Healthy Marriage and Relationship Education with Integrated Economic Stability Services: The Impacts of Empowering Families

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Introduction

Research suggests that children fare best when raised in stable, low-conflict, two-parent families. However, economic and other challenges faced by families with low incomes can make it hard for them to achieve a stable, low-conflict family environment. Couples facing economic stressors, such as poverty and debt, can experience lower relationship quality and stability. In addition, these stressors can consume their mental energy, requiring them to focus only on their most pressing needs. Therefore, couples with low incomes may have limited mental bandwidth to focus on their relationships or to participate in or benefit from relationship education programs.

Recognizing this challenge, the Office of Family Assistance (OFA) within the Administration for Children and Families (ACF) at the U.S. Department of Health and Human Services has funded healthy marriage and relationship education (HMRE) programs that integrate HMRE and economic stability services. Previous studies have shown that HMRE programs that offer job and career advancement services can meaningfully improve the relationships of couples with low incomes; however, these programs have been less successful at improving labor market outcomes.

This study builds on earlier research by assessing the effectiveness of an HMRE program that aimed to offer more intensive economic stability services than previously studied HMRE programs and that integrated those services more fully with HMRE content. To conduct the study, ACF's Office of Planning, Research, and Evaluation (OPRE), with funding from OFA, engaged Mathematica and its partner Public Strategies to collaborate with The Parenting Center in Fort Worth, Texas, a community-based social service provider, to conduct an impact study of its Empowering Families program. Empowering Families integrates economic stability services—including, employment services and financial education—with HMRE content for couples with low incomes who are raising children together. The Empowering Families program included an eight-session workshop that integrated HMRE content with information on financial literacy and job and career advancement. The HMRE content came from *Family Wellness,* a relationship skills and parenting curriculum designed to promote healthy family interactions. The program supplemented workshops with one-on-one services, including case management, financial coaching, and employment counseling.

Primary research question

This report addresses the following primary research question:

- What are the impacts of the Empowering Families program on couples' relationship status and quality, co-parenting quality, connection to the labor market, labor market success, and family economic well-being?

Purpose

This report is the second in a series of two reports on the implementation and impacts of Empowering Families. It describes the program's impacts after one year. These impacts were estimated by comparing the outcomes of couples who were randomly assigned to either a group that was offered Empowering Families services or a control group that was not. The report also provides information on program implementation and costs and documents the study methods. An earlier report provided detailed information on the program's design and implementation during the first year of the impact study.

Mathematica and Public Strategies conducted this study as part of the Strengthening Relationship Education and Marriage Services (STREAMS) evaluation for ACF.

What we learned

- Empowering Families was successful in its central goal of strengthening couples' relationships. The program improved all five dimensions of relationship quality we examined, including the level of support and affection partners felt toward each other, their use of constructive conflict behaviors, their avoidance of destructive conflict behaviors, and the level of commitment and happiness they felt toward their relationship one year after entering the program. It also improved the quality of couples' co-parenting relationships.
- Couples in both research groups had similar rates of marriage and romantic involvement at the one-year follow-up. Subgroup analysis suggested that Empowering Families increased marriage among initially unmarried couples; among those initially married, both research groups were equally likely to remain together.
- Empowering Families and control group members reported equally high levels of having a job or looking for one. Average earnings were also similar for both research groups during the one-year follow-up period.
- Empowering Families reduced the number of economic hardships experienced by families in the program. Those in the Empowering Families group reported 12 percent fewer material hardships during the one-year follow-up period than control group families reported. Exploratory analyses suggest that Empowering Families improved participants' ability to manage their money, particularly for women.
- Exploratory analyses also suggested that Empowering Families increased disapproval of couple violence for both women and men; however, rates of intimate partner violence were unaffected. The program reduced depressive symptoms for men but not for women.

Methods

Between September 2016 through December 2018, 879 couples enrolled in the study. To be eligible for program services, both members of the couple had to (1) be age 18 or older, (2) report that they were in a committed relationship with their partner, (3) be interested in participating in a program that offered both relationship skills and economic stability services, and (4) report that they were not currently experiencing domestic violence. In addition, because a key goal of the program was to improve child well-being, at least one member of the couple needed to have a biological or adopted child who was younger than 18 and lived with that member of the couple at least half-time. The study team randomly assigned couples to one of two groups: (1) a program group that was offered participation in Empowering Families or (2) a control group that was not offered the program but was free to seek other services available in the community. For the impact analysis presented in this report, we used data from a baseline survey that was administered at the time of enrollment and a one-year follow-up survey. A total of 791 couples had at least one partner respond to the follow-up survey for a response rate of 90 percent. The response rate was 86 percent among women in the study and 77 percent among men. Response rates were similar for the two research groups.

Considerations for HMRE programs and research

The Empowering Families program provided an integrated package of relationship education and economic stability services to couples with low incomes raising children together. Impact findings indicate that Empowering Families was successful in its central goal of strengthening couples' romantic relationship quality, as well as their co-parenting relationship. Moreover, these effects were larger than those found in earlier studies of HMRE programs for couples with low incomes.

Why did Empowering Families have larger effects on relationship quality than those found in earlier studies? One possibility is that the *Family Wellness* curriculum might be particularly effective at improving relationship quality for couples with low incomes. This study provides the first rigorous evidence of the curriculum's effects. Another possibility is that Empowering Families' success in reducing couples' economic stresses—possibly due to the program's more intensive focus on economic stability services—may have in turn improved couples' relationship quality. Lower stress may have also made it easier for couples to absorb and apply the relationship education they received.

