach skills and principles. The same FRAME materials and skills were presented in both the couple and individual workshops, with minor adjustments made to accommodate presentation and practice for individuals versus two members of a couple. Participants were assigned homework after each session (e.g., practicing skills, going on a date with their partner). In addition, members of the men's and women's groups were instructed to talk with their partners about what they learned in the session. Table 1 contains descriptions of each module of the intervention and sample exercises from each.

Leader Adherence (Fidelity) and Intervention Acceptability. To gauge fidelity, independent coders listened to audio-recordings of the sessions and used checklists to rate how well the leaders followed the FRAME script (1 = *this topic was not mentioned*; 2 = *this topic was partially covered, with a significant piece or pieces missing*; 3 = *this topic was fully covered*). Leader adherence (i.e., Fidelity) to the intervention has been very high ($M = 2.92$ on a 3-point scale). In addition, participants have expressed strong satisfaction with the intervention (6.4 out of 7), with average ratings for each group as follows: couples = 6.55 (.84), men's = 6.1 (1.56), women's = 6.45 (1.01). Even non-attenders rated it highly at 6.15 (1.57). In terms of how helpful the intervention has been for their relationship, participants gave an average of 6.3 out of 7, with couples = 6.54 (.84), men's = 6.12 (1.52); women's = 6.27 (1.12); non-attenders = 6.01 (1.54). Participants' ratings of leader effectiveness were also very high at 6.3 out of 7 (see Markman et al. 2009); with couples = 6.37 (.95), men's = 6.17 (1.05), and women's = 6.13 (.96).

Within 2 weeks of completing workshops, all intervention and control group participants completed post-intervention assessments, then a 6-month follow-up assessment, and annual assessments thereafter (pre-post-assessments are analyzed in this paper). The current study reports data from the first seven waves of workshops, for which we have complete pre- and post-intervention data. Ten waves of workshops are planned—future papers will utilize all waves once the data are collected. Due to the nature of the interventions, participants and staff were not blind to condition.

Measures

Descriptive Information. Participants reported basic descriptive information about themselves (e.g., age, race/ethnicity, income, years of education, children, religiosity, marital status).

All measures were administered at each timepoint.

Financial Worries. The 11-item Economic Hardship Questionnaire (EHQ; Lempers et al. 1989) was used to assess the degree of financial worries in the preceding 6 months. Participants rate on a 4-point scale (1 never happened, to 4 very often happened) how often they have made changes/adjustments in order to make ends meet. The EHQ has demonstrated construct and predictive validity in multiple samples of ethnically and socioeconomically diverse families (e.g., Lempers et al. 1989; Wadsworth and Santiago 2008). Cronbach's $\alpha = .85$.

Coping Efficacy. The Coping Efficacy measure (originally developed for children; Sandler et al. 2000) assesses participants' satisfaction with handling past and current stressors, and their anticipated effectiveness in handling future stressors. Participants respond on a 4-point scale from "not at all good" to "very good." This measure was successfully adjusted to assess coping efficacy in adults, demonstrating construct and predictive validity in a sample of ethnically diverse adults (Wadsworth et al. 2009). Cronbach's $\alpha = .88$.

Problem Solving. The Communication Skills Test contains 32 questions about negative and positive communication patterns, answered on a 7-point Likert scale (e.g., Stanley et al. 2002). The problem solving subscale used in this study has established significant predictive validity in prior intervention studies (Stanley et al. 2001). Cronbach's $\alpha = .83$.

Coping and Involuntary Stress Responses. Participants completed the Responses to Stress Questionnaire (RSQ; Connor-Smith et al. 2000), a 57-item measure that assesses how a person copes with and responds automatically to financial worries. Primary control coping, secondary control coping, disengagement coping, and involuntary engagement and disengagement were assessed with the RSQ. Strong convergent and discriminant validity were established using low-income and minority samples (e.g., Wadsworth et al. 2004b). Connor-Smith et al. (2000) recommend calculating proportional scores for each factor (i.e., sum of scores on primary control items/sum of all items). Consistent with this recommendation, proportion scoring was utilized for all analyses. Cronbach's α 's ranged from .71 to .92.

Depression. The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff 1977) is a 20-item self-report scale that measures depressive symptoms in the general population. Participants rate how often they have felt or behaved a certain way in the past week on a 4-point Likert scale. The validity of the CES-D has been established by patterns of correlations with other measures of depression, clinician ratings, and correlations with related constructs across a wide variety of sample demographics (Radloff 1977). Mean CES-D scores were used in analyses. Cronbach's $\alpha = .91$.

