Outcomes of a Couple Relationship Education Program to Promote Relationship Stability and Marriage among Fragile Families

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Abstract

Couple relationship education (CRE) has been proposed as one means to help fragile families stabilize their relationships. The current research is one of the first studies to look at the outcomes of a CRE program with fragile families in terms of couple stability, marriage, and relationship satisfaction. Data were from the Minnesota Family Formation Project (FFP), a federal and state funded Community Healthy Marriage Initiative working with fragile family couples (n=96) in the Twin Cities metropolitan area. A cohort control group quasi-experimental research design was used with matched control groups from the Fragile Family and Child Well-being Study and the Building Strong Families Study. The intervention consisted of in-home education and support, group educational events, and social service referrals. Findings showed that couples had the same rate of couple stability as the control groups but an increased rate of marriage. Relationship satisfaction for couples who stayed together remained stable, as hypothesized, instead of the normative decline found in the research literature. These findings suggest CRE can be useful to fragile families who are considering marriage in helping them achieve that goal but that some fragile families may either need more than CRE to help them stabilize their relationship or they may be better off separating.
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Couple relationship education in general has proved efficacious in helping couples in mainstream populations improve their communication and relationships (Fawcett, Hawkins, Blanchard, & Carroll, 2010; Carroll & Doherty, 2003). Further, couple relationship education has been shown to help new parent couples avoid the decline in relationship satisfaction that generally follows the birth of a child (Petch & Halford, 2008). However, little research has been conducted to show whether couple relationship education is effective with low income unmarried couples with young children—or so-called fragile families (Amato & Maynard, 2007).

Fragile families are a population of considerable interest. Childbearing to single parents has increased significantly in the U.S. during the past four decades (Amato & Maynard, 2007). Nearly four in ten U.S. births in 2007 were to a single mother (Ventura, 2009) and, on average, children and adults have better outcomes in terms of education, economic well being, and physical and mental health within stable, married two-parent families (Wilcox et al., 2005). Research in the past decade has found that most unmarried couples having a child say they want to stay together and have very positive views toward marriage; however, relatively few remain together and marry (Gibson-Davis, Edin, & McLanahan, 2005; Lichter, Batson, & Brown, 2004). Federal policy and funding have been created to help fragile families who desire couple stability and marriage to achieve these goals by offering couple relationship education through the Healthy Marriage Initiative (Dion, 2005).

The federal Healthy Marriage Initiative has included two sets of projects with varying goals and constraints aimed at learning how to strengthen relationships in fragile families: Building Strong Families (BSF) and the Community Healthy Marriage Initiative (CHMI; Dion, 2005). The BSF used randomly selected intervention and control groups in eight sites and offered a low intensity, traditional class/curriculum-based intervention.
Initial BSF follow-up data have been released (Wood, McConnell, Moore, Clarkwest, & Hsueh, 2010). The CHMI projects targeted specific communities and were intended to encourage a wide range of educational interventions, evaluated with non-experimental methods, to assess which kinds of programs would be most promising to fund in the future (Dion, 2005).

The current study focused on the outcomes of the Minnesota Family Formation Project (FFP), a CHMI intervention that featured in-home education, community support and the use of community engagement principles from the Families and Democracy model (Doherty, Mendenhall, & Berge, 2010). It was designed as a quasi-experimental study to develop and evaluate a more intensive educational intervention than other classroom-based CHMI programs using pre- and post-intervention assessments based on the national Fragile Families and Child Wellbeing Study assessment (Reichman, Teitler, Garfinkel, & McLanahan, 2001). Like other CHMI projects, the Family Formation Project focused on the goals of couple stability and marriage for those who desired that goal.

The objectives of this study are twofold: first, to assess the effects of the Family Formation Project (FFP) on couple stability and marriage using a quasi-experimental method employing matched city comparisons and, second, to assess the relationship satisfaction of couples who stayed together. The hypotheses are: 1) that the FFP will promote couple relationship stability and marriage, and 2) that couples who stay together will not experience the decrease in relationship satisfaction common among new parents.
Literature Review

Couple Relationships in Fragile Families

The incidence of fragile families has increased dramatically in the U.S. during the past four decades (Amato & Maynard, 2007). In some sub-populations the incidence is higher—for instance, half of births to Hispanic females and 70% of births to African American females occur to unmarried parents (McLanahan, Garfinkel, Mincy, & Donahue, 2010). To gain more understanding about this growing demographic, the Fragile Families and Child Wellbeing Study (FFCWS) was formed as a longitudinal birth-cohort study representative of hospital births in large U.S. cities (Reichman, Teitler, Garfinkel, & McLanahan, 2001).

The FFCWS used stratified random sampling, selecting 20 of the 77 U.S. cities with populations of 200,000 or more. The stratification was based on categories of state welfare generosity, the local labor market, and stringency of child support enforcement policies. Hospitals were sampled from within the cities and births were sampled from within the hospitals. In all, 75 hospitals and 4700 births were sampled. The birth sample included births to unmarried (3600) and married (1100) mothers and as many fathers of the newborns as possible (about 75% of fathers participated in Wave 1 data collection). Unmarried mothers were oversampled to obtain a richer picture of fragile families. Data were collected just after the birth of the child and again at one year, three years, and five years post-birth. Data collected included information on the use of health care, the parental relationship, marital attitudes, expectations of father’s rights and responsibilities, parental health, social support, community resources, education, employment, and income. Follow-up data focused on the parental relationship, childwell-being, and use of welfare, child support, child care, and health care resources.
Data from the FFCWS show that couples in fragile families generally have high expectations for staying together and eventually marrying as well as positive orientations toward marriage (McLanahan & Beck, 2010). Overall, 72% of the mothers and 90% of the fathers said they had a 50/50 or better chance of marrying their current partner. Those couples who were cohabiting had higher expectations for marriage than those who were not cohabiting, with 92% of cohabiting mothers and 95% of cohabiting fathers saying they had a 50/50 or better chance of marrying compared to 52% and 72% of non-cohabiting mothers and fathers, respectively. Other quantitative research with single mothers cohabiting with the father of their children also has shown high expectations of marriage, with 75% of the mothers saying they expected to marry (Lichter, Batson, & Brown, 2004). Likewise, qualitative research with low-income single mothers has shown that most of the mothers aspired to marriage (Edin, 2000) and that marriage was highly respected (Gibson-Davis, Edin, & McLanahan, 2005).

Despite the high regard and expectations for marriage among fragile families, most do not marry. At the five-year follow up for the FFCWS, more than 60% of couples were no longer romantically involved (McLanahan & Beck, 2010) and only 15% were married (McLanahan, 2009). This high rate of relationship dissolution often leaves the children of these relationships in disadvantaged situations such as poverty, diminished relationships with their fathers and greater instability in their living arrangements (McLanahan, 2009). McLanahan and Beck (2010) found that 27% of the fathers who broke up with their child’s mother provided formal child support, 33% provided informal cash support, and 45% provided in-kind support (e.g., purchasing needed/desired items). Further, only 51% of these fathers maintained regular contact (monthly) with the child at age five, 27% of the mothers had at least one new partner within five years of the child’s birth and 21% of the mothers had another child by a new partner. Concern for
the children from these relationships has led researchers to identify barriers to couple stability and marriage among fragile families and factors that help facilitate stability and marriage in fragile family couples who do marry.

Although expectations for marriage are initially high, fragile families have economic standards they want to meet before marrying such as stable income and home ownership akin to what might be seen among the middle class (Edin & Reed, 2005). Nearly three-quarters of the couples in one study saw their current low-income financial situation as a barrier to marriage (Gibson-Davis, Edin, & McLanahan, 2005), and low educational attainment and unstable employment for both the mothers and fathers tend to decrease relationship stability and marriage among fragile families (McLanahan & Beck, 2010; Edin & Reed, 2005; Carlson, McLanahan, & England, 2004; Osborne, 2005). In qualitative work with single mothers, the mothers maintained that they would not marry if they had to rely on a man’s earnings; the mothers wanted to be economically self-reliant prior to marriage (Edin & Kefalas, 2005).

In addition to economic barriers, fragile families also face social barriers to relationship stability and marriage. Carlson, McLanahan, and England (2004) found multiple social barriers at the one-year follow-up in the FFCWS data. Mothers who reported a general distrust of males were less likely to maintain relationship stability and less likely to marry (father reports of distrust of females had no effect on relationship stability or marriage). Mothers who reported that the father abused alcohol and drugs were less likely to maintain relationship stability, although the result on marriage was not significant (reports of the mothers’ alcohol and drug abuse were not significant). If a father had children by a previous partner, the couple was less likely to marry and less likely to stay together (a mother having a child by a previous partner did not affect stability or marriage). Ethnicity also played a part in couple stability and marriage, with
blacks being less likely to marry than whites or Hispanics and blacks less likely than Hispanics to maintain the couple relationship.

Qualitative research by Edin and Kefalas (2005) supported the quantitative findings on social barriers of gender distrust and substance abuse and added chronic intimate partner violence, infidelity, and male involvement in crime as deterrents to marriage for low-income single mothers. Finally, and paradoxically, a high regard for the idea of marriage along with a fear of divorce has been found to be a barrier to marriage. Couples did not want to disgrace an institution they esteemed by getting a divorce, so they postponed marriage, waiting until they could have high enough confidence in their relationship to wed (Edin & Reed, 2005; Edin & Kefalas, 2005; Gibson-Davis, Edin, & McLanahan, 2005).

Factors found to facilitate couple stability and marriage among fragile families include more than reversing the direction of barriers, according to a report by Carlson, McLanahan and England (2004). Positive attitudes toward marriage predicted marriage. Mothers who attended church had a greater likelihood of marriage (no effect on marriage was seen for fathers’ church attendance). Couples who had more than one child together were more likely to maintain relationship stability. Greater supportiveness felt from the partner (measured by frequency of expressions of love and encouragement) increased chances for stable cohabitation and marriage. Other studies have also shown that increasing the quality of the relationship tends to increase the chances for relationship stability and marriage (Edin & Reed, 2005).

*Couple Relationship Education and Fragile Families*

Given that parents staying together to raise their children generally results in better outcomes for the children and that most fragile family parents say they want to stay together and desire marriage, policy makers have sought means whereby fragile
families can be strengthened in their ability to stay together. One among several such proposed means is Couple Relationship Education (CRE; Dion, 2005). CRE historically has been education presented in a structured format seeking to help couples increase their knowledge about relationships, gain skills for relationship maintenance and improvement, and develop attitudes which foster healthy relationship functioning (Halford, Markman, Kline, & Stanley, 2003).

Although no single type of intervention could address every identified barrier to and facilitative factors of couple stability and marriage among fragile families, improvements in the areas CRE seeks to address have been correlated with improved couple stability and marriage and can have indirect effects by influencing other barriers and facilitative factors. For instance, Lerman (2010) suggests that CRE programs could be one link in helping fragile family fathers raise their earnings by strengthening the mother-father relationship and giving them communication skills that can be useful in employment as well as the couple relationship. Best practices in CRE emerging in the literature include tailoring the content to the needs of the couple and integrating CRE with other existing services (Ooms & Wilson, 2004; Halford, 2004; Halford, Markman, Kline, & Stanley, 2003). For example, specific issues such as stepfamily challenges and relationship violence could be addressed as needed, and couples can be connected to services that address employment readiness, education, mental health and substance abuse.

CRE has proved efficacious in helping couples in mainstream populations improve their relationships (Fawcett, Hawkins, Blanchard, & Carroll, 2010; Carroll & Doherty, 2003). Until recently, however, the efficacy of CRE with non-mainstream couples had not been studied (Ooms & Wilson, 2004). Researchers have called for CRE to be implemented and researched with low-income, minority, and fragile family couples,
and federal money has been set aside for such projects (Dion, 2005). Two recent publications partially address these calls: a meta-analysis of CRE among low-income populations (some of whom are fragile families), and a research report of a project working directly with fragile families.

The meta-analysis found that CRE produces small to moderate effects (Hawkins & Fackrell, 2010) in low income couples. The authors obtained 12 studies from journals, published project reports, and unpublished results. Four of these 12 studies were funded by federal money aimed at fragile families. The meta-analysis showed that CRE positively impacted couples’ relationship quality, commitment, and communication skills. This report is limited in its usefulness in looking at CRE among fragile families due to a) the preliminary nature of the studies obtained for the review, b) the fact that it did not focus specifically on fragile families, and c) outcomes did not include relationship stability or transition to marriage. However, the meta-analysis does provide support for continued efforts in assessing the impact of CRE with fragile families.

The Building Strong Families project (BSF) was a federally funded Healthy Marriage Initiative program that delivered CRE to fragile families (Wood, McConnell, Moore, Clarkwest, & Hsueh, 2010). The BSF project was implemented in eight sites in different U.S. cities and state counties. Each implementation was handled by a location organization that volunteered to be part of the study. The eight locations were Allen, Marion, and Lake Counties in IN; Atlanta, GA; Baltimore, MD; Baton Rouge, LA; Broward and Orange counties in FL; Houston, TX; Oklahoma City, OK; and, San Angelo, TX. In each site a randomized controlled design was used with equal numbers of couples being assigned to the control and intervention groups. Each site selected one of three CRE skills-based curricula, which were delivered in classroom settings. Each site operated independently and provided couples with assessments and referrals to other
local services (child care, education, employment, housing, legal, and mental health). Individual support to couples was offered by way of a “family coordinator” whose tasks varied by location, but generally involved support calls or visits to couples (or individuals in the couple) to encourage participation in the program, reinforce the relationship skills covered in classes, and provide emotional support. None of the sites required both members of the couple to be present for the classes. Control group participants received no intervention through the BSF program.

The BSF assessments looked at outcome measures in five areas: relationship status, relationship quality, avoidance of intimate partner violence, co-parenting, and father involvement. Relationship status was measured three different ways: was the couple still romantically involved? was the couple living together (married or unmarried)? and, was the couple married? Evaluation was to be done at 15 months and three years.

The preliminary BSF results at 15 months found no overall effect for the program on any of the outcomes, including couple stability and marriage—the intervention and control groups were statistically even (Wood, McConnell, Moore, Clarkwest, & Hsueh, 2010). Despite this finding, there were positive effects among two subgroups: African American couples as a group from all sites and the participants at the Oklahoma City site; and there were negative effects for the participants at the Baltimore site.

For African American couples (where both female and male were African American), relationship quality was higher in four of five measures of the construct, co-parenting quality increased and couple violence decreased, but there was no difference on measures of relationship status. For couples at the Oklahoma City site, relationship stability was higher (compared to the control group), and relationship quality (on all five measures), co-parenting quality and father involvement were all higher. At the Baltimore
site couples in the intervention group fared worse than the control group in terms of relationship stability, relationship quality (one of the five measures was lower, the others neutral), intimate partner violence, co-parenting and father involvement.

The authors of the BSF report argued that more follow up exploration is necessary (Wood, McConnell, Moore, Clarkwest, & Hsueh, 2010) to determine why just one site showed gains from the intervention. The Oklahoma City site, which showed positive effects, was one of two sites (Atlanta being the other) where the program infrastructure was built solely for the implementation of CRE for the BSF study. The other six sites added CRE to services they were already providing. The Oklahoma City site was the only one to use the Becoming Parents curriculum, which was an adaptation of the PREP program for new parents (Cowan, Cowan & Knox, 2010). PREP has been shown to be effective in helping couples improve in relationship skills and stability (Stanley, Markman, St. Peters, & Leber, 1995; Stanley, Allen, Markman, Rhoades, & Prentice, 2010). Finally, the Oklahoma City site had a higher rate of couple attendance at CRE workshops: 45% of the enrollees finished 80% or more of the curriculum. At all other sites only 9% of enrollees finished 80% or more of the curriculum.

The BSF study has a rigorous design—a randomized controlled trial—but a number of factors with the design and implementation of the intervention give rise to questions as to whether the intervention was a good test of doing CRE with fragile families. First, there was no overall coordination of efforts among the sites. Three different curricula were used, the use of family coordinators varied by site, and for most of the sites CRE was an add-on service. Second, the low rate of attendance at most sites raises the question as to whether the couples really received enough dosage of the intervention to be helpful. Third, despite the intervention being billed as a couple-based intervention, both partners attending together was not a requirement for participation.
Research Design and Method

Family Formation Project Design

The Family Formation Project was a joint venture between the University of Minnesota’s Department of Family Social Science and the Minnesota Department of Human Services, Child Support Enforcement Division. The FFP was funded through the federal Healthy Marriage Initiative (Dion, 2005) and matching State dollars (via a surcharge on marriage license fees). The FFP used a community engagement approach called the Families and Democracy Model (Doherty, Mendenhall, & Berge, 2010) in which key stakeholders were consulted at every step of the project and the project adapted continually based on community partners’ feedback and experience with participant couples. This approach allowed stakeholders and participant couples to feel joint ownership of the project. Further, this approach allowed the couples themselves, in consultation with a relationship coach, to help drive the intervention based on what they believed they needed to reach their goals in terms of couple stability and marriage. Tailoring couple relationship education to meet the needs of the couples is a CRE best practice (Halford, Markman, Kline, & Stanley, 2003). In this flexible intervention approach, the process used was the same for each couple while the exact content and services delivered to each couple varied according to need.

Couples were recruited through social service agencies, local health clinics and by direct mailing to unmarried couples who had recently established paternity. The State partners to the FFP sent out the direct mailing on behalf of the FFP as they maintained a database of couples who had signed recognition of parenthood forms. Because of the variety of recruitment methods and because the FFP was not given access by the State to private data of the couples’ receiving the mailings, the project could not determine any differences between couples who enrolled in the project and
those who did not. To be eligible, couples had to be unmarried, have a child together (couples with multiple children or with children from previous relationships were not excluded), and be interested in staying together to raise their child(ren) with marriage as a potential consideration in the future. (Only couples who said they were not interested in marriage at all were excluded from program participation; the FFP was not promoting marriage where it was not desired.) Couples met with project staff before enrolling in the project to make sure both members understood the project and agreed to participate. Couples who enrolled completed an intake assessment, engaged in the CRE intervention over the course of one year, and then completed a second assessment.

The FFP was concerned about working with couples who had a history of intimate partner violence (IPV; Wilde & Doherty, 2011). A protocol to deal with potential IPV was developed in partnership with a local domestic violence program and national consultants. Couples who reported IPV during the intake assessment were reviewed by a project Domestic Violence Team comprised of the principal investigator, the project coordinator, and a staff member trained and experienced in working with IPV. Couples who were judged to be at risk because of serious or ongoing IPV or where either member of the couple felt unsafe were referred to the partnering domestic violence treatment center. Couples who accepted the referral, worked with the treatment center, and were later determined by a counselor at the treatment center to be safe to work with in a CRE setting were then accepted into the project. A total of nine couples were screened out due to serious IPV risk. One of these couples worked through the above protocol and subsequently entered the project. Couples who had experienced situational couple violence (Johnson, 1995; Johnson & Leone, 2005), but where neither felt there was any current danger in the relationship were accepted into the project without referral to the domestic violence center; however, the fact of their previous
violence was made one of the issues dealt with during the program and they were followed up with regarding their violence by their relationship coach.

The primary intervention was the assignment of a relationship coach, termed a Family Formation Coordinator (FFC), to each couple who worked in-home with the couple. FFCs had been trained in working with couples before being hired as staff members. All but one were trained as marriage and family therapists; the one non-therapist had been trained in coaching couples communication and had significant teaching experience. During the course of the project, the FFCs received training in administering the PREPARE premarital inventory (Olson, 2006). All of the coordinators were screened in an interview process before being hired to be sure they were confident, outgoing, able to express themselves clearly, and were able to demonstrate good relationship-building skills. They needed to show a high degree of commitment and caring for the participant couples. All FFCs were doctoral students in the Department of Family Social Science at the University of Minnesota.

FFCs administered the intake and follow-up assessments. They served as active consultants to the couple relationship, helping the couple set goals and then teaching relationship skills and connecting couples to other community resources through a project social worker in order to meet the goals of the couple. FFCs averaged 11 visits per couple totaling an average of 17.1 hours spent in face to face interaction with each couple, using a variety of assessment and relationship-building tools from PREPARE (Olson, 2006), the PREP program (Markman, Stanley & Blumberg, 1994), Gottman’s work (1999), Fowers’ work (2000), and basic family budgeting.

In addition to the in-home intervention work, there was a series of 11 optional group education workshops that were formed in response to the need many of the couples expressed to get to know and learn from other couples in their situation. These
workshops, called “Couples Connections,” were the brainchild of a group of four participant couples who had been brought together to help give shape to the future of the FFP and are an illustration of the organic nature of the project. Each workshop had a topic of the night that was chosen by the participant couples. Topics included a wide range of issues from money matters to physical intimacy and from parenting together to commitment. A short educational talk on the topic was given by the project principal investigator, and the attending couples were then engaged in small group and couple exercises to provide further insight. Married mentor couples were present as full participants so the couples could interact with exemplar couples. Time was also given for socialization, and a light meal and child care were provided. In all, 30% of all couples participating in the FFP attended at least once. Each attending couple attended an average of three Couples Connections; 67% of couples who attended one workshop returned for more.

The Family Formation Project also built in a protocol for working with couples who decided to break up. When a couple broke up, their FFC met with each member of the couple separately to help each individual connect to community resources and to encourage and coach in positive co-parenting strategies. The FFP considered it a positive outcome if both parents remained an active, positive part of their child’s life despite the dissolution of the parental romantic relationship.

Outcomes Study Design

The FFP’s focus on a community approach to building the intervention called for quasi-experimental methods to study the effectiveness of the program (Dion, 2005). Quasi-experimental methods provide an opportunity to test for generalizable inferences given that appropriate theory is built between the proposed cause and the effect and that confounding alternative hypotheses are dealt with (Cordray, 1986). One method of
quasi-experimental research in community interventions is to use a comparison group drawn from a similar community (Skara & Sussman, 2003). The use of multiple comparison groups, even from secondary data, can be used to help strengthen the quasi-experimental design, but the use of such depends on the comparability of the samples (Shaddish, Cook, & Campbell, 2002).

The Family Formation Project’s design allows for a quasi-experimental method utilizing the Fragile Families Study sample and the Building Strong Families control group in a cohort control group quasi-experimental research design (Shadish, Cook, & Campbell, 2002). This design is represented in Figure 1, using notation in the tradition of Campbell and Stanley (1963) and is a variation of their “nonequivalent control group” design. Each “O_t” stands for an observation point at time “t.” The sequential numbers represent the temporal ordering of the observation times. The “X” represents an intervention. The fact that observations are in three sets (on different lines) represents that the observations were made on three separate groups. The dashed line separating the groups indicates differences in sampling. Observations 1 and 2 are the Fragile Families and Child Well-being Study (FFCWS) initial and one-year follow-up data collection time points. Observations 3 and 5 are the Family Formation Project (FFP) intake assessment and one-year follow-up with the intervention intervening. Observations 4 and 6 are the Building Strong Families (BSF) control group intake and 15-month follow-up points. The temporal ordering of the three studies shows that the FFCWS began and concluded (the one-year follow-up) prior to the beginning of the FFP and the BSF. The BSF project began shortly after the FFP and designed follow-up data to be collected at 15 months instead of 12 months as the FFP and FFCWS had designed.
Each of these control groups has strengths and limitations for comparison with the FFP. For instance, FFCWS subjects and FFP participants answered many of the same questions about relationships, giving the strength of comparable measures. However, FFCWS subjects were not volunteering for a couple relationship education (CRE) intervention. BSF study control group participants, on the other hand, did volunteer for a CRE intervention and were randomly assigned to the control group, which received no intervention from the BSF program. However, FFP participants were not administered the same assessments as the BSF participants because BSF results were not necessarily expected to be available and thus it was not thought of as a possible control group when the Family Formation Project began. Additionally, raw data from the BSF are not available, thus only published percentages for outcome variables can be used in this comparison.

To increase the similarity of the two national control groups to the sample in the current study, the method of categorizing cities used by the FFCWS (Reichman, Teitler, Garfinkel, & McLanahan, 2001) was used to determine which of the FFCWS cities and BSF sites were closest to the FFP service area. This categorization was based on state welfare generosity (high, moderate, low), the local labor market (strong, average, weak), and stringency of child support enforcement policies (strict, moderate, lenient) using information published by the U.S. government. The same governmental sources were consulted for the current study. The service area for the FFP was categorized as “high”
for welfare generosity, “strong” for labor market, and “strict” for child support enforcement stringency. The best match from the FFCWS was Milwaukee, WI, which was also “high” in welfare generosity, “strong” for labor market, and “strict” for child support enforcement stringency. Boston, MA, was also in the same category set, but fewer births were sampled there and Milwaukee was closer geographically.

None of the BSF sites was a perfect match with the FFP service area. The “distance” each site was from the FFP in the categorization scheme was calculated by assigning a difference of “1” if the site was one designation away (e.g., moderate instead of high for welfare generosity) and “2” if the site was two designations away (e.g., weak instead of strong for labor market strength). The total distance for the three categorization areas was then summed. This resulted in a four-way tie—four BSF sites were each a distance of “3” away from the FFP site (Baltimore, MD; Orange and Broward Co., FL; Allen, Marion, and Lake Co., IN; and Oklahoma City, OK). To break this tie, a secondary method for determining the best match, not employed by the FFCWS, was then used. This method was to average the numbers used in determining the designation for each category: a) the employment rate, b) the dollar value of the average monthly welfare payment divided by the median monthly rent in the city or counties weighted by number of rental units in the city/counties, and c) the average for three measures of child support enforcement (see data for each of these in Appendix A). By this method the FFP service area had an average of 0.851. The closest BSF site was Baltimore, MD with an average of 0.739; the next closest was 0.706. Thus, the BSF Baltimore control group participants were chosen as the control group match for comparison with the FFP.
Participants

Ninety-six couples were recruited for participation in the Family Formation Project. All couples indicated at recruitment that they wanted to stay together, although some were in relationship trouble: 87.5% said they were romantically involved on a steady basis, 10.4% said they were in an “on again, off again” relationship, 1% said they were just friends, and 1% said they hardly ever talked to each other. Participant couples represented multiple ethnic groups and there was a wide spread in age, relationship length, education level and income level. Table 1 contains demographic information for the mothers and fathers participating in the FFP.

More than a third of the FFP couples (37.5%) were biracial (each member reported being of differing race than the other), 32.3% were Caucasian, 22.9% were African American, 3.1% were Native American, 2.1% were Hispanic, and in 2.1% both the male and female had marked “Other” as their race.

Most of the couples were in poverty—61.4% of the mothers and 59.4% of the fathers earned less than $20,000 per year. Only 12.5% of the mothers and 22.9% of the fathers earned more than $35,000 per year. Just over half (53.1%) of the mothers and a third (35.4%) of the fathers received some type of government welfare. A sizeable percentage of fathers (21.8%) had not finished high school, along with 12.5% of mothers. More than half of mothers, 54.2%, and just less than half (45.8%) of fathers had attended some post-high school training.