Table 1 Fatherhood relationship and marriage education intervention modules

Unit	Theme	Representative activity
Welcome	Introduction of FRAME Foundations	Complete the “Marriage Today Is Like...” activity, in which they draw a representation of the state of family life today
Escalation and Time Out	Escalation as a negative communication pattern. Time-Out offered as a tool to counteract escalation	Partners discuss together how to signal that a time-out is needed, decide how long they should last, and how to calm themselves
Stress & Relaxation: Part 1	Relaxation techniques for dealing with stressful issues and situations	Participants practice progressive muscle & guided imagery exercises & receive CD for home use
Speaker Listener Technique	Speaker-listener technique taught as a tool to talk about issues without fighting	Participants practice techniques for communicating without blaming, mind-reading, accusations, and other argument-starters by sharing something exciting in their life, and then discussing a concern
Let’s Have Fun	Planning for fun family time together to help families stay connected	Participants brainstorm ideas for fun couple and family activities. Plan how to incorporate more fun activities in their routine
You, Me, & Us: Expectations	Relationship expectations and how personality traits affect communication styles & expectations	Participants complete the Primary Colors Personality Tool
Believing Is Seeing: Negative Interpretations	Negative interpretations how these make it easy to lose track of why we appreciate our partners	Participants identify a negative belief that they have about their partner and work on turning it around by giving their partner the benefit of the doubt
Invalidation & Withdrawal	Invalidating leads to withdrawal in relationships	Participants practice using XYZ statements to express both concerns and praise
By My Side: Supporting Each Other	Importance of social support	Participants share the types of social support that work best for them
We’ve Got Issues: Issues & Events	Stressful every day events can trigger issues, which cause conflict	A discussion of top argument starters is followed by explanation of the difference between issues and events
Stress & Coping: Part 2	Problem solving, cognitive restructuring, active acceptance	Participants make a list of stressful problems and then evaluate whether the problems are solvable or unsolvable. From there, they learn how to use problem solving for solvable problems, and other methods for coping with unsolvable problems
Commitment Matters	Importance of making a positive commitment	Participants complete a worksheet in which they express how they can show their love and commitment to each other in the future
Making Love	Expectations about what love should look like and how it works in relationships	Participants complete the Love Styles Worksheet, in which they identify their dominant love style
Parenting	Age-appropriate expectations, positive reinforcement, natural and age-appropriate consequences, and alternatives to corporal punishment	As a group, participants discuss logical consequences for a list of common misbehaviors that they generate as a group
Connecting With Community	Participants discuss the importance of establishing community connections	Participants do the “Exploring Our Communities” group activity and develop an action plan for building more community ties
Future Decisions	Participants have an opportunity to think about where they are headed as a family	Participants do the Relationship Tower activity and discuss the importance of Deciding versus Sliding when thinking about the future
Final Celebration	Participants celebrate making it through the workshop with discussion, food, and music	The group shares successes using the skills taught, and make suggestions for future workshops

Statistical Analyses

Assumptions of multivariate normality, homoscedasticity, and non-multicollinearity were evaluated. No variables used in this paper exhibited extreme skew or kurtosis, problems with heteroscedasticity, or low tolerance

estimates of multicollinearity. To investigate whether participants in intervention groups improved more than those in the control group over the course of the intervention, repeated measures analyses of variance were conducted with pre–post scores. Time and gender were within subjects factors and group was between subjects.

Analyses were run at the couple level, since randomization and intervention attendance happened at the couple level—hence gender is a variable within the couple. This controls for lack of independence within a couple. Due to the high proportion of families living at or below the poverty line, income was included as a covariate in all ANOVAs. Analyses were conducted twice in order to ensure robust effects. First, *efficacy* analyses were conducted to determine if the intervention was effective with intervention completers—those couples who attended at least one workshop and completed both pre-and post-intervention assessments. Second, we conducted *intent-to-treat* (ITT) analyses to ensure that our treatment effects were not *overestimated* due to differential dropout of poorer functioning couples. While several different methods for handling missing data in clinical trials have been used, imputation methods are increasingly recommended (e.g., Mazumdar et al. 1999; Nich and Carroll 2002) as they obtain results closest to the true model. Missing values were imputed using EM algorithm with PreliS (LISREL 8.52; Jöreskog and Sörbom 2002).

As detailed by Hawley (1995), the RC Index is calculated by subtracting a pretest score from a posttest score and dividing this difference score by the standard error of the difference score (S_{diff}). If the calculated score is greater than 1.96 ($p < .05$), the change is deemed large enough to be reliable. The S_{diff} is derived from the standard error of measurement (S_E) using the following formula (Hawley 1995):

$$S_{\text{diff}} = \sqrt{2(S_E)^2}$$

The formula used to calculate RC is (Jacobson and Truax 1991):

$$RC = \frac{x_2 - x_1}{S_{\text{diff}}}$$

Results

Preliminary Analysis

To explore pre-post-intervention changes on depressive symptoms, we conducted an ANOVA, which revealed a significant main effect for time but no time X group interaction, suggesting that both intervention and control participants had pre-post reductions in depression.