The mothers’ average age was 26.1 years, ranging from 18 to 41 years. The fathers’ average age was 27.8 years, ranging from 19 to 51 years. The males and females of the couples generally knew each other for multiple years with the average at 3.3 years before having a pregnancy together. Several couples had multiple children together: 15 couples had two children, two couples reported three children, and two
couples reported having four children together. Twenty-nine mothers reported having had children from previous partners (range from 1 to 6 children with previous partners). Thirty-one fathers reported having had children from previous partners (range from 1 to 13 children with previous partners).
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<th>Table 1: Family Formation Project Participant Demographics</th>
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<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Average Age (years)</td>
</tr>
<tr>
<td>26.1 (s.d.=5.2)</td>
</tr>
<tr>
<td>Years Known Each Other Before</td>
</tr>
<tr>
<td>Pregnancy</td>
</tr>
<tr>
<td>Average Number of Children for Current Relationship</td>
</tr>
<tr>
<td>Race</td>
</tr>
<tr>
<td>White</td>
</tr>
<tr>
<td>Black</td>
</tr>
<tr>
<td>Native American</td>
</tr>
<tr>
<td>Other</td>
</tr>
<tr>
<td>Educational Attainment</td>
</tr>
<tr>
<td>&lt; High School</td>
</tr>
<tr>
<td>At Least Some College (including community/technical college)</td>
</tr>
<tr>
<td>Earned Income</td>
</tr>
<tr>
<td>0—did no regular work for income</td>
</tr>
<tr>
<td>&lt; $10,000</td>
</tr>
<tr>
<td>$10,000-$19,999</td>
</tr>
<tr>
<td>$20,000-$34,999</td>
</tr>
<tr>
<td>≥$35,000</td>
</tr>
<tr>
<td>Ave # Children with Previous Partners</td>
</tr>
</tbody>
</table>
Measures

Outcome variables. Outcome variables for Relationship Stability and Married were assessed at the one year follow-up using a single item: “What is your current relationship with your partner from our previous survey?” FFP participants were given these options: married, engaged, divorced/separated, romantically involved, just friends or not in any kind of relationship. This is the same item used in the FFCWS study except for the addition of the category “engaged.” For the present, study Relationship Stability was a dichotomous measure; respondents were coded (1) still together if they indicated they were married, engaged, or romantically involved; or (0) broken up if they indicated they were divorced/separated, just friends, or not in any kind of relationship at follow-up. The variable Married was also a dichotomous measure; respondents were coded as (1) married if they indicated they were married, or (0) not married if they indicated they were engaged, divorced/separated, romantically involved, just friends, or not in any kind of relationship at follow-up.

Additional outcome information was available from Family Formation Coordinators who were in ongoing contact with participants and learned of couples’ relationship transitions after the twelve-month follow-up and even when some couples did not participate in the follow-up assessment because they moved or the project lost contact with them for periods of time. Because these couples had participated and received an intervention, their relationship status as reported by the Family Formation Coordinator was counted for the outcome variables of Relationship Stability (still together or broken up) and Married/Not married. Transitions known to the FFP occurring shortly after the follow-up were also included in the outcome data. In other words, the last known data available on relationship outcomes were used. For instance, one couple
broke up two months before the follow-up questionnaire was to be administered, both moved and became un-contactable and neither completed the follow-up questionnaire. This couple was counted as “broken up.” Another couple completed the follow-up questionnaire while consulting with their Family Formation Coordinator about their wedding arrangements—they married a month later. This couple was counted as “married.”

The Building Strong Families outcome measures of Relationship Stability and Married were similar to those of the FFCWS and the FFP. Respondents reported whether they were “still romantically involved” and whether they were married. For the present study, BSF control group respondents who indicated being still romantically involved were coded as (1) still together for Relationship Stability; those who indicated being not romantically involved anymore were coded (0) for broken up. BSF control group respondents who indicated they were married were coded (1) for married, otherwise they were coded (0) for not married.

One outcome variable was used in assessing the health of the relationships for FFP couples: Relationship Satisfaction. This current research focuses on whether FFP participants experienced the normative decline in relationship satisfaction after the birth of their child, thus only FFP data were used for the Relationship Satisfaction assessment. Relationship Satisfaction for FFP participants was measured using the DAS Dyadic Satisfaction Subscale, a widely used measurement of adjustment for individuals in a couple relationship (Spanier, 1976). This scale was administered in both intake and follow-up assessments to both mothers and fathers. The Dyadic Adjustment Scale--Satisfaction Subscale ranges from 0 to 50, with higher numbers indicating higher relationship satisfaction. Based on scale norms, the average score for stable married persons is 40 and for recently divorced persons, 22 (Spanier & Filsinger, 1983).
Assessing threats to validity. Because the intervention and control groups were separate cohorts and were not assigned to their respective groups randomly in the same study, selection threats exist to the validity of potential claims that the FFP assisted couples in staying together, marrying, or maintaining a healthy relationship (Trochim, 2006). Potential confounding outcome predictors must be explicitly examined (Shadish, Cook, & Campbell, 2002; Cordray, 1986; Campbell & Stanley, 1963). The nonequivalent control group design limits this examination to an analysis of means rather than slope and curve comparisons (Caporaso, 1973). Use of the BSF control group will help address the selection threat to validity stemming from the fact that the FFCWS participants were recruited for a survey study and not an intervention study.

Selection threats to validity due to other variables that may account for relationship stability and marriage among FFP participants can be addressed by comparing means for variables that have shown predictive of relationship stability and marriage among fragile families to see if differences exist between the FFP participants (intervention) and FFCWS (control) respondents. Comparisons on these other predictive measures will not be made between the FFP and BSF due to differences in measurement and having access only to published BSF outcome data.

The following variables, predictive of relationship stability and marriage among fragile families, are used to compare the samples from the FFCWS and the FFP: a) race, b) mother’s educational attainment, c) father’s educational attainment, d) mother’s economic self-reliance, e) father’s economic self-reliance, f) father’s earned income, g) mother report of general distrust of males, h) the father abusing alcohol and drugs, i) father having multiple partner fertility, j) couples who had more than one child together, k) attitudes toward marriage, l) mother’s church attendance, m) presence of intimate partner violence, and, n) greater supportiveness felt from the partner.
The variables for race, educational attainment and father’s earned income are delineated in Table 1. Mother’s and father’s economic self-reliance were measured by a single item each: “At the end of the month do you usually have: a) Some money left over, b) Just enough to make ends meet, or, c) Not enough to make ends meet?” Mother’s distrust of men in general was measured by two items answered on a 4-point Likert scale (strongly agree, agree, disagree, strongly disagree): a) In a dating relationship a man is largely out to take advantage of a woman; and, b) Men cannot be trusted to be faithful. Fathers reported on their alcohol and drug abuse in a dichotomous measure: In the past year, has drinking or using drugs ever interfered with your work on a job or with your personal relationships?

The father having children by other women than the current partner was dichotomously measured. For this variable, different measures were used for the FFCWS than the FFP. For the FFCWS (Carlson et al., 2004), a question getting at the father having multiple partner fertility was not asked in Wave 1, but was asked in Wave 2: “Do you have any other biological children who are not living with you now?” The authors note that comparing this question with data from the mother about the father having children with other partner(s) was accurate 90% of the time. For the FFP a question about multiple partner fertility was asked of the fathers at Wave 1. After asking about each of the children the father had with his current partner, the father was asked: “Do you have any other biological children?”

Having more than one child together was also a dichotomous measure and different measures were used for the FFCWS than the FFP. For the FFCWS a question about how many children the couple had together was not asked of the mothers in Wave 1, but was in Wave 2: Including (child) how many biological children do you have with (father)?” For the FFP, the following question about multiple children together was
asked at intake: “How many children do you have with your current partner?” For either study, if the couple had one child together they were coded as “0”—not having more than one child together, otherwise they were coded as “1”—having more than one child together.

Attitudes toward marriage were measured using two questions answered on a 4-point Likert scale (strongly agree, agree, disagree, strongly disagree): a) It is better for a couple to get married than to just live together; and b) It is better for children if their parents are married. Greater agreement indicated more positive views toward marriage. Mother’s church attendance was measured by one item: “About how often do you attend religious services?”, answered in a 5-point continuous variable from “not at all” to “once a week or more.” Intimate partner violence was measured by asking how often the partner “hit or slapped you when he/she was angry” and was answered on a three point scale: never, sometimes or often. Finally, supportiveness felt from the partner was measured by averaging four items, each on a 3-point frequency scale (never, sometimes, often): “How often would you say that [your partner] is a) fair and willing to compromise when you have a disagreement; b) expresses affection or love for you; c) insults or criticizes you or your ideas (reverse coded); and d) encourages or helps you to do things that are important to you?”

Statistical Procedures

In assessing the comparability of the FFP sample with the FFCWS Milwaukee subsample, two statistical procedures were used. If the measurement was on a scale, an independent samples t-test was used. If the measurement was a proportion, a z-score with a 95% confidence interval was used.

To determine whether the FFP outcome results differ from the control group outcomes, the relative risk ratio was used. Relative risk is used to compare two groups
(I=intervention and C=control) on the prevalence of an event by assessing whether or not the occurrence of the event in the two groups is independent (Rosner, 2006). Use of the relative risk ratio is common in epidemiological literature (Le, 1998)—for example, assessing risk of disease between smokers and non-smokers (Gandini, Botteri, Iodice, Boniol, Lowenfels, Maisonneuve, & Boyle, 2007). For the current study two events being separately assessed were: relationship stability and marriage. The relative risk ratio (RR) was calculated by dividing the percentage of group I who experience the event by the percentage of group C who experience the event: \[ RR = \frac{\text{i}_{\text{event}}/\text{i}_{\text{total}}}{\text{c}_{\text{event}}/\text{c}_{\text{total}}} \]. In this study the FFP was the intervention group and was compared with two different quasi-experimental control groups: a) the FFCWS Milwaukee subsample and b) the BSF study Baltimore control group subsample. Neither of the control groups was part of a CRE intervention. An RR of one (1) indicates no greater or lesser likelihood of stability/marriage for either those who were in the intervention group or the control group—in other words, the event of stability/marriage would be independent of the intervention (Rosner, 2006). An RR greater than 1 indicates that those in the intervention group are RR times more likely to experience relationship stability/marriage than the control group. The statistical significance of the RR was estimated by a 95% confidence interval.

A paired t-test with a 95% confidence interval was used to compare the reported Relationship Satisfaction of FFP participants at intake with the reported Relationship Satisfaction at follow-up. The Relationship Satisfaction of participants who stayed together without marrying and those who married were analyzed separately with the mothers and fathers also being analyzed separately. Although the project had status information on all participating couples, 20 couples who were together at last contact did not complete the one-year follow-up assessment that contained the follow-up
Relationship Satisfaction measure, thus the n for the analysis of Relationship Satisfaction was lower than the n for the other analyses.

Results

Four sets of results are presented here. First, data on the comparability of the FFP sample with the FFCWS Milwaukee subsample are presented. As noted above, only published tables were available on the BSF Baltimore control group subsample; thus, comparability analyses were more restricted for this group. However, the BSF Baltimore control subsample comparisons are valuable because this group volunteered to be part of a couple education intervention. Second and third, the results for the outcomes of relationship stability and marriage are presented. Finally, the results for the within-sample pre- and post-assessment of relationship satisfaction for FFP couples who stayed together are presented.

Comparing the FFP with the FFCWS Milwaukee subsample

The match criteria specified in the methods section above resulted in The Family Formation Project (FFP) being compared with the Fragile Families and Child Well-being Study (FFCWS) subsample for Milwaukee, WI. The FFP service area of the Minneapolis and St. Paul, MN metro area was rated the same as Milwaukee in macro-system terms of welfare generosity, labor market strength, and child support enforcement stringency. Table 2 lists comparisons between the samples in terms of demographics, relationship status and variables known to be predictors of relationship stability and marriage among fragile family couples. Where the two samples are different on a predictor of relationship stability or marriage, the right hand column contains a “+” to indicate that the difference favors the FFP sample’s likelihood of stability and marriage, and a “-” to indicate that the difference favors the FFCWS sample with “n.d.” indicating “no difference” and “n.a.” indicating the variable was not a predictor of relationship stability or marriage but was
included for demographic information. All differences were at the p<.05 level; z-scores were used in comparing percentages between the samples, and Welch’s two-sample t-test was used for continuous variables.

Table 2: Comparison of the Match between the Family Formation Project and the FFCWS on Predictors of Relationship Stability and Marriage

<table>
<thead>
<tr>
<th></th>
<th>FFP (n=96)</th>
<th>FFCWS Milwaukee (n=158)</th>
<th>Are samples different?</th>
</tr>
</thead>
<tbody>
<tr>
<td>% in romantic relationship</td>
<td>87.5%</td>
<td>87.3%</td>
<td>n.d.</td>
</tr>
<tr>
<td>% in “on-again off-again”</td>
<td>10.4%</td>
<td>7.6%</td>
<td>n.d.</td>
</tr>
<tr>
<td>Mother, age (years)</td>
<td>26.1 (s.d.=5.2)</td>
<td>23.9 (s.d.=5.0)</td>
<td>n.a.</td>
</tr>
<tr>
<td>Father, age (years)</td>
<td>27.8 (s.d.=6.3)</td>
<td>26.3 (s.d.=5.9)</td>
<td>n.a.</td>
</tr>
<tr>
<td>Years known each other before pregnancy</td>
<td>3.3 (s.d.=4.2)</td>
<td>3.8 (s.d.=4.4)</td>
<td>n.a.</td>
</tr>
<tr>
<td>Couple race</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White, non-Hispanic</td>
<td>32.3%</td>
<td>8.9%</td>
<td></td>
</tr>
<tr>
<td>Black, non-Hispanic</td>
<td>22.9%</td>
<td>63.9%</td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>3.1%</td>
<td>10.8%</td>
<td></td>
</tr>
<tr>
<td>Other, non-Hispanic</td>
<td>4.2%</td>
<td>0%</td>
<td></td>
</tr>
<tr>
<td>Biracial</td>
<td>37.5%</td>
<td>16.5%</td>
<td></td>
</tr>
<tr>
<td>Mother, educational attainment</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; High school</td>
<td>12.5%</td>
<td>45.6%</td>
<td></td>
</tr>
<tr>
<td>At least some college, including community/technical college</td>
<td>54.2%</td>
<td>26.6%</td>
<td></td>
</tr>
<tr>
<td>Father, educational attainment</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; High school</td>
<td>21.8%</td>
<td>38%</td>
<td></td>
</tr>
<tr>
<td>At least some college, including community/technical college</td>
<td>45.8%</td>
<td>22.2%</td>
<td></td>
</tr>
<tr>
<td>Mother, economic self-reliance</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not enough to make ends meet</td>
<td>33.3%</td>
<td>15.8%</td>
<td></td>
</tr>
<tr>
<td>Just enough to make ends meet</td>
<td>39.6%</td>
<td>39.2%</td>
<td></td>
</tr>
<tr>
<td>Some money left over</td>
<td>27.1%</td>
<td>44.9%</td>
<td></td>
</tr>
<tr>
<td>Father, economic self-reliance</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not enough to make ends meet</td>
<td>24%</td>
<td>8.4%</td>
<td></td>
</tr>
</tbody>
</table>
Just enough to make ends meet & 37.5% & 41.6% \\
Some money left over & 38.5% & 50% \\