Primary Analyses

Analyses conducted with both the efficacy and ITT samples yielded highly similar results. Differences in power resulted in slight variations in F and p values as noted below. Thus, the efficacy analyses appear to represent a solid estimate of the intervention's efficacy and are

reported here. It should be noted that both the attending and non-attending partners were included in analyses, so analyses for couples assigned to the men's group, for example, included both the attending men and their non-attending woman partner. Hence, analyses are conducted for three intervention conditions for six groups of individuals: women in couples group, men in couples group, women in women's group, non-attending male partners in women's group, men in men's group, and non-attending female partners in men's group.

H1 Men and women in the intervention groups would show significantly greater pre-post increases in primary and secondary control coping and decreases in economic stress, disengagement coping, involuntary engagement, and involuntary disengagement than those in the control group.

First, Repeated Measures Analyses of Variance were run to examine changes in financial worries, coping efficacy, problem solving, primary control coping, secondary control coping, disengagement coping, involuntary engagement, involuntary disengagement and depression over time. The design was 4 (groups) \times 2 (time) \times 2 (gender). The interactions containing time and group (time \times group and time \times group \times gender) were examined to evaluate differential change over time by group. To test for the simple effects of the significant interactions, the ANOVAs were re-run contrasting each intervention group to only the control group. Means and results of ANOVA interaction tests are presented in Table 2.

Significant time \times group interactions were found for financial worries and disengagement coping. Follow up contrasts of financial worries revealed that the couples ($p = .03$) and women groups ($p = .05$) were different from the control group, suggesting that men and women in both the couples and women groups showed substantial reductions in financial worries (see Fig. 2). Follow up contrasts for the time \times group disengagement interaction revealed that the couples and women groups were both different from the control group (p 's = .05), suggesting women and men in the couples and women groups had substantial reductions in disengagement coping.

Significant time \times group \times gender interactions were found for problem solving [$F(3, 170) = 3.61, p = .02$] and involuntary disengagement [$F(3, 163) = 3.13, p = .03$]. These interactions reflected larger changes for intervention couples, especially for women. Follow up contrasts for the time \times gender \times group problem solving interaction revealed that the women's group was significantly different from the control group ($p < .0001$), with women in the women's group showing increased problem solving compared to controls, but with male non-attending partners showing decreased problem solving (see Fig. 3) and showing that women in the couples

Table 2 Sample means, 95% confidence intervals for pairwise comparisons, and repeated measures analysis of variance for FRAME groups

	Group																		
	Couples (n = 38)				Men's (n = 31)				Women's (n = 43)				Control (n = 38)						
	Pre	Post	t	[95% CI]	Pre	Post	t	[95% CI]	Pre	Post	t	[95% CI]	Pre	Post	t	[95% CI]	Time	Time x Group	Time x Group x Gender
																F(1,150)	F(3,150)	F(3,150)	
Fin Worry																			
Men	3.46 (1.9)	2.51 (2.0)	1.78	[-.08, 1.3]	3.12 (2.1)	3.15 (2.3)	.57	[-.38, .68]	3.09 (1.8)	2.36 (2.0)	2.51	[.14, 1.3]	3.51 (1.9)	3.27 (2.1)	.93	[-.29, .79]	10.59***	4.10**	.37, ns
Women	4.10 (1.8)	2.89 (1.8)	3.85	[.48, 1.6]	3.74 (1.9)	3.38 (1.7)	2.09	[.01, .98]	3.09 (1.5)	2.43 (1.4)	2.78	[.18, 1.2]	3.54 (1.4)	3.35 (1.7)	1.07	[-.19, .62]	$\eta^2 = .07$	$\eta^2 = .08$	$\eta^2 = .00$
Efficacy																			
Men	2.96 (.5)	3.06 (.6)	-1.13	[-.27, .07]	2.89 (.7)	3.00 (.6)	-1.07	[-.33, .10]	3.05 (.5)	3.16 (.5)	-1.73	[-.27, .02]	2.86 (.6)	3.06 (.7)	-2.38	[-.37, -.03]	11.24***	.60, ns	1.60, ns
Women	2.57 (.7)	2.99 (.6)	-5.17	[-.66, -.29]	2.78 (.7)	2.97 (.8)	-1.55	[-.42, .06]	2.68 (.7)	3.03 (.8)	-4.2	[-.56, -.20]	2.77 (.7)	2.91 (.7)	-1.68	[-.30, .03]	$\eta^2 = .07$	$\eta^2 = .01$	$\eta^2 = .03$
Prob. Solve																			
Men	3.77 (1.3)	4.38 (1.2)	-3.38	[-.98, -.24]	3.73 (1.8)	4.37 (1.4)	-2.57	[-1.1, -.13]	4.11 (1.2)	3.82 (1.3)	1.46	[-.09, .59]	3.83 (1.5)	4.18 (1.3)	-1.89	[-.70, .02]	.61, ns	2.95*	5.10**
Women	3.59 (1.3)	4.17 (1.4)	-2.3	[-1.0, -.07]	3.39 (1.4)	3.38 (1.7)	.04	[-.41, .43]	3.66 (1.5)	4.06 (1.6)	-1.89	[-.75, .02]	3.17 (1.6)	3.07 (1.5)	.83	[-.18, .43]	$\eta^2 = .00$	$\eta^2 = .06$	$\eta^2 = .09$
Primary																			
Men	.195 (.04)	.200 (.04)	-.98	[-.02, .01]	.185 (.04)	.196 (.04)	-1.69	[-.03, .00]	.186 (.04)	.180 (.03)	.66	[-.01, .01]	.175 (.04)	.186 (.04)	-2.08	[-.02, -.00]	4.40*	.74, ns	2.28†
Women	.187 (.04)	.203 (.04)	-2.46	[-.02, -.01]	.201 (.04)	.204 (.05)	-.50	[-.02, .01]	.182 (.04)	.194 (.03)	-2.46	[-.02, -.01]	.185 (.04)	.190 (.05)	-1.20	[-.01, .00]	$\eta^2 = .03$	$\eta^2 = .01$	$\eta^2 = .05$
Secondary																			
Men	.251 (.04)	.258 (.05)	-1.18	[-.02, .01]	.251 (.06)	.262 (.06)	-1.50	[-.03, .00]	.260 (.05)	.257 (.05)	.56	[-.01, .01]	.245 (.05)	.259 (.05)	-1.79	[-.03, .00]	12.53***	.46, ns	1.05, ns
Women	.244 (.04)	.261 (.04)	-2.98	[-.03, -.01]	.239 (.07)	.254 (.07)	-1.81	[-.03, .00]	.231 (.06)	.249 (.06)	-2.84	[-.03, -.01]	.239 (.06)	.256 (.05)	-3.07	[-.03, -.01]	$\eta^2 = .08$	$\eta^2 = .01$	$\eta^2 = .03$
Disengage																			
Men	.155 (.02)	.146 (.02)	2.31	[.01, .02]	.146 (.02)	.147 (.03)	-.33	[-.01, .01]	.148 (.02)	.150 (.02)	-.45	[-.01, .01]	.160 (.02)	.154 (.02)	1.48	[-.00, .01]	.44, ns	3.28*	1.15, ns
Women	.152 (.02)	.143 (.03)	1.91	[-.00, .02]	.141 (.03)	.148 (.03)	-1.2	[-.01, .00]	.147 (.03)	.143 (.02)	.90	[-.00, .01]	.149 (.03)	.154 (.03)	-1.33	[-.01, .00]	$\eta^2 = .00$	$\eta^2 = .06$	$\eta^2 = .02$

Table 2 continued

Group		Couples (n = 38)			Men's (n = 31)			Women's (n = 43)			Control (n = 38)			ANOVA main/interaction effect		
		Pre	Post	t [95% CI]	Pre	Post	t [95% CI]	Pre	Post	t [95% CI]	Pre	Post	t [95% CI]	Time	Time x Group	Time x Group x Gender
Invol. Eng	Men	.244 (.04)	.234 (.04)	1.55 [-.01, .02]	.256 (.05)	.231 (.05)	3.56 [.01, .04]	.244 (.05)	.236 (.05)	1.60 [-.00, .02]	.256 (.05)	.236 (.05)	2.74 [.01, .03]	42.45*** $\eta^2 = .23$	1.70, ns $\eta^2 = .03$.80, ns $\eta^2 = .02$
	Women	.270 (.05)	.241 (.04)	5.34 [.02, .04]	.263 (.05)	.235 (.06)	3.62 [.01, .04]	.273 (.05)	.255 (.05)	3.58 [.01, .03]	.266 (.06)	.241 (.05)	4.5 [.01, .04]			
Invol. Dis.	Men	.156 (.03)	.160 (.03)	-1.10 [-.01, .00]	.162 (.03)	.164 (.03)	-.21 [-.01, .01]	.162 (.03)	.174 (.03)	-2.85 [-.02, -.01]	.164 (.03)	.164 (.03)	-.06 [-.01, .01]	2.17, ns $\eta^2 = .02$.34, ns $\eta^2 = .01$	4.07** $\eta^2 = .08$
	Women	.148 (.02)	.152 (.03)	-1.15 [-.01, .00]	.156 (.04)	.159 (.04)	-.49 [-.01, .01]	.165 (.03)	.157 (.03)	2.02 [.01, .02]	.160 (.04)	.159 (.04)	.23 [-.01, .01]			
Depression	Men	16.8 (11.5)	16.9 (12.4)	-.39 [-6.0, 4.1]	15.7 (9.6)	14.3 (8.5)	.82 [-1.7, 3.9]	16.3 (9.3)	13.4 (9.6)	1.83 [-.29, 5.9]	16.4 (10.0)	11.8 (6.5)	3.27 [1.6, 6.9]	13.14*** $\eta^2 = .09$	1.58, ns $\eta^2 = .04$.73, ns $\eta^2 = .02$
	Women	20.5 (12.4)	16.1 (14.4)	2.46 [.79, 8.2]	18.9 (14.8)	17.8 (15.5)	.48 [-3.5, 5.6]	19.4 (10.3)	14.3 (12.5)	3.42 [2.1, 8.0]	21.9 (13.0)	16.7 (12.0)	3.09 [1.6, 7.5]			