Father, earned income (n=147) \\
0—did no regular work for income \\
< $10,000 & 5.2% & 4.1% \\
$10,000-$19,999 & 16.7% & 26.5% \\
$20,000-$34,999 & 17.7% & 18.4% \\
≥$35,000 & 22.9% & 10.2% \\

General distrust of males (score of 1-4, higher # = greater distrust) \\
1.9 (n=94, s.d.=0.495) & 1.99 (n=148, s.d.=0.515) & n.d. \\

Father abusing alcohol and drugs \\
19.8% & 8.9% & - \\

Father having Multiple Partner Fertility (father report) \\
32.3% & 45.9% (n=133) & + \\

Having More Than One Child Together \\
20% (n=95) & 35.3% (n=153) & - \\

Mother’s attitudes toward marriage (score of 1-4, higher # = see marriage having greater importance) \\
2.97 (n=95, s.d.=0.672) & 2.94 (n=154, s.d.=0.69) & n.d. \\

Father’s attitudes toward marriage (father report; score of 1-4, higher # = see marriage having greater importance) \\
2.85 (n=92, s.d.=0.779) & 3.03 (n=155, s.d.=0.715) & n.d. \\

Mothers’ church attendance (score of 1-5, higher # = more frequent attendance) \\
3.31 (s.d.=1.424) & 3.34 (s.d.=1.258) & n.d. \\

Presence of male perpetrated intimate partner violence \\
2.1% & 5.4% (n=156) & n.d. \\

Supportiveness felt from the father (score 0-2, higher # = more support felt) \\
1.47 (s.d.=0.403) & 1.36 (n=156, s.d.=0.316) & n.d. \\

Supportiveness felt from the mother (father report; score 0-2, higher # = more support felt) \\
1.5 (s.d.=0.366) & 1.36 (n=153, s.d.=0.339) & n.d. \\

+ Difference between the two samples favors FFP couples staying together or marrying. \\
- Difference between the two samples favors the FFCWS couples staying together or marrying.
The samples differed on nine of the 16 variables that have been found to predict fragile family stability and marriage. Five of these comparisons showed bias toward the FFP sample and four showed bias toward the FFCWS sample (see Table 3). In sum, although there were a number of differences between the FFP sample and the control groups, these differences appear balanced and do not invalidate the comparison of the two samples. As mentioned before, couple level data from the BSF study were not available for comparison with the sample in the present study.

Table 3: Variables the FFP and FFCWS Control Group Differed on

<table>
<thead>
<tr>
<th>Variables biasing FFP participants toward Couple Stability and Marriage</th>
<th>Variables biasing FFCWS participants toward Couple Stability and Marriage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Couple Race</td>
<td>Mother Economic Self-reliance</td>
</tr>
<tr>
<td>Mother Educational Attainment</td>
<td>Father Economic Self-reliance</td>
</tr>
<tr>
<td>Father Educational Attainment</td>
<td>Father Educational Attainment</td>
</tr>
<tr>
<td>Father Earned Income</td>
<td>Father Abuse of Alcohol and Drugs</td>
</tr>
<tr>
<td>Father having Multiple Partner</td>
<td>Having More Than One Child Together</td>
</tr>
</tbody>
</table>

*Relationship Stability*

The relative risk for Relationship Stability for couples in the FFP was 1.152 compared the FFCWS-Milwaukee subsample and 1.044 compared to the BSF Baltimore control subsample. Neither of these results was significant given that the confidence intervals each contained “1” (see Tables 4 and 5). Couples in the Family Formation Project stayed together at a comparable rate to couples in the Milwaukee subsample and the Baltimore subsample (72.9%, 63.3%, and 69.8%, respectively).
Table 4: Relationship Stability—Family Formation Project and Fragile Families and Child Well-being Study

<table>
<thead>
<tr>
<th></th>
<th>Together</th>
<th>Not together</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Formation Project</td>
<td>70 (72.8%)</td>
<td>26 (27.2%)</td>
</tr>
<tr>
<td>Fragile Families and Child Well-being Study, Milwaukee subsample</td>
<td>100 (63.3%)</td>
<td>58 (36.7%)</td>
</tr>
</tbody>
</table>

RR=1.152, 95% CI: 0.972 to 1.366, n.s.

Table 5: Relationship Stability—Family Formation Project and Building Strong Families Study

<table>
<thead>
<tr>
<th></th>
<th>Together</th>
<th>Not together</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Formation Project</td>
<td>70 (72.8%)</td>
<td>26 (27.2%)</td>
</tr>
<tr>
<td>Building Strong Families Study, Baltimore subsample</td>
<td>183 (69.8%)</td>
<td>79 (30.2%)</td>
</tr>
</tbody>
</table>

RR=1.044, 95% CI: 0.903 to 1.208, n.s.

Marriage

The relative risk for Marriage for couples in the FFP was 3.292 compared the FFCWS-Milwaukee subsample and 3.032 compared to the BSF Baltimore control subsample. Both of these results were statistically significant given that the confidence intervals each excluded “1.” Results for getting married are listed in Tables 6 and 7. In the FFP intervention, 20.8% of the couples married. For the control groups, 6.3% of the FFCWS, Milwaukee subsample married and 6.8% of the BSF, Baltimore control group subsample married.
### Table 6: Married—Family Formation Project and Fragile Families and Child Well-being Study

<table>
<thead>
<tr>
<th></th>
<th>Married</th>
<th>Not Married</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Formation Project</td>
<td>20 (20.8%)</td>
<td>76 (79.2%)</td>
</tr>
<tr>
<td>Fragile Families and Child Well-being Study, Milwaukee subsample</td>
<td>10 (6.3%)</td>
<td>148 (93.7%)</td>
</tr>
<tr>
<td>RR=3.292, 95% CI: 1.61 to 6.732</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 7: Married—Family Formation Project and Building Strong Families Study

<table>
<thead>
<tr>
<th></th>
<th>Married</th>
<th>Not Married</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Formation Project</td>
<td>20 (20.8%)</td>
<td>76 (79.2%)</td>
</tr>
<tr>
<td>Building Strong Families Study, Baltimore subsample</td>
<td>18 (6.8%)</td>
<td>244 (93.2%)</td>
</tr>
<tr>
<td>RR=3.032, 95% CI: 1.677 to 5.483</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Relationship Satisfaction**

The within-sample t-test for the couples who stayed together without marrying showed no change in Relationship Satisfaction for the mothers or the fathers (see Table 8). Similarly, couples who stayed together and married showed no change in Relationship Satisfaction. These results support the hypothesis that couples receiving the FFP intervention who stayed together would not report the normative decline in relationship satisfaction during the year period of parenting. The small effect sizes shown in Table 8 suggest that the finding of lack of change was not simply a function of low power in these subgroup analyses.
Table 8: Relationship Satisfaction, FFP participants

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>Relationship Satisfaction (t1)</th>
<th>Relationship Satisfaction (t2)</th>
<th>Paired samples test</th>
<th>Effect Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mothers, together not married</td>
<td>33</td>
<td>35.58 (s.d.=6.73)</td>
<td>34.52 (s.d.=7.31)</td>
<td>-1.11</td>
<td>.275</td>
</tr>
<tr>
<td>Fathers, together not married</td>
<td>32</td>
<td>35.69 (s.d.=5.74)</td>
<td>34.81 (s.d.=6.54)</td>
<td>-1.35</td>
<td>.186</td>
</tr>
<tr>
<td>Mothers, married</td>
<td>17</td>
<td>39.18 (s.d.=4.36)</td>
<td>40.53 (s.d.=4.26)</td>
<td>1.15</td>
<td>.267</td>
</tr>
<tr>
<td>Fathers, married</td>
<td>17</td>
<td>39.94 (s.d.=4.51)</td>
<td>39.88 (s.d.=4.72)</td>
<td>-.052</td>
<td>.959</td>
</tr>
</tbody>
</table>

Discussion

This study assessed the outcomes of relationship stability and marriage for the Family Formation Project. The findings showed that the Family Formation Project did not affect the overall rate of couple stability, but that FFP couples married at a higher rate than control group couples. Concerning the health of the relationships of couples who stayed together, whether they married or not, couples maintained their levels of relationship satisfaction as opposed to experiencing the normative decline in couples with young children.

The finding that the FFP increased the rate of marriage is important to the research on couple and relationship education (CRE) among fragile families. The only prior study assessing the outcome of marriage, the Building Strong Families study, which was a group, classroom based intervention, had mixed results among implementation sites with an overall finding of no effect on marriage rates (Wood, McConnell, Moore, Clarkwest, & Hsueh, 2010). Even for the BSF Oklahoma site, which had positive findings for stability and relationship quality, there was no marriage effect. As mentioned before, the BSF findings have been questioned due to low participation.
rates in classes at a number of sites and couples not necessarily participating together (Cowan, Cowan, & Knox, 2010). The Family Formation Project, on the other hand, required couples to participate together along with tailoring to the needs of the couple, with the core intervention delivered in the home. Perhaps it was this more personal, intensive effort that made the difference for the FFP couples in their likelihood of marrying. Fragile family couples tend to have positive feelings toward marriage and toward their current relationship, yet lack confidence in moving toward marriage (McLanahan & Beck, 2010; Edin & Reed, 2005; Edin & Kefalas, 2005; Gibson-Davis, Edin, & McLanahan, 2005; Carlson, McLanahan, & England, 2004). It is possible that the personalized education and support, along with exposure to married role models in the Couple Connection events, helped FFP couples increase their confidence in their own relationship enough that they were more willing to move toward marriage. Future research is necessary to investigate these explanations.

Interestingly, despite the FFP helping a subset of couples marry, it did not promote an overall higher rate of relationship stability. It could be that distressed couples on a trajectory to break up in the near future are in need of more than an education and support program. Anecdotally, a few FFP couples who broke up told their Family Formation Coordinator that participating in the FFP had been their “last ditch effort” to save their relationship. Although some of these couples may be better off not staying together, participation in an education program while they are still thinking about staying together may have some benefits. For instance, in one FFP couple who broke up, the female partner said that she was better off without her former boyfriend, but because of the program she saw the importance of him still being involved with their two children. She therefore allowed the father visitation, whereas without the program she said she would have vindictively withheld visitation. The outcomes of relationship
stability, marriage, and relationship satisfaction are only a subset of the outcomes that may be affected by a CRE program. A broader horizon of effects systematically considered in future research may illuminate the extent to which positive outcomes may occur for couples who break up.

The hypothesis that relationship satisfaction would not decrease for FFP couples who stayed together was supported. Relationship satisfaction among FFP participants was generally fairly high to begin with, thus it is not surprising that it did not increase. However, research has consistently shown that couple relationship satisfaction tends to decrease for couples with young children, so having stability in satisfaction is a positive finding for a CRE program administered to new parents (Petch & Halford, 2008).

Limitations

The most important limitation of this study was that it was a quasi-experimental design, lacking a randomly assigned control group. The two control groups used were reasonable matches, but with caveats. The Fragile Families and Child Well-being Study, Milwaukee subsample, provided a good normative comparison group but was not recruited for an intervention study. The Baltimore control group of the Building Strong Families study did provide a matched group who had volunteered for an intervention study. Although Baltimore was the best demographic match from the BSF cities and was selected using the same method as for the FFCWS match, it may have been less than ideal in other ways. Data specific to the control group at intake were not available, but the BSF report authors noted that the total Baltimore sample (intervention and control group combined) had lower expectations for marriage and the fathers had greater economic disadvantage than the samples at other sites. Further, the Baltimore control group had a lower outcome of marriage than any other BSF site, but a rate similar to the FFCWS. Thus baseline differences between the FFP and Baltimore samples may have
limited the viability of the match. A final threat to validity should be noted. Because the FFCWS preceded the FFP, there is a temporal threat to the validity of the outcome comparisons: it is possible that something occurring in the larger culture or local community influenced the FFP couples to pursue marriage and have stable relationship satisfaction. This was another reason to include a second comparison group in the design of the present study.

Other study limitations include the sample being based in one Midwest urban area, the variability of the in-home intervention which makes full specification of the intervention not feasible (although openness to variability was a strength of the intervention), and the lack of a comparable standardized measure of couple satisfaction for comparison with FFCWS and BSF samples.

Implications and Future Research

Within the limitations noted, the findings from this study—that a couple relationship education and support program appears to have promoted marriage and helped maintain relationship satisfaction among fragile families—have potential policy implications. This study suggests that there is merit in continued funding and evaluation of intensive programs to promote healthy, stable marriages among fragile families. Although it is not possible or even desirable to have all couples in fragile families marry, many do want to and, with assistance, these couples may have a better chance at achieving and maintaining this goal.

Future research is needed to confirm these results. An experimental study with an intensive, tailored approach is necessary. Such a study should include a strong qualitative component to begin assessing which programmatic elements assist fragile families in moving toward marriage and maintaining relationship satisfaction and to see if certain approaches are more applicable to varying ethnic groups within fragile families.
A broader array of outcomes should be considered in future work; for instance, the co-parenting relationship of couples who do break up may be better because of their participation in the intervention and this should have positive effects for the children involved in these relationships. The long-term effects of a couple education intervention on the couples and their children also need to be researched to see if the marriage benefits found in the general population are gained by unwed parents who subsequently marry and their children. Overall, the results of this current study support the value of continued research on couple education with fragile families.
References


*Family Relations, 44*, 392-440.