Upper line for each pre and post variable indicates mean scores; numbers in parentheses indicate standard deviations. Fin. Worry = Financial Worries; Efficacy = Coping Efficacy; Prob. Solve = Problem Solving; Primary = Primary Control Coping; Secondary = Secondary Control Coping; Disengage. = Disengagement Coping; Invol. Eng. = Involuntary Engagement; Invol. Dis. = Involuntary Disengagement

† $p < .09$; * $p < .05$; ** $p < .01$; *** $p < .001$

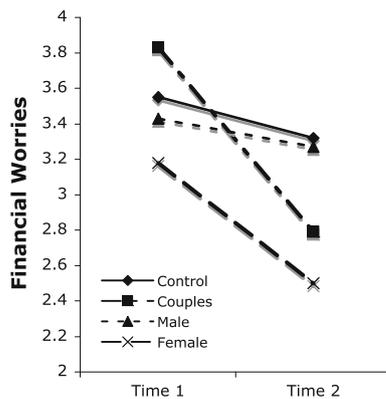


Fig. 2 Time by group interaction for financial worries for men and women in each group

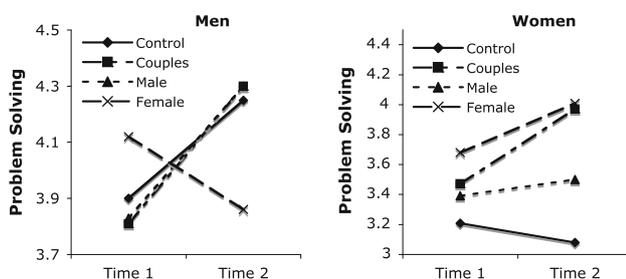


Fig. 3 Time by group by gender interaction for problem solving

group had improved problem solving but not the men ($p < .04$). Follow up analyses for the time \times gender \times group involuntary disengagement interaction revealed that the women's group was significantly different from the control group ($p = .02$), suggesting that women in the women's group showed reductions in involuntary disengagement compared to controls, while non-attending male partners in the women's group showed increases in involuntary disengagement compared to controls. For ITT analyses, the primary findings were highly similar—only time \times group for financial worries was no longer significant ($p = .20$), while the time \times group \times gender interaction for involuntary disengagement increased in magnitude ($p < .007$) and the time \times group interaction for depression reached significance with superior improvement for control couples and women in the couples and women's groups. Effect sizes (partial η^2) for significant interactions were all medium, where .01 = small, .06 = medium, .14 = large (Kittler et al. 2007).

H2 Pre-post changes on stress, coping, and involuntary responses would predict pre-post changes in depression for couples in the intervention groups.

We conducted four multiple regressions to test the relative contributions of changes in the stress and coping variables to symptom changes over time for intervention

participants and their partners, but not controls—2 models were run for men and women, reflecting an efficacy/positive coping model and an unhelpful/stress model for each. As can be seen in Table 3, pre-post changes in stress, coping, and involuntary stress responses contributed to prediction of post depression controlling for pre-intervention depression. In particular, increases in secondary control coping and decreases in financial stress and involuntary engagement stress responses predicted decreases in depressive symptoms for men, whereas increases in coping efficacy and primary control coping, and decreases in financial stress predicted decreases in depressive symptoms for women.

H3 The Reliable Change (RC) estimates would support the results of the Repeated Measures Analyses of Variance.

To examine the extent to which the changes noted above represent reliable changes, RC improvement and deterioration scores were computed and the percentage of men and women surpassing 1.96 on each was calculated. As shown in Table 4, these scores generally supported the ANOVA results and help illustrate the nature of some of the complex interaction effects we found. In many cases (e.g., financial worries, coping efficacy, problem solving, primary control coping, and disengagement) the proportion of RCI was 2–7 times higher in one or more of the intervention groups as compared to the control, especially for women. The proportions also show relatively low deterioration effects in the intervention groups, although it is concerning that male partners of women assigned to the women's group had somewhat higher deterioration effects on several variables (disengagement coping and involuntary disengagement). Additionally, the control group showed moderately large improvements on a few variables (coping efficacy, involuntary engagement).