Appendix A: Comparing BSF Service Areas with FFP Service Area using Method of Comparison from the Fragile Families and Child Well-being Study (FFCWS)

<table>
<thead>
<tr>
<th>Area</th>
<th>Labor market strength: 1) Unemployment rate for the city (or average for the counties).</th>
<th>Welfare generosity -- (1) the dollar value of the monthly welfare payment for a family of four (this is state level data), and (2) the dollar value of the monthly payment divided by the median monthly rent in the city (or average for the counties weighted by number of rental units in the counties).</th>
<th>Child support enforcement -- (1) the paternity establishment rate (average for 1994 &amp; 1995), (2) the proportion of AFDC cases with a child support award, and (3) the proportion of AFDC cases with a payment. (These three measures are all state level data.)</th>
<th>Method for matching a BSF site with the FFP service area # of “steps” away from the FFP site based on the categorization for each of the previous 3 columns (see number—0, 1, or 2—after the category assigned in each column)—this leads to a 4-way tie to be closest.</th>
<th>Take the average of the 3 measures for child support enforcement (in parentheses by classification), the percentage in #2 for Welfare generosity, and the employment rate (in parentheses by the unemployment rate) and average these three measures to find which area is closest to FFP service area. This shows that Baltimore is the closest, followed by Oklahoma city then the Indiana counties.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Formation Project (Twin Cities, Minnesota—5 counties—Henn, Ramsey, Anoka, Dakota, Wash.)</td>
<td>1) 4.6 (95.4%) Strong 1) $532 – 2) 1.10 (532/483) High</td>
<td>1) 53% 2) 49% 3) 48% Strict (50%)</td>
<td>0</td>
<td>.851</td>
<td></td>
</tr>
<tr>
<td>Atlanta, GA</td>
<td>1) 6.5 (93.5%) Average (1) 1) $280 – 2) .66 (280/422) Low (2)</td>
<td>1) 49% 2) 37% 3) 37% Moderate (41%)(1)</td>
<td>4</td>
<td>.668</td>
<td></td>
</tr>
<tr>
<td>Baltimore, MD¹</td>
<td>1) 9.4 (90.6%) Average (1) 1) $373 – 2) .90 (373/413) Moderate (1)</td>
<td>1) 40% 2) 62% 3) 22% Moderate (41%)(1)</td>
<td>3</td>
<td>.739</td>
<td></td>
</tr>
<tr>
<td>Baton Rouge, LA</td>
<td>1) 6.0 (94%) Strong (0) 1) $190 – 2) .54</td>
<td>1) 38% 2) 38%</td>
<td>4</td>
<td>.597</td>
<td></td>
</tr>
</tbody>
</table>

¹ When I made out this rating chart, I had forgotten that Baltimore was actually one of the FFCWS cities. In the FFCWS design article (Reichman, Teitler, Garfinkel & McLanahan, 2001) there is a chart with the classification of sampled cities. I classified Baltimore in my work here the same as it is shown in the design article, providing external validity to what I have done here.
| Location                      | Average (1) | Strong (0) | Moderate (1) | Low (2) | 1)  | 2)  | 3) \% | |-----------------------------|-------------|------------|-------------|--------|-----|-----|-------|
| Orange & Broward Co., FL     | 7.0 (93%)   | Average (1)| $303 (.55)  | Low (2) | 1) 19%| 2) 100%| 3) 12%| Strict (44%) (0) |
| Houston, TX                  | 6.1 (93.9%) | Strong (0) | $188 (.48)  | Low (2) | 1) 38%| 2) 25%| 3) 34%| Lenient (32%) (2) |
| Allen, Marion, Lake Co., IN  | 6.6 (93.4%) | Average (1)| $288 (.71)  | Low (2) | 1) 15%| 2) 50%| 3) 67%| Strict (44%) (0) |
| Oklahoma City, OK            | 6.1 (93.9%) | Strong (0) | $307 (.84)  | Low (2) | 1) 30%| 2) 40%| 3) 33%| Lenient (34%) (2) |
| San Angelo, TX               | 5.7 (94.3%) | Strong (0) | $188 (.52)  | Low (2) | 1) 38%| 2) 25%| 3) 34%| Lenient (32%) (2) |
Appendix B: Dissertation Proposal

Outcomes of the Family Formation Project: Can Couple Relationship Education with Fragile Families Promote Relationship Stability and Marriage?

Specific Aims

Childbearing to single parents has increased significantly in the U.S. during the past four decades (Amato & Maynard, 2007). Nearly four in ten U.S. births in 2007 was to a single mother (Ventura, 2009). This is a social concern given that, on average, children and adults consistently have better outcomes in terms of education, economic well being, and physical and mental health within stable, married two-parent families (Wilcox et al., 2005). Research in the past decade has found that most unmarried couples having a child ("fragile families") say they want to stay together and have very positive views toward marriage; however relatively few remain together and marry (Gibson-Davis, Edin, & McLanahan, 2005; Lichter, Batson, & Brown, 2004). Federal policy and funding have been enacted to help fragile families who desire couple stability and marriage achieve these goals by offering couple relationship education though the Healthy Marriage Initiative (Dion, 2005). Couple relationship education in general has proved efficacious in helping couples in mainstream populations improve their communication and relationships (Fawcett, Hawkins, Blanchard, & Carroll, 2010; Carroll & Doherty, 2003). Further, couple relationship education has been shown to help new parent couples avoid the decline in relationship satisfaction that generally follows the birth of a child (Petch & Halford, 2008). However, little research has been conducted to show whether couple relationship education is effective with fragile families (Amato & Maynard, 2007).
The federal Healthy Marriage Initiative included two sets of projects with varying goals and constraints aimed at learning how to strengthen relationships in fragile families: Building Strong Families (BSF) and the Community Healthy Marriage Initiative (CHMI) (Dion, 2005). The BSF used randomly selected intervention and control groups in eight sites and offered a low intensity, traditional class/curriculum-based intervention. Initial BSF follow-up data have been released (Wood, McConnell, Moore, Clarkwest, & Hsueh, 2010). The CHMI projects targeted entire communities and outcomes research were to be done using quasi- or non-experimental methods (Dion, 2005). The Minnesota Family Formation Project (FFP) was a CHMI intervention that featured in-home education, community support and the use of community engagement principles from the Families and Democracy model (Doherty, Mendenhall, & Berge, 2010) with a pre- and post-intervention assessment based on the national Fragile Families and Child Wellbeing Study assessment (Reichman, Teitler, Garfinkel, & McLanahan, 2001).

Research regarding Healthy Marriage projects aims to show whether couple relationship education helps unmarried parent couples stay together in a healthy way and if it helps those who desire marriage achieve that goal.

The long term goal of this research is to understand the role of couple relationship education in promoting healthy relationship stability and marriage among fragile families. The objective of this proposal is to study the effects of the FFP on couple stability and marriage using a quasi-experimental method employing matched city comparisons with data from the control group of the BSF and data from the Fragile Families and Child Wellbeing Study, and to assess the relationship satisfaction of couples who stayed together. The central hypothesis is that couple relationship education and support will promote relationship stability and marriage within fragile families and that couples who stay together will not experience a decrease in
relationship satisfaction. The rationale for this study is that it will provide needed information on the efficacy of couple relationship education in helping fragile families who desire to stay together maintain relationship stability for the future benefit of their children and themselves.

I propose to test the central hypothesis and accomplish the objective of this application by achieving the following three specific aims:

**Aim 1: Assess the outcomes of the Family Formation Project in promoting relationship stability among the participant couples.** The hypothesis for this aim is that, compared to matched samples from the Fragile Families and Child Wellbeing Study and the Building Strong Families control group, the Family Formation Project couples will have a higher rate of relationship stability.

**Aim 2: Assess the outcomes of the Family Formation Project in promoting marriage among the participant couples.** The hypothesis for this aim is that, compared to matched samples from the Fragile Families and Child Wellbeing Study and the Building Strong Families control group, the Family Formation Project couples will have a higher rate of marriage.

**Aim 3: Assess the relationship satisfaction of Family Formation Project participant couples who stay together.** The hypothesis for this aim is that participating couples in the Family Formation Project who chose to stay together will maintain their intake level of relationship satisfaction rather than experience the normative decline expected of couples with young children.

**Background and Significance**

Fragile families have been the subject of significant public policy debate (McLanahan, Garfinkel, Mincy, & Donahue, 2010). The term “fragile families” is used to describe those who are unmarried and have a child together, most of whom are also
low-income couples. The term highlights the findings that these couples have a high break-up rate despite their generally positive expectation that they will stay together and marry (Gibson-Davis, Edin, & McLanahan, 2005; Lichter, Batson, & Brown, 2004). Part of this policy debate has been about whether fragile families can be strengthened in their desires for couple stability and marriage and whether the benefits that generally accrue to adults and children in married-couple families would accrue to fragile families.

Many analyses have shown that marriage contributes, through direct and indirect effects, to better economic well-being, better physical health and better mental health for men, women and children (Wilcox et al., 2005). More specifically, married men and women on average have more economic resources (Ahituv & Lerman, 2007; Dougherty, 2006) and children of married parents are much less likely to experience poverty (Rank & Hirschl, 1999, 2009). This finding is particularly strong for women who come from disadvantaged families (Lichter, Graefe, & Brown, 2003). In terms of physical health, married men and women have lower mortality rates and report better overall health than singles (Kaplan & Kronick, 2006; Manzoli, Villari, Pirone, & Boccia, 2006; Liu & Umberson, 2008) and children living in married, two parent households are less likely to use harmful substances (Brown & Rinelli, 2010; Broman, Li, & Reckase, 2008). In terms of mental health, married men and women on average have lower levels of depression and overall better psychological well-being (Lamb, Lee, & DeMaris, 2003; Hughes & Waite, 2002). Children in married-parent households are less likely to evidence emotional and behavior problems (Brown, 2004).

Given the benefits of marriage (Wilcox et al., 2005) and that more children are being born into fragile families (Amato & Maynard, 2007), more children will likely live in at-risk situations and their parents will have fewer resources to assist them. To bridge this gap and help avoid the attendant risks, policy has been proposed to promote fragile
family couple stability and marriage through couple relationship education (Dion, 2005). As a precursor to testing whether stability and marriage helps fragile families accrue economic and health benefits, there must first be testing to see if couple relationship education improves couple stability and encourages marriage among fragile families.

One study assessed the preliminary results for the Building Strong Families (BSF) program (Wood, McConnell, Moore, Clarkwest, & Hsueh, 2010). The BSF results at 15 months found no overall effect for the program in terms of promoting couple stability and marriage. Despite this neutral finding, there were positive effects among two subgroups: African Americans and the participants at the Oklahoma City site. The BSF program has been criticized for its design and some researchers have called for more testing of couple relationship education with fragile families (Cowan, Cowan, & Knox, 2010).

Further, the BSF program was only one approach to couple relationship education: it used a set curriculum, classroom delivered intervention which did not require both members of the couple to be present (Wood et al., 2010). In contrast to the BSF, the Family Formation Project (FFP) was a Community Healthy Marriage Initiative designed by a community coalition with content tailored to the participating couples’ specific relationship needs. The FFP was delivered in the homes of participating couples and required both members of the couple to participate, making it a high intensity intervention. The significance of the current study is that it assesses the Family Formation Project to see if intensive, tailored, in-home couple relationship education can promote couple stability and marriage among fragile families. This will provide a crucial building block in the current scientific knowledge.

Review of Relevant Literature

*Relationships Among Fragile Families*
The incidence of fragile families has increased dramatically in the U.S. during the past four decades (Amato & Maynard, 2007) such that nearly four in ten U.S. births in 2007 were to a single mother (Ventura, 2009). In some sub-populations the incidence is higher—for instance, half of births to Hispanic females and 70% of births to African American females occur to unmarried parents (McLanahan, Garfinkel, Mincy, & Donahue, 2010). To gain more understanding about this growing demographic, the Fragile Families and Child Wellbeing Study (FFCWS) was formed as a longitudinal birth-cohort study representative of hospital births in large U.S. cities (Reichman, Teitler, Garfinkel, & McLanahan, 2001).

The FFCWS used stratified random sampling, selecting 20 of the 77 US cities with populations of 200,000 or more. The stratification was based on categories of state welfare generosity, the local labor market, and stringency of child support enforcement policies. Hospitals were sampled from within the cities and births were sampled from within the hospitals. In all, 75 hospitals and 4700 births were sampled. The birth sample included births to unmarried (3600) and married (1100) mothers and as many fathers of the newborns as possible (about 75% of fathers participated in wave 1 data collection). Unmarried mothers were oversampled to obtain a richer picture of fragile families. Data were collected just after the birth of the child, and again at one year, three years and five years post-birth. Data collected included information on the use of health care, the parental relationship, marital attitudes, expectations of father’s rights and responsibilities, parental health, social support, community resources, education, employment, and income. Follow-up data focused on the parental relationship, child-well-being, and use of welfare, child support, child care, and health care resources.

Data from the FFCWS show that couples in fragile families generally have high expectations for staying together and eventually marrying as well as positive orientations
toward marriage (McLanahan & Beck, 2010). Overall, 72% of the mothers and 90% of the fathers said they had a 50/50 or better chance of marrying their current partner. Those couples who were cohabiting had higher expectations for marriage than those who were not cohabiting, with 92% of cohabiting mothers and 95% of cohabiting fathers saying they had a 50/50 or better chance of marrying compared to 52% and 72% of non-cohabiting mothers and fathers, respectively. Other quantitative research with single mothers cohabiting with the father of their child also showed high expectations of marriage, with 75% of the mothers saying they expected to marry (Lichter, Batson, & Brown, 2004). Likewise, qualitative research with low-income single mothers has shown that most of the mothers aspired to marriage (Edin, 2000) and that marriage was highly respected (Gibson-Davis, Edin, & McLanahan, 2005).

Despite the high regard and expectations for marriage among fragile families, most do not marry. At the five-year follow up for the FFCWS, more than 60% of couples were no longer romantically involved (McLanahan & Beck, 2010) and only 15% were married (McLanahan, 2009). This high rate of relationship dissolution often leaves the children of these relationships in disadvantaged situations such as poverty, diminished relationships with their fathers and greater instability in their living arrangements (McLanahan, 2009). McLanahan and Beck (2010) found that 27% of the fathers who broke up with their child’s mother provided formal child support, 33% provided informal cash support and 45% provided in-kind support (e.g., purchasing needed/desired items). Further, only 51% of these fathers maintained regular contact (monthly) with the child at age 5, 27% of the mothers had at least one new partner within five years of the child’s birth and 21% of the mothers had another child by a new partner. Concern for the children from these relationships has led researchers to identify barriers to couple
stability and marriage among fragile families and factors that help facilitate stability and marriage in fragile family couples who do marry.