Discussion

This study evaluated the preliminary efficacy of a new preventive psychoeducation intervention developed to reduce risks and bolster protective factors in low-income couples raising a child together. The inclusion of both mothers and fathers is an important and novel aspect of the study since the vast majority of studies do not make efforts to recruit and maintain fathers nor are most relationship interventions designed to appeal to fathers. Positive pre-post changes in several stress and stress responses were achieved with the 14-h FRAME intervention. These changes were statistically significant, clinically reliable, and accompanied by concomitant changes in symptoms of depression. Gender moderated many of these effects, with effects being especially strong for women.

Table 3 Time 2 depressive symptoms regressed on time 2 stress and stress responses controlling for time 1 symptoms, group assignment, stress, and stress responses for intervention participants

	Men (<i>n</i> = 112)			Women (<i>n</i> = 112)		
	<i>B</i> -final	SE <i>B</i>	95% CI (<i>B</i>)	<i>B</i> -final	SE <i>B</i>	95% CI (<i>B</i>)
<i>Positive Predictors Model</i>						
Step 1						
T1 Depression	.49***	.11	[.27, .71]	.58***	.10	[.38, .78]
	$R^2 = .20, F(1, 111) = 25.52***$			$R^2 = .38, F(1, 111) = 67.02***$		
Step 2						
Intervention	−2.39*	1.10	[−4.5, −.20]	−.47	1.11	[−2.6, 1.7]
T1 Problem Solving	.65	.85	[−1.03, 2.34]	.29	.91	[−1.5, 2.09]
T1 Coping Efficacy	2.75	2.03	[−1.28, 6.78]	−.17	1.84	[−3.8, 3.4]
T1 Primary Control Coping	38.21†	31.21	[−23.7, 100.2]	60.90†	31.42	[−1.4, 123.3]
T1 Secondary Control Coping	49.27	28.51	[−7.4, 105.9]	67.26*	28.28	[11.1, 123.38]
	$R^2 = .23, F(5, 106) = .67, ns$			$R^2 = .40, F(5, 106) = .42, ns$		
Step 3						
T2 Problem Solving	−1.39	.87	[−3.14, .35]	.16	.84	[−1.5, 1.8]
T2 Coping Efficacy	−1.79	2.11	[−5.9, 2.41]	−4.96*	2.19	[−9.3, −.60]
T2 Primary Control Coping	−42.21	36.51	[−114.7, 30.3]	−76.85*	34.29	[−144.9, −8.8]
T2 Secondary Control Coping	−72.60**	27.58	[−127.4, −17.8]	−41.55†	25.22	[−91.6, 8.5]
	$R^2 = .40, F(4, 102) = 6.36***$			$R^2 = .52, F(4, 102) = 6.08***$		
<i>Negative Predictors Model</i>						
Step 1						
T1 Symptoms	.43***	.11	[.22, .64]	.60***	.10	[.40, .80]
	$R^2 = .18, F(1, 111) = 20.72***$			$R^2 = .36, F(1, 111) = 57.98***$		
Step 2						
Intervention	−1.28	1.03	[−3.32, .76]	−.65	1.21	[−3.07, 1.76]
T1 Financial Stress	−.12	.60	[−1.32, 10.7]	−1.02	.71	[−2.4, .40]
T1 Disengagement Coping	11.10	43.67	[−75.7, 97.8]	−93.85*	47.41	[−187.96, .25]
T1 Involuntary Engagement	−96.73***	27.09	[−150.6, −42.9]	−50.35†	30.33	[−110.55, 9.96]
T1 Involuntary Disengagement	−65.23†	36.11	[−136.9, 6.5]	7.53	47.79	[−87.3, 102.3]
	$R^2 = .20, F(5, 106) = .64, ns$			$R^2 = .38, F(5, 106) = .69, ns$		
Step 3						
T2 Financial Stress	1.33*	.58	[.19, 2.47]	47.36*	.75	[.33, 3.3]
T2 Disengagement Coping	50.08	43.22	[−35.8, 135.9]	62.98	44.76	[−26.27, 151.1]
T2 Involuntary Engagement	103.9***	28.21	[47.8, 159.9]	51.49†	29.42	[−6.9, 109.9]
T2 Involuntary Disengagement	29.71	36.46	[−48.7, 108.2]	47.36	46.39	[−44.74, 139.4]
	$R^2 = .42, F(4, 102) = 8.41***$			$R^2 = .48, F(4, 102) = 4.92***$		