Although expectations for marriage are initially high, fragile families have economic standards they want to meet before marrying such as stable income and home ownership akin to what might be seen among the middle class (Edin & Reed, 2005). Nearly three-quarters of the couples in one study saw their current low-income financial situation as a barrier to marriage (Gibson-Davis, Edin, & McLanahan, 2005) and low educational attainment and unstable employment for both the mothers and fathers tend to decrease relationship stability and marriage among fragile families (McLanahan & Beck, 2010; Edin & Reed, 2005; Carlson, McLanahan, & England, 2004; Osborne, 2005). In qualitative work with single mothers, the mothers maintained that they would not marry if they had to rely on a man’s earnings; the mothers wanted to be economically self-reliant prior to marriage (Edin & Kefalas, 2005).

In addition to economic barriers, fragile families also face social barriers to relationship stability and marriage. Carlson, McLanahan and England (2004) found multiple social barriers at the one year follow-up in the FFCWS data. Mothers who reported a general distrust of males were less likely to maintain relationship stability and less likely to marry (father reports of distrust of females had no effect on relationship stability or marriage). Mothers’ reports of the father abusing alcohol and drugs were less likely to maintain relationship stability although the result on marriage was not significant (reports of mother’s alcohol and drug abuse were not significant). If a father had children by a previous partner, the couple was less likely to marry and less likely to stay together (a mother having a child by a previous partner did not deter cohabitation or marriage). Ethnicity also played a part in couple stability and marriage, with blacks being less likely
to marry than whites or Hispanics and blacks less likely than Hispanics to maintain a cohabiting relationship.

Qualitative research by Edin and Kefalas (2005) supported the quantitative findings on social barriers of gender distrust and substance abuse and added chronic intimate partner violence, infidelity, and male involvement in crime as deterrents to marriage for low-income single mothers. Finally, and paradoxically, a high regard for the idea of marriage along with a fear of divorce has been found to be a barrier to marriage—couples do not want to disgrace an institution they esteem by getting a divorce, so they postpone marriage, waiting until they can have high enough confidence in their relationship to wed (Edin & Reed, 2005; Edin & Kefalas, 2005; Gibson-Davis, Edin, & McLanahan, 2005).

Factors that facilitate couple stability and marriage among fragile families include more than reversing the direction of barriers, according to a report by Carlson, McLanahan and England (2004). Positive attitudes toward marriage predicted marriage. Mothers who attended church had a greater likelihood of marriage (no effect on marriage was seen for fathers’ church attendance). Couples who had more than one child together were more likely to maintain relationship stability. Greater supportiveness felt from the partner (measured by frequency of expressions of love and encouragement) increased chances for stable cohabitation and marriage. Other studies have also shown that increasing the quality of the relationship tends to increase the chances for relationship stability and marriage (Edin & Reed, 2005).

**Couple Relationship Education and Fragile Families**

Given that parents staying together to raise their children generally results in better outcomes for the children and that most fragile family parents say they want to stay together and desire marriage, policy makers have sought means whereby fragile
families can be strengthened in their ability to stay together. One among several such proposed means is Couple Relationship Education (CRE; Dion, 2005). CRE historically has been education presented in a structured format seeking to help couples increase their knowledge about relationships, gain skills for relationship improvement and maintenance, and develop attitudes which foster healthy relationship functioning (Halford, Markman, Kline, & Stanley, 2003).

Although no single type of intervention could address every identified barrier to and facilitative factors for couple stability and marriage among fragile families, improvements in the areas CRE seeks to address have been correlated with improved couple stability and marriage and can have indirect effects by influencing other barriers and facilitative factors. For instance, Lerman (2010) suggests that CRE programs could be one link in helping fragile family fathers raise their earnings by strengthening the mother-father relationship and giving them communication skills that can be useful in employment as well as the couple relationship.

Best practices in CRE emerging in the literature include tailoring the content to the needs of the couple and integrating CRE with other existing services (Ooms & Wilson, 2004; Halford, 2004; Halford, Markman, Kline, & Stanley, 2003). For example, specific issues such as stepfamily challenges and relationship violence could be addressed as needed, and couples can be connected to services which address employment readiness, education, mental health and substance abuse.

CRE has proved efficacious in helping couples in mainstream populations improve their relationships (Fawcett, Hawkins, Blanchard, & Carroll, 2010; Carroll & Doherty, 2003). Until recently, the efficacy of CRE with non-mainstream couples had not been studied (Ooms & Wilson, 2004). Researchers have called for CRE to be implemented and researched with low-income, minority, and fragile family couples and
federal money has been set aside for such projects (Dion, 2005). Two recent
publications partially address these calls: a review and meta-analysis of CRE among
low-income populations (some of whom are fragile families), and one preliminary
research report of a project working directly with fragile families.

The meta-analysis found that CRE produces small to moderate effects (Hawkins
& Fackrell, 2010) in low income couples. The authors obtained twelve studies from
journals and project reports, “and even preliminary analyses that were not yet written
into an official report” (pp. 184-5). From their report it appeared that four of the twelve
studies were funded by federal money aimed at fragile families. The meta-analysis
showed that CRE positively impacted couples’ relationship quality, commitment, and
communication skills levels. This report is limited in its usefulness in looking at CRE
among fragile families due to the preliminary nature of the studies obtained for the
review, the fact that it did not focus specifically on fragile families, and outcomes did not
include relationship stability and transition to marriage. However, the meta-analysis
does provide support for continued efforts in assessing the impact of CRE with fragile
families.

The Building Strong Families project (BSF) is a federally funded Healthy
Marriage Initiative program delivering CRE to fragile families (Wood, McConnell, Moore,
Clarkwest, & Hsueh, 2010). The BSF project was implemented in eight sites in different
US cities and state counties. Each implementation was handled by a location
organization which volunteered to be part of the study. The eight locations were Atlanta,
GA; Baltimore, MD; Baton Rouge, LA; Orange and Broward counties in FL; Houston, TX;
Allen, Marion, and Lake Counties in IN; Oklahoma City, OK; and, San Angelo, TX. In
each site a randomized controlled design was used with equal numbers of couples being
assigned to the control and intervention groups. Each site selected one of three CRE
skills-based curricula which were delivered in group/classroom settings. Each site operated independently and provided couples with assessments and referrals to other local services (child care, education, employment, housing, legal, and mental health). Individual support to couples was offered by way of a “family coordinator” whose tasks varied by location but generally involved support calls or visits to couples (or individuals in the couple) to encourage participation in the program, reinforce the relationship skills covered in classes, and provide emotional support. None of the sites required both members of the couple to be present for the classes. Control group participants received no intervention through the BSF program.

The BSF assessments looked at outcome measures in five areas: relationship status, relationship quality, avoidance of intimate partner violence, co-parenting, and father involvement. Relationship status was measured three different ways: was the couple still romantically involved, was the couple living together (married or unmarried) and was the couple married. Evaluation was to be done at 15 months and three years.

The preliminary BSF results at 15 months found no overall effect for the program on any of the outcomes, including couple stability and marriage; the intervention and control groups were statistically even (Wood, McConnell, Moore, Clarkwest, & Hsueh, 2010). Despite this finding, there were positive effects among two subgroups: African American couples as a group from all sites and the participants at the Oklahoma City site; and there were negative effects for the participants at the Baltimore site.

For African American couples (where both female and male were African American), relationship quality was higher in four of five measures of the construct, co-parenting quality increased and couple violence decreased, but there was no difference on measures of relationship status. For couples at the Oklahoma City site, relationship
stability was higher (compared to the control group), and relationship quality (on all five measures), co-parenting quality and father involvement were all higher. At the Baltimore site couples in the intervention group fared worse than the control group in terms of relationship stability, relationship quality (one of the five measures was lower, the others neutral), intimate partner violence, co-parenting and father involvement.

The authors of the BSF report argued that more follow up exploration is necessary (Wood, McConnell, Moore, Clarkwest, & Hsueh, 2010). Although their design could not pinpoint why one site had positive effects and one site had negative effects, they point out some differences that may have played a part. The Baltimore site, which showed negative effects, had the lowest rating of couple commitment and expectations of marriage: 38% had both members of the couple saying they believed marriage to their partner was likely compared to 61% of couples across the other sites. Couples at the Baltimore site were also more likely to be economically disadvantaged: 42% of the fathers were unemployed compared to 24% across the other sites.

The Oklahoma City site, which showed positive effects, was one of two sites (Atlanta being the other) where the program infrastructure was built solely for the implementation of CRE for the BSF study. The other six sites added CRE to services they were already providing. The site was the only one to use the Becoming Parents curriculum which was an adaptation of the PREP program for new parents (Cowan, Cowan & Knox, 2010). PREP has been shown to be effective in helping couples improve in relationship skills and stability (Stanley, Markman, St. Peters, & Leber, 1995; Stanley, Allen, Markman, Rhoades, & Prentice, 2010). Finally, the Oklahoma City site had a higher rate of couple attendance at CRE workshops: 45% of the enrollees finished 80% or more of the curriculum. At all other sites only 9% of enrollees finished 80% or more of the curriculum.
The BSF study appears to be rigorous by design—a randomized controlled trial—however, a number of factors with the design and implementation of the intervention give rise to questions as to whether the intervention was a good test of doing CRE with fragile families. First, there was no overall coordination of efforts between the sites. Three different curriculums were used, the use of family coordinators varied by site, and 75% of the sites had other services as their main offering—doing CRE was not their specialty and was an add-on service. Differing structures by locale may have allowed for adaptation to local circumstances but the fact that the intervention structures were different between the sites raises the question as to whether the sites can be studied as a conglomerate intervention. Second, the low rate of attendance at most sites raises the question as to whether the couples really got enough dosage of the intervention to be helpful. Third, despite the intervention being billed as a couple-based intervention, there was not a control for whether couples attended together or not—attending together was not a requirement for participation.

Research Design and Method

Family Formation Project Design

The Family Formation Project (FFP) was a joint venture between the University of Minnesota’s Department of Family Social Science and the Minnesota Department of Human Service Child Support Enforcement Division. The FFP was funded through the federal Healthy Marriage Initiative (Dion, 2005) and matching state dollars (via a surcharge on marriage license fees). The FFP used a community engagement approach called the Families and Democracy Model (Doherty, Mendenhall, & Berge, 2010) in which key stakeholders were consulted at every step of the project and the project adapted continually based on community partners’ feedback and experience with participant couples. This approach allowed stakeholders and participant couples to feel
joint ownership of the project and for the crafting of a culturally competent intervention. Further, this approach allowed the couples themselves, in consultation with a relationship coach, to help drive the intervention based on what they believed they needed to help them reach their goals in terms of couple stability and marriage. Tailoring couple relationship education to meet the needs of the couples is one of the best practices in CRE (Halford, Markman, Kline, & Stanley, 2003). In this flexible intervention approach, the process used was the same for each couple while the exact content and services delivered to each couple varied according to the need.

Couples were recruited through social service agencies, local health clinics and by direct mailing to unmarried couples who had recently established paternity. The State partners to the FFP sent out the direct mailing on behalf of the FFP as they maintained the database of couples who had signed recognition of parenthood forms. Because of the variety of recruitment methods and because the FFP was not given access by the State to private data of the couples’ receiving the mailings, the project could not determine any differences between couples who enrolled in the project and those who did not. To be eligible, couples had to be unmarried, have a child together (couples with multiple children or with children from previous relationships were not excluded), and be interested in staying together to raise their child(ren) with marriage as a potential consideration in the future. (Only couples who said they were not interested in marriage at all were excluded from program participation; the FFP was not promoting marriage where it was not desired.) Couples met with project staff before enrolling in the project to make sure both members understood the project and agreed to participate. Couples who enrolled completed an intake assessment, engaged in the CRE intervention over the course of one year, and then completed a second assessment.
The FFP was concerned about working with couples who had a history of intimate partner violence (IPV; Wilde & Doherty, 2011). A protocol to deal with potential IPV was developed in partnership with a local domestic violence program and national consultants. Couples who reported IPV during the intake assessment were reviewed by a project Domestic Violence Team comprised of the principle investigator, the project coordinator, and a staff member trained and experienced in working with IPV. Couples who were judged to be at risk because of serious or ongoing IPV or where either member of the couple felt unsafe were referred to the partnering domestic violence treatment center. Couples who accepted the referral, worked with the treatment center and were later determined by a counselor at the treatment center to be safe to work with in a CRE setting were then accepted into the project. A total of nine couples were screened out due to serious IPV risk. One of these couples worked through the above protocol and subsequently entered the project. Couples who had experienced situational couple violence (Johnson, 1995; Johnson & Leone, 2005) but where neither felt there was any current danger in the relationship were accepted into the project without referral to the domestic violence center; however, the fact of their violence was made one of the issues dealt with during the program and they were followed up with regarding their violence by their relationship coach.

The primary intervention was the assignment of a relationship coach, termed a Family Formation Coordinator (FFC), to each couple who worked in-home with the couple. FFCs had been trained in working with couples before being hired as staff members. All but one were trained as marriage and family therapists; the one non-therapist had been trained in providing couples communication seminars and had significant teaching experience. During the course of the project, the FFCs received training in administering the PREPARE premarital inventory (Olson, 2006). All of the
coordinators were screened in an interview process before being hired to be sure they were confident, outgoing, able to express themselves clearly, and were able to demonstrate good relationship-building skills. They needed to show a high degree of commitment and caring for the participant couples. All FFCs were doctoral students in the Family Social Science department at the University of Minnesota.

FFCs administered the intake and follow-up assessments. They served as active consultants to the couple relationship, helping the couple set goals and then teaching relationship skills and connecting couples to other community resources through a project social worker in order to meet the goals of the couple. FFCs averaged 11 visits per couple totaling an average of 17.1 hours spent in face to face interaction with each couple, using a variety of assessment and relationship-building tools from PREPARE (Olson, 2006), the PREP program (Markman, Stanley & Blumberg, 1994), Gottman’s work (1999), Fowers’ work (2000), and basic family budgeting.