† $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$

First, the results show that it is possible to teach skills for coping with poverty-related stress to adults. Measuring skill acquisition is a crucial yet often overlooked step in program evaluation (e.g., Rohrbach et al. 2010). To identify the active ingredients in an intervention, changes in outcomes should be related to changes in specific skills taught in the intervention. In this study, pre–post changes showed reductions in financial worries, disengagement coping (e.g., avoidance, denial), and involuntary disengagement (e.g., escape, emotional numbing), and increases in primary control coping (e.g., emotional regulation-trend)

and problem solving. The changes were found most strongly for intervention attendees in general and women in particular. The Responses to Family Stress Model suggests that without intervention, coping and involuntary stress responses continue to deteriorate in the face of poverty-related stress, ultimately contributing to mental health problems (e.g., Wadsworth et al. 2010). These findings suggest that intervention can disrupt this process and contribute to positive changes in stress, coping, and stress responses. Also consistent with the Responses to Family Stress Model, these findings show that positive changes in

Table 4 Reliable change index improvement and deterioration effects

	Group							
	Couples (n = 38)		Men's (n = 31)		Women's (n = 43)		Control (n = 38)	
	RCI	RCD	RCI	RCD	RCI	RCD	RCI	RCD
Financial worries								
Men	7.7	2.6	2.9	0	4.2	2.1	6.1	0
Women	7.3	0	0	0	4.1	0	0	0
Coping efficacy								
Men	12.8	10.3	17.6	5.9	12.5	8.3	18.4	4.1
Women	39.0	2.4	23.5	5.9	32.7	6.1	18.4	8.2
Problem solving								
Men	12.8	2.6	17.6	5.9	2.1	8.3	12.2	0
Women	24.4	7.3	2.9	2.9	14.3	6.1	4.1	6.1
Primary control								
Men	10.3	2.6	5.9	0	4.2	10.4	4.1	2.0
Women	9.8	2.4	8.8	2.9	4.1	2.0	4.1	2.0
Secondary control								
Men	2.6	2.6	2.9	2.9	0	8.3	6.1	4.1
Women	12.2	0	11.8	0	12.2	4.1	4.1	2.0
Disengage. coping								
Men	15.4	2.6	2.9	14.7	8.3	12.5	6.1	2.0
Women	12.2	2.4	5.9	14.7	4.1	2.0	2.0	8.2
Invol. engagement								
Men	17.9	5.1	26.5	0	16.7	8.3	20.4	6.1
Women	34.1	2.4	38.2	0	30.0	2.0	28.6	6.1
Invol. disengagement								
Men	7.7	5.1	5.9	5.9	4.2	25.0	8.2	10.2
Women	4.9	12.2	11.8	8.8	14.3	2.0	12.2	6.1

Numbers indicate percentage of cases surpassing 1.96 on RC. RCI = Reliable Change Index-Improvement; RCD = Reliable Change Index-Deterioration

stress and coping may translate into improved mental health functioning. This study provides preliminary evidence that, despite the severity of poverty's effects, intervention with highly stressed families can produce positive change.

These findings also provide important information on how the intervention was moderated by gender and intervention group. Reductions in financial worries and disengagement coping were found across genders. However, these reductions were most notable in the couples intervention group and the women's intervention group. Thus, for men and women attendees and partners in those groups, financial worries and disengagement coping decreased. However, men attending the men's group and their female partners did not improve. Although more exploration is needed to replicate the effect and to understand why the men's group was not as effective in this respect, women's traditional role as the relationship caretaker of a family may make it difficult for men to make changes in these domains without the attendance and support of their partner

(Markman et al. 2009). Additionally, it is possible that group process is superior in groups containing women, given men's general lack of enthusiasm in participating in personal growth-oriented services (Doss et al. 2008) and women's tendency to participate more actively in psychological services (e.g., Stice et al. 2009).

Additionally, non-attending men whose partners participated in the women's group showed deterioration on several key variables, even more than did control men. The reasons for this are not completely clear, but certainly suggest that it is essential to engage men directly in relationship programming. The results suggest that a combined couples group is likely optimal for many outcomes, but that simultaneous but separate men's and women's groups may also be effective. Existing relationship and parenting services geared content- and delivery-wise to women are clearly insufficient. These findings lend additional support to calls for father- and men-inclusive parenting and relationship services (Caldwell et al. 2010).

Other intervention benefits were primarily found for women in the couples and women's groups. Women in these groups showed increased problem solving and reduced involuntary disengagement. Women may be more likely to utilize strategies such as problem solving in part because they seem to benefit more from these types of strategies (e.g., Wadsworth et al. 2004a) when compared to men. Additionally, intervention effects appear to be greater in samples with more women, suggesting that women may benefit more from intervention in general (e.g., Stice et al. 2009). Hence, women participating in the intervention may have been more invested than men in learning and practicing the skills presented. This is discouraging given the explicit emphasis on father-inclusivity in intervention content, activities, and recruitment. It is possible that having a female leader present in the men's groups may have inhibited group process in the men's groups. Leader evaluations do not reflect different patterns of ratings for male versus female leaders in any of the men's groups, though of course the men may not have been aware that they were censoring themselves in the presence of a female leader.