In addition to the in-home intervention work, there was a series of 11 optional group education workshops which were formed in response to the need many of the couples expressed to get to know and learn from other couples in their situation. These workshops, named “Couples Connections,” were the brainchild of a group of four participant couples who had been brought together to help give shape to the future of the FFP and are an illustration of the organic nature of the project. Each workshop had a topic of the night which was chosen by the participant couples. Topics included a wide range from money matters to physical intimacy and from parenting together to commitment. A short educational talk on the topic was given by the project principal investigator and the attending couples were then engaged in small group and couple exercises to provide further insight on the topic. Married mentor couples were present as full participants so the couples could interact with exemplar couples. Time was also
given for socialization and a light meal and child care were provided. In all, 29 couples attended at least once, representing 30% of all couples participating in the FFP. Each attending couple attended an average of three Couples Connections; 67% of couples who attended one workshop returned for more.

The Family Formation Project also built in a protocol for working with couples who decided to break up. When a couple broke up, their FFC met with each member of the couple separately to help each individual connect to community resources and to encourage and coach in positive co-parenting strategies. The FFP considered it a positive outcome if both parents remained an active, positive part of their child’s life in the face of dissolution of the parental romantic relationship.

*Outcomes Study Design*

The focus on a community approach to building the intervention called for quasi-experimental methods to study the effectiveness of the program (Dion, 2005). Quasi-experimental methods provide an opportunity to test for generalizable inferences given that appropriate theory is built between the proposed cause and the effect and that confounding alternative hypotheses are dealt with (Cordray, 1986). One method of quasi-experimental research in community interventions is to use a comparison group drawn from a similar community (Skara & Sussman, 2003). The use of multiple comparison groups, even from secondary data, can be used to help strengthen the quasi-experimental design, but the use of such depends on the comparability of the samples (Shaddish, Cook, & Campbell, 2002).

The Family Formation Project’s design allows for a quasi-experimental method utilizing the Fragile Families Study sample and the Building Strong Families control group in a cohort control group quasi-experimental research design (Shadish, Cook, & Campbell, 2002). This design is represented in Figure 1, using notation in the tradition of
Campbell and Stanley (1963) and is a variation of their “nonequivalent control group” design. Each “O_t” stands for an observation point at time “t.” The sequential numbers represent the temporal ordering of the observation times. The “X” represents an intervention. The fact that observations are in three sets (on different lines) represents that the observations were made on three separate groups. The dashed line separating the groups indicates differences in sampling. Observations 1 and 2 are the Fragile Families and Child Well-being Study (FFCWS) initial and one-year follow-up data collection time points. Observations 3 and 5 are the Family Formation Project (FFP) intake assessment and one-year follow-up with the intervention intervening. Observations 4 and 6 are the Building Strong Families (BSF) control group intake and 15-month follow-up points. The temporal ordering of the three studies shows that the FFCWS began and concluded (the one-year follow-up) prior to the beginning of the FFP and the BSF. The BSF project began shortly after the FFP and designed follow-up data to be collected at 15 months instead of 12 months as the FFP and FFCWS had designed.

Figure 1a: FFCWS & FFP

Each of these control groups has particular strengths and limitations as a control group for the FFP. For instance, FFCWS subjects and FFP participants answered many of the same questions about relationships, giving the strength of comparable measures. However, FFCWS subjects were not volunteering for a couple relationship education (CRE) intervention. BSF study control group participants, on the other hand, did
volunteer for a CRE intervention and were randomly assigned to the control group, which received no intervention from the BSF program. However, FFP participants were not administered the same assessments as the BSF participants because BSF results were not necessarily expected to be available and thus it was not thought of as a possible control group when the Family Formation Project began. Additionally, raw data from the BSF are not available—thus only published percentages for outcome variables can be used in this comparison.

To increase the similarity of the two national control groups to the sample in the current study, the method of categorizing cities used by the FFCWS (Reichman, Teitler, Garfinkel, & McLanahan, 2001) was used to determine which of the FFCWS cities and BSF sites were closest to the FFP service area. This categorization was based on state welfare generosity (high, moderate, low), the local labor market (strong, average, weak), and stringency of child support enforcement policies (strict, moderate, lenient) using information published by the U.S. government. The same governmental sources were consulted for the current study. The service area for the FFP was categorized as “high” for welfare generosity, “strong” for labor market, and “strict” for child support enforcement stringency. The best match from the FFCWS was Milwaukee, WI which was also “high” in welfare generosity, “strong” for labor market, and “strict” for child support enforcement stringency. Boston, MA was also in the same category set but fewer births were sampled there and Milwaukee was closer geographically, so the Milwaukee respondents were chosen as the comparison sub-sample from the FFCWS.

None of the BSF sites was a perfect match with the FFP service area. The “distance” each site was from the FFP in the categorization scheme was calculated by assigning a difference of “1” if the site was one designation away (e.g., moderate instead of high for welfare generosity) and “2” if the site was two designations away (e.g., weak
instead of strong for labor market strength). The total distance for the three categorization areas was then summed. This resulted in a four-way tie—four BSF sites were each a distance of “3” away from the FFP site (Baltimore, MD; Orange and Broward Co., FL; Allen, Marion, and Lake Co., IN; and Oklahoma City, OK). To break this tie, a secondary method for determining the best match, not employed by the FFCWS, was then used. This method was to average the numbers used in determining the designation for each category: a) the employment rate, b) the dollar value of the average monthly welfare payment divided by the median monthly rent in the city or counties weighted by number of rental units in the city/counties, and c) the average for three measures of child support enforcement (see data for each of these in Appendix A). By this method the FFP service area had an average of 0.851. The closest BSF site was Baltimore, MD with an average of 0.739; the next closest was 0.706. Thus, the BSF Baltimore control group participants were chosen as the control group match for comparison with the FFP.

Participants

Ninety-six couples were recruited for participation in the Family Formation Project. All 96 couples indicated at recruitment that they wanted to stay together although some were in relationship trouble: 84 (87.5%) said they were romantically involved on a steady basis, 10 (10.4%) said they were in an “on again, off again” relationship, one (1%) said they were just friends, and one (1%) said they hardly ever talked to each other. Participant couples represented multiple ethnic groups and there was a wide spread in age, relationship length, education level and income level. Table 1 contains demographic information for the mothers and fathers participating in the FFP.

Thirty-six of the FFP couples (37.5%) were biracial (each member reported being of differing race than the other), 31 (32.3%) were Caucasian, 22 (22.9%) were African American, and 3 (3.1%) were other.
American, three (3.1%) were Native American, two (2.1%) were Hispanic, and in two couples (2.1%) both the male and female had marked “Other” as their race.

Most of the couples were in poverty—61.4% of the mothers and 59.4% of the fathers earned less than $20,000 per year. Only 12.5% of the mothers and 22.9% of the fathers earned more than $35,000 per year. Just over half (53.1%) of the mothers and a third (35.4%) of the fathers received some type of government welfare. A sizeable percentage of fathers (21.8%) had not finished high school, along with 12.5% of mothers. More than half of mothers, 54.2%, and just less than half (45.8%) of fathers had attended some post-high school training, whether technical or community college or a four year college.

The mothers’ average age was 26.1 years, ranging from 18 to 41 years. The fathers’ average age was 27.8 years, ranging from 19 to 51 years. The couples considered themselves in a couple relationship for 6 months up to 11 years by the mother’s report—obviously, some couples had become pregnant before considering themselves in a couple relationship. Several couples had multiple children together: 15 couples had two children, two couples reported three children, and two couples reported having four children together. Twenty-nine (29) mothers reported having had children from previous partners (range from 1 to 6 children with previous partners). Thirty-one (31) fathers reported having had children from previous partners (range from 1 to 13 children with previous partners).
A comparison between the demographics of the FFP participants and those in the control groups will be presented in the dissertation. Differences will be analyzed to see if the matching process resulted in groups comparable on demographic variables in addition to the environmental variables the match was made on.

### Measures

**Outcome variables.** Two outcome variables will be used for Aims 1 and 2: Relationship Stability and Married. Participants answered the following at intake and one year follow up: single item on the one-year follow-up questionnaire: “What is your current relationship with your partner from our previous survey?” and given these options: married, engaged, divorced/separated, romantically involved, just friends or not in any kind of relationship. This is the same item used in the FFCWS study except for

<table>
<thead>
<tr>
<th>Table 1: Family Formation Project Participant Demographics</th>
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<tbody>
<tr>
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<tr>
<td><strong>Mothers (n=96)</strong></td>
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<tr>
<td><strong>Fathers (n=96)</strong></td>
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<tr>
<td><strong>Average Age (years)</strong></td>
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<tr>
<td>26.1 (s.d.=5.2)</td>
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<tr>
<td>27.8 (s.d.=6.3)</td>
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<tr>
<td><strong>Average Length of Relationship (years)</strong></td>
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<td>3.6 (s.d.=2.6)</td>
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<tr>
<td>3.8 (s.d.=2.7)</td>
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<tr>
<td><strong>Average Number of Children for Current Relationship</strong></td>
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<tr>
<td>1.25 (s.d.=.62)</td>
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<tr>
<td>1.23 (s.d.=.61)</td>
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<tr>
<td><strong>Race</strong></td>
</tr>
<tr>
<td>White</td>
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<tr>
<td>52.1%</td>
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<tr>
<td>38.5%</td>
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<tr>
<td>Black</td>
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<tr>
<td>26.0%</td>
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<tr>
<td>36.5%</td>
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<tr>
<td>Native American</td>
</tr>
<tr>
<td>7.3%</td>
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<tr>
<td>5.2%</td>
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<tr>
<td>Other</td>
</tr>
<tr>
<td>14.5%</td>
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<tr>
<td>19.8%</td>
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<tr>
<td><strong>Educational Attainment</strong></td>
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<tr>
<td>&lt; High School</td>
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<tr>
<td>12.5%</td>
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<tr>
<td>21.8%</td>
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<tr>
<td>At Least Some College, including community/technical college</td>
</tr>
<tr>
<td>54.2%</td>
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<tr>
<td>45.8%</td>
</tr>
<tr>
<td><strong>Earned Income</strong></td>
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<tr>
<td>0—did no regular work for income</td>
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<tr>
<td>12.5%</td>
</tr>
<tr>
<td>5.2%</td>
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<tr>
<td>$&lt;10,000</td>
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<tr>
<td>35.4%</td>
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<tr>
<td>37.5%</td>
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<tr>
<td>$10,000-$19,999</td>
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<tr>
<td>13.5%</td>
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<tr>
<td>16.7%</td>
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<tr>
<td>$20,000-$34,999</td>
</tr>
<tr>
<td>26.0%</td>
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<tr>
<td>17.7%</td>
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<tr>
<td>$≥35,000</td>
</tr>
<tr>
<td>12.5%</td>
</tr>
<tr>
<td>22.9%</td>
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<tr>
<td><strong>Receiving Government Welfare</strong></td>
</tr>
<tr>
<td>53.1%</td>
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<tr>
<td>35.4%</td>
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<tr>
<td><strong>Ave # Children with Previous Partners</strong></td>
</tr>
<tr>
<td>1.6 (s.d.=1.2, n=29)</td>
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<tr>
<td>2.1 (s.d.=2.4, n=31)</td>
</tr>
</tbody>
</table>
the addition of the category “engaged.” For the present study Relationship Stability will
be a dichotomous measure—respondents will be coded as (1) still together if they
indicated they were married, engaged, or romantically involved; or (0) broken up if they
indicated they were divorced/separated, just friends, or not in any kind of relationship at
follow-up. Married will be a dichotomous measure—respondents will be coded as (1)
made if they indicated they were married, or (0) not married if they indicated they were
divorced/separated, romantically involved, just friends, or not in any kind of relationship
at follow-up.

Additional outcome information was available from Family Formation
Coordinators who were in ongoing contact with participants and learned of couples’
relationship transitions after the twelve month follow up and even when some couples
did not participate in the follow up assessment because they moved or the project lost
contact with them for periods of time. Because these had participated and received an
intervention, their breakup status as reported by the Family Formation Coordinator was
 counted for the outcome variables of Relationship Stability (still together or broken up)
and Married/Not married. Transitions known to the FFP occurring shortly after the follow-
up were also included in the outcome data. For instance, one couple completed the
follow-up questionnaire while consulting with their Family Formation Coordinator about
their wedding arrangements—they married a month later. In other words, the last known
data available on relationship outcomes was used.

The Building Strong Families outcome measures of Relationship Stability and
Married were similar to those of the FFCWS and the FFP. Respondents reported
whether they were “still romantically involved” and whether they were married. For the
present study, BSF control group respondents who indicated being still romantically
involved will be coded as (1) still together for Relationship Stability; those who indicated
being not romantically involved anymore will be coded (0) for broken up. BSF control
group respondents who indicated they were married will be coded (1) for married,
otherwise they will be coded (0) for not married.

One outcome variable will be used in accomplishing Aim 3: Relationship
Satisfaction. Because Aim 3 focused on whether FFP participants experienced the
normative decline in relationship satisfaction after the birth of a child, only FFP data will
be used for the Relationship Satisfaction variable. Relationship Satisfaction for FFP
participants was measured using the DAS Dyadic Satisfaction Subscale, a widely used
measurement of couple adjustment (Spanier, 1976). This scale was administered in both
intake and follow-up assessments. The Dyadic Adjustment Scale–Satisfaction Subscale
can range from 0 to 50, with higher numbers indicating higher relationship satisfaction.
Based on scale norms, the average score for stable married couples is 40 and for
recently divorced couples, 22 (Spanier & Filsinger, 1983).

Assessing threats to validity. Because the intervention and control groups are
separate cohorts and were not assigned to their respective groups randomly in the same
study, selection threats to the validity of potential claims that the FFP assisted couples in
staying together and/or marrying exist (Trochim, 2006) and potential confounding
outcome predictors must be explicitly examined (Shadish, Cook, & Campbell, 2002;
Cordray, 1986; Campbell & Stanley, 1963). The nonequivalent control group design
limits the examination to an analysis of means rather than slope and curve comparisons
(Caporaso, 1973). Use of the BSF control group will help address the selection threat to
validity stemming from the fact that the FFCWS participants were recruited for a survey
study and not an intervention study.

Selection threats to validity due to other variables which may account for
relationship stability and marriage among FFP participants can be addressed by
comparing means for variables which have shown predictive of relationship stability and marriage among fragile families to see if differences exist between the FFP participants (intervention) and FFCWS (control) respondents. Where there are group differences, these will be noted as potential limitations in the dissertation. Comparisons on these other predictive measures will not be made between the FFP and BSF due to differences in measurement and having access only to published outcome data.

The following eight variables, predictive of relationship stability and marriage among fragile families, were measured using the same questions in both the FFCWS and the FFP: a) mother report of general distrust of males, b) the father abusing alcohol and drugs, c) father having multiple partner fertility, d) couples who had more than one child together, e) attitudes toward marriage, f) mothers’ church attendance, g) presence of intimate partner violence, and h) greater supportiveness felt from the partner.

Mother’s distrust of men in general was measured by two items answered on a 4-point Likert scale (strongly agree, agree, disagree, strongly disagree): a) In a dating relationship a man is largely out to take advantage of a woman; and, b) Men cannot be trusted to be faithful. Fathers reported on their alcohol and drug abuse in a dichotomous measure: In the past year, has drinking or using drugs ever interfered with your work on a job or with your personal relationships? The father having children by other women than the current partner was dichotomously measured by asking the male about the child(ren) the current couple had together then asking, Do you have any other biological children? Couples were also asked if they had more than one child together—this is also a dichotomous measure.

Attitudes toward marriage were measured using two questions answered on a 4-point Likert scale (strongly agree, agree, disagree, strongly disagree): a) It is better for a couple to get married than to just live together; and b) It is better for children if their
parents are married. Greater agreement indicated more positive views toward marriage. Mothers’ church attendance was measured by one item: About how often do you attend religious services, answered in a 5-point continuous variable from “not at all” to “once a week or more.” Intimate partner violence was measured by asking how often the partner “hit or slapped you when he/she was angry” and was answered on a three point scale: never, sometimes or often. Finally, supportiveness felt from the partner was measured by averaging four items, each on a 3-point frequency scale (never, sometimes, often): how often would you say that [your partner] is a) fair and willing to compromise when you have a disagreement; b) expresses affection or love for you; c) insults or criticizes you or your ideas (reverse coded); and d) encourages or helps you to do things that are important to you?

<table>
<thead>
<tr>
<th>Table 2: Measures</th>
<th>Family Formation Project</th>
<th>Fragile Families and Child Well-being Study</th>
<th>Building Strong Families</th>
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</thead>
<tbody>
<tr>
<td><strong>Outcomes</strong></td>
<td></td>
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<tr>
<td><strong>Relationship Stability</strong></td>
<td>1=Still together (married, engaged, romantically involved) 0=Broken up (divorced/separated, just friends or not in kind any relationship)</td>
<td>1=Still together (married, romantically involved) 0=Broken up (divorced/separated, just friends or not in kind any relationship)</td>
<td>1=Still together (still together or married) 0=Broken up (not still together)</td>
</tr>
<tr>
<td><strong>Marriage</strong></td>
<td>1=Married (married) 0=Not married (engaged, romantically involved, divorced/separated, just friends or not in kind any relationship)</td>
<td>1=Married (married) 0=Not married (romantically involved, divorced/separated, just friends or not in kind any relationship)</td>
<td>1=Married (married) 0=Not married (not married)</td>
</tr>
<tr>
<td><strong>Relationship Satisfaction</strong></td>
<td>0-50: DAS Dyadic Satisfaction Subscale</td>
<td>N/A—will not be used in comparison to FFP</td>
<td>N/A—will not be used in comparison to FFP</td>
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<tr>
<td><strong>Potential confounds to be assessed for similarity between FFP &amp; FFCWS</strong></td>
<td></td>
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</tr>
<tr>
<td>Category</td>
<td>Description</td>
<td>Scale</td>
<td>Notes</td>
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<tr>
<td>-----------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>--------------------------------------------</td>
<td>---------------------</td>
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<tr>
<td>Mother report of general distrust of males</td>
<td>1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree</td>
<td>(average of 2 items)</td>
<td>(same as FFP)</td>
</tr>
<tr>
<td></td>
<td>a) In a dating relationship a man is largely out to take advantage of a woman; and, b) Men cannot be trusted to be faithful</td>
<td></td>
<td>(not available)</td>
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<td>Father abuses alcohol or drugs</td>
<td>0=No, 1=Yes</td>
<td></td>
<td>(same as FFP)</td>
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<td></td>
<td>In the past year, has drinking or using drugs ever interfered with your work on a job or with your personal relationships</td>
<td></td>
<td>(not available)</td>
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<tr>
<td>Father having multiple partner fertility</td>
<td>1=Father has child with another partner</td>
<td></td>
<td>(same as FFP)</td>
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<tr>
<td></td>
<td>0=Father does not have any children with any other partners</td>
<td></td>
<td>(not available)</td>
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<tr>
<td>Couples who had more than one child together</td>
<td>1=Couple has multiple children together</td>
<td></td>
<td>(same as FFP)</td>
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<tr>
<td></td>
<td>0=Couple does not have multiple children together</td>
<td></td>
<td>(not available)</td>
</tr>
<tr>
<td>Attitudes toward marriage</td>
<td>1=strongly disagree, 2=disagree, 3=agree, 4=strongly agree</td>
<td>(average of 2 items)</td>
<td>(same as FFP)</td>
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<td></td>
<td>a) It is better for a couple to get married than to just live together; and b) It is better for children if their parents are married</td>
<td></td>
<td>(not available)</td>
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<tr>
<td>Mothers' church attendance</td>
<td>1=not at all, 2=hardly ever, 3=several times a year, 4=several times a month, 5=once a week or more</td>
<td></td>
<td>(same as FFP)</td>
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<tr>
<td></td>
<td>About how often do you attend religious</td>
<td></td>
<td>(not available)</td>
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<tr>
<td>services</td>
<td>Intimate partner violence</td>
<td>Supportiveness felt from the partner</td>
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<tr>
<td>0=never, 1=sometimes, 2=often</td>
<td>How often the partner “hit or slapped you when he/she was angry”</td>
<td>How often would you say that [your partner] is a) fair and willing to compromise when you have a disagreement; b) expresses affection or love for you; c) insults or criticizes you or your ideas; and d) encourages or helps you to do things that are important to you.</td>
<td></td>
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<tr>
<td>(same as FFP)</td>
<td>(same as FFP)</td>
<td>(not available)</td>
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Analysis Plan

*Statistical Procedures*

To determine whether the FFP outcome results differ from the control group outcomes, the relative risk ratio will be used. Relative risk is used to compare two groups (I=intervention and C=control) on the prevalence of an event by assessing whether or not the occurrence of the event in the two groups is independent (Rosner, 2006; use of the relative risk ratio is common in epidemiological literature (Le, 1998)—for instance, regarding risk of disease between smokers and non-smokers; for an example see Gandini, Botteri, Iodice, Boniol, Lowenfels, Maisonneuve, & Boyle, 2007). For the current study two events are being separately assessed: relationship stability and
marriage. The relative risk ratio (RR) is calculated by dividing the percentage of group I who experience the event by the percentage of group C who experience the event: RR = \( \frac{I_{\text{event}}/I_{\text{total}}}{C_{\text{event}}/C_{\text{total}}} \). In this study the FFP is the intervention group and will be compared to two different quasi-experimental control groups: a) the FFCWS Milwaukee subsample and b) the BSF study Baltimore control group subsample. Neither of the control groups were part of a CRE intervention. An RR of one (1) would indicate no greater or lesser likelihood of stability/marriage for either those who were in the intervention group or the control group—in other words, the event of stability/marriage would be independent of the intervention (Rosner, 2006). An RR greater than 1 would indicate that those in the intervention group are RR times more likely to experience relationship stability/marriage than the control group. The statistical significance of the RR will be estimated by a 95% confidence interval. The analysis plan is specified for each of the specific aims of the study below.

_Aim 1_

The relative risk ratio with a 95% confidence interval will be used to compare the outcome of Relationship Stability between the FFCWS Milwaukee subsample and the FFP and between the BSF study Baltimore control group subsample and the FFP.

_Aim 2_

The relative risk ratio with a 95% confidence interval will be used to compare the outcome of Marriage between the FFCWS Milwaukee subsample and the FFP and between the BSF study Baltimore control group subsample and the FFP.

_Aim 3_

A _t_-test with a 95% confidence interval will be used to compare the reported Relationship Satisfaction of FFP participants at intake with the reported Relationship Satisfaction at follow-up.
Potential Problems and Alternative Strategies

The central hypothesis of this proposed research is that couple relationship education (CRE) and support will promote relationship stability and marriage within fragile families and that couples who stay together will not experience a decrease in relationship satisfaction. Although the literature supports this hypothesis in mainstream populations, the current research may show that it is not supported in the sample of fragile families. Should the central hypothesis not be supported this would also be a substantial finding. It would support the findings of the BSF study and show that a different type of intervention (e.g., highly tailored, in-home, participant-driven) did not promote couple relationship stability and marriage among fragile families either. This would add support to the contention that something else other than CRE may need to be tried to assist fragile family couples in their goals for relationship stability and marriage—for example, economic supports (Kalil & Ryan, 2010).

Another potential problem for the current research is that the intervention group and the quasi-experimental control groups may not be similar enough for comparison. With the non-equivalent groups design, a statistical model which controls for confounding variables cannot be used (Caporaso, 1973) thus the comparability of the groups is the control. If the groups are comparable in the potential confounding variables, then there is no threat to validity from those variables. However, if there are differences, then these differences will have to be noted as limitations. Past research can be consulted to assess how strong an effect these confounding variables have had in other research as a gauge to how much of the difference in outcome in the current research might be attributable to the confounds on which the groups are dissimilar.
References


Appendix A: Comparing BSF service areas with FFP service area using method of comparison from the Fragile Families and Child Well-being Study (FFCWS)

<table>
<thead>
<tr>
<th>Area</th>
<th>Labor market strength:</th>
<th>Welfare generosity:</th>
<th>Child support enforcement:</th>
<th>Method for matching a BSF site with the FFP service area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1) Unemployment rate for the city (or average for the counties).</td>
<td>1) The dollar value of the monthly welfare payment for a family of four (this is state level data), and (2) the dollar value of the monthly payment divided by the median monthly rent in the city (or average for the counties weighted by number of rental units in the counties).</td>
<td>1) The paternity establishment rate (average for 1994 &amp; 1995), (2) the proportion of AFDC cases with a child support award, and (3) the proportion of AFDC cases with a payment. (These three measures are all state level data.)</td>
<td># of “steps” away from the FFP site based on the categorization for each of the previous 3 columns (see number—0, 1, or 2—after the category assigned in each column)—this leads to a 4-way tie to be closest.</td>
</tr>
<tr>
<td>Family Formation Project (Twin Cities, Minnesota—5 counties—Henn, Ramsey, Anoka, Dakota, Wash.)</td>
<td>2) 4.6 (95.4%) Strong 3) $532 4) 1.10 (532/483) High</td>
<td>1) 53% 2) 49% 3) 48% Strict (50%)</td>
<td>0</td>
<td>Take the average of the 3 measures for child support enforcement (in parentheses by classification), the percentage in #2 for Welfare generosity, and the employment rate (in parentheses by the unemployment rate) and average these three measures to find which area is closest to FFP service area. This shows that Baltimore is the closest, followed by Oklahoma city then the Indiana counties.</td>
</tr>
<tr>
<td>Atlanta, GA</td>
<td>2) 6.5 (93.5%) Average (1) 3) $280 4) .66 (280/422) Low (2)</td>
<td>1) 49% 2) 37% 3) 37% Moderate (41%) (1)</td>
<td>4</td>
<td>.668</td>
</tr>
<tr>
<td>Baltimore, MD²</td>
<td>2) 9.4 (90.6%) Average (1) 3) $373 4) .90 (373/413) Moderate (1)</td>
<td>1) 40% 2) 62% 3) 22% Moderate (41%) (1)</td>
<td>3</td>
<td>.739</td>
</tr>
</tbody>
</table>

² When I made out this rating chart, I had forgotten that Baltimore was actually one of the FFCWS cities. In the FFCWS design article (Reichman, Teitler, Garfinkel & McLanahan, 2001) there is a chart with the sampled cities displayed in a grid, showing their classification. I classified Baltimore in my work here the same as it is shown in the design article, giving me a greater sense of external validity to what I have done here.
<table>
<thead>
<tr>
<th>Location</th>
<th>Score</th>
<th>Average</th>
<th>Low</th>
<th>% Lenient</th>
<th>% Strict</th>
<th>Risk</th>
<th>Median</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baton Rouge, LA</td>
<td>6.0</td>
<td>(94%)</td>
<td></td>
<td>38%</td>
<td>0%</td>
<td>4</td>
<td>.597</td>
</tr>
<tr>
<td>Orange &amp; Broward Co., FL</td>
<td>7.0</td>
<td>(93%)</td>
<td></td>
<td>19%</td>
<td>12%</td>
<td>3</td>
<td>.64</td>
</tr>
<tr>
<td>Houston, TX</td>
<td>6.1</td>
<td>(93.9%)</td>
<td></td>
<td>38%</td>
<td>25%</td>
<td>4</td>
<td>.58</td>
</tr>
<tr>
<td>Allen, Marion, Lake Co., IN</td>
<td>6.6</td>
<td>(93.4%)</td>
<td></td>
<td>15%</td>
<td>44%</td>
<td>3</td>
<td>.695</td>
</tr>
<tr>
<td>Oklahoma City, OK</td>
<td>6.1</td>
<td>(93.9%)</td>
<td></td>
<td>30%</td>
<td>40%</td>
<td>3</td>
<td>.706</td>
</tr>
<tr>
<td>San Angelo, TX</td>
<td>5.7</td>
<td>(94.3%)</td>
<td></td>
<td>38%</td>
<td>25%</td>
<td>4</td>
<td>.594</td>
</tr>
</tbody>
</table>