While short-term reductions in symptoms were not expected due to the preventative nature of the study and the community sample, we actually found that 30% of the women and 15% of men in the sample exceeded the recommended clinical cut-off on the CES-D for major depression at baseline. This is not terribly surprising, given the known risks for elevated psychopathology in this population. We found that mean levels of depressive symptoms decreased across participants at post, though not differentially by group—all groups showed reductions. One interpretation is, of course, that reduced symptoms reflect regression to the mean, which is certainly possible. It is also plausible that the positive attention and money given to control and intervention participants alike may have resulted in real short-term symptom improvement for both groups as significant symptom reduction for attention control groups is not uncommon in clinical research (e.g., Jensen et al. 2005; Stuifbergen et al. 2010).

Stress and coping variables accounted for a significant amount of variance in intervention participants' depressive symptoms, even when controlling for prior levels of both symptoms and stress and coping. Analyses showed that increased secondary control coping and decreased financial stress and involuntary engagement responses predicted reduced depressive symptoms for men, while reduced financial stress and improved coping efficacy and primary control coping were related to reductions in depressive symptoms for women. Consistent with the Responses to Family Stress Model, primary and secondary control coping strategies are related to fewer mental health problems, while stress and involuntary stress responses tend to predict

poor psychological functioning (Wadsworth et al. 2009). The Responses to Family Stress Model proposes that previous patterns of coping and involuntary stress responses predict maintenance of future responses (Santiago et al. 2010), suggesting that intervention changes in stress responses could become long term. Additional longitudinal follow-ups will be needed to evaluate long-term benefits and examine complicated models involving mediation and moderation pathways.

One surprising finding that emerged in several analyses is that the control group members improved almost as much as intervention members on some variables. This could, of course, reflect regression to the mean for both groups on these variables. It is possible that effects may emerge over time as utilization of skills becomes more entrenched for intervention couples. It is also possible that simply participating in our research project led to positive short-term change for control participants. This is certainly feasible given that control families earned \$200 for completing baseline and post-intervention assessments and had an opportunity to spend time with their spouse away from children with babysitting paid for by the research project. Analyses of longitudinal data will be able to detect the duration of positive effects for control families and see if intervention couples' ability to use new skills eventually enables them to see increased improvement relative to controls (Whittingham et al. 2009).

Limitations

These findings need to be interpreted with the following limitations of the study in mind. First, while a strength of the study is our focus on low income populations, the generalization of these findings to higher income families and families under less stress needs to be done with appropriate caution. Similarly, the sample's generalizability is limited to low-income households with two resident parental figures. However, since we included cohabiting couples as well as married couples, this broadens the generalizability of the results somewhat though the results cannot be generalized to single parent households. Second, the results presented are pre–post findings and, as mentioned earlier, the study is longitudinal. Thus, the pre–post findings may not hold over time, though of course they may strengthen and other findings may emerge as well. Third, the study focuses exclusively on the use of self-report measures and, hence, there is a possibility of method variance problems. Differential changes in intervention participants in comparison to control participants lend confidence to the interpretation that there is more than method variance operating here. However, future research should include behavioral and observational measures of key constructs. Such extensions are planned in our own

future studies. Finally, given the interest in testing individual versus couple groups, it was not possible to have participants blind to condition. Hence demand characteristics could have contributed to some of the effects reported here.

Implications and Future Research

Despite these limitations, this study, which builds on a very strong empirical foundation (e.g., Conger et al. 2002; Mistry et al. 2002), represents an innovative and important next step in the area of prevention for low-income families. We have developed an intervention that is acceptable to and appears to be helpful for ethnically diverse couples struggling to make ends meet. It is important to keep in mind that the intervention for stress and coping was only a portion of the intervention, which suggests that other portions of the intervention such as communication skills may also have contributed to these outcomes. As the study continues we will be able to assess the direct effects of our interventions on mental health outcomes and to test the mediation model that mental health outcome is mediated by changes in stress and coping. We will be able to test the hypothesis that the control couples who do not receive the intervention will show increases in stress and decreases in coping, as suggested by the Responses to Family Stress Model, in the face of continuing poverty-related and other stressors. Further, since the goals of prevention are by definition long-term, we anticipate the emergence of additional prevention effects in terms of mental health and other relevant outcomes including parenting, child outcomes, income, finding and maintaining a job, and marital quality (e.g., White et al. 2007).

In summary, this study, guided by the Family Stress Model, showed that a short-term intervention focused on strengthening couples' relationships and teaching coping skills improved coping and reduced stress in a sample of low income parents. Importantly, changes in coping skills were associated with changes in mental health functioning. Longer term follow-up of the couples is underway and will enable stronger tests of the effects on the intervention as well as tests of how coping skills may mediate the impact of stress on mental health. However, these efficacy results suggest that short-term effects of the intervention are generally positive and warrant replication.

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