The program had no overall impact on couples' relationship status at the one-year follow-up period. However, exploratory subgroup analysis suggests that Empowering Families did increase the likelihood of initially unmarried couples getting married during the one-year follow-up period. This exploratory finding is notable because earlier research on HMRE programs for couples with low incomes has not found impacts on marriage rates among those who were initially unmarried.

Empowering Families did not improve labor market outcomes at the one-year follow-up. This finding is similar to earlier research on HMRE programs that offered job and career advancement services and is consistent with the fact that relatively few programs offering job and career advancement services to populations with low income have been shown to increase earnings.

Despite its lack of impacts on participants' earnings, Empowering Families reduced economic hardship among participating families. How might this pattern of impacts have emerged? One possibility is that the program's financial literacy services helped participating couples avoid certain economic hardships by managing their limited resources more effectively, an explanation that is consistent with exploratory analysis showing favorable impacts on participants' ability to manage their money. The program's strong effects on relationship quality may also have played a role. If couples were able to manage conflict and communicate more effectively, they might be able to manage their joint finances better and thus reduce their family's exposure to economic hardship. In addition, the integrated approach to relationship education and financial literacy offered by Empowering Families may have helped couples apply these newly learned relationship skills to the financial aspects of their lives, such as joint budgeting and money management.

This pattern of findings—reduced economic hardship, improved management of money, but no increase in participants' earnings—points to the potential importance of the program's financial literacy services in improving participants' economic outcomes. Future HMRE programs should consider integrating financial literacy services with relationship education and partnering with organizations experienced in providing such services. These results also suggest that HMRE programs for couples that supplement their services with economic stability content might want to focus more on financial literacy services than employment services. Future research should examine whether other HMRE programs with strong financial literacy components have similar success in improving the economic well-being of their participants.

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Introduction

Research suggests that children fare best when raised in stable, low-conflict, two-parent families (Amato 2005; Carlson and Corcoran 2001; Brown 2010; Kim 2011). However, economic and other challenges faced by families with low incomes can make it hard for them to achieve a stable, low-conflict family environment (Bramlett and Mosher 2002; Conger et al. 2010). Couples facing economic stressors, such as poverty and debt, can experience lower relationship quality and stability (Conger et al. 1999; Dew and Yorgason, 2010; Hardie and Lucas, 2010; Williamson et al., 2013; Lucas et al., 2020). In addition, these stressors can consume their mental energy, requiring them to focus only on their most pressing needs (Mullainathan and Shafir 2013; Haushofer and Fehr 2014; Shah et al. 2015). Therefore, couples with low incomes may have limited mental bandwidth to focus on their relationships or to participate in or benefit from relationship education programs.

Recognizing this challenge, the Office of Family Assistance (OFA) within the Administration for Children and Families (ACF) at the U.S. Department of Health and Human Services has funded healthy marriage and relationship education (HMRE) programs that integrate HMRE and economic stability services (OFA 2015, 2020). OFA's most recent funding opportunity announcement (OFA 2020) states the following:

> In recent years, ACF has emphasized the importance of activities related to job and career advancement for HMRE programs, since economic pressures and instability often contribute to relationship and marital dysfunction … ACF is particularly interested in programs that will enhance the employability skills of low-income participants and help them secure employment, as well as financial literacy activities to strengthen budgeting skills, financial planning and management, and asset development when offered in conjunction with any other activity(ies).

ACF has begun testing the effectiveness of supplementing relationship education with economic stability services in HMRE programs that serve couples with low incomes. ACF's Parents and Children Together (PACT) evaluation offered the first evidence of the effectiveness of this approach (Moore et al. 2018). The evaluation tested two programs that served a mix of married and unmarried couples with children. The study found that the programs improved multiple aspects of the couples' relationship quality (Moore et al. 2018). They also increased the likelihood that couples were married at the one year follow up, most likely a result of the programs helping initially married couples remain married. This impact was notable because earlier research on HMRE programs for couples with low incomes had not found impacts on marriage (Wood et al. 2012; Lundquist et al. 2014). The HMRE programs in PACT had more limited success in improving the economic outcomes of participants. There was mixed evidence of a modest effect on women's earnings and no evidence of an effect on men's earnings (Moore et al. 2018).

This study builds on the earlier research by assessing the effectiveness of an HMRE program that offered more intensive economic stability services and that integrated those services more fully with the HMRE content provided. ACF's Office of Planning, Research, and Evaluation (OPRE), with funding from OFA, engaged Mathematica and its partner Public Strategies to collaborate with The Parenting Center in Fort Worth, Texas, a community-based social service provider, to conduct an impact study of its Empowering Families program. Empowering Families integrates economic stability services—including, employment services and financial education—with HMRE content for couples with low incomes who are raising children together. The Parenting Center recruited couples who would benefit from both HMRE and economic stability services and the curriculum integrated these two types of services as much as possible.

Empowering Families is built on *Family Wellness*, a relationship skills and parenting curriculum designed to promote healthy family interactions (https://familywellness.com/). Earlier research on *Family Wellness* relied on pre-post designs and did not include comparison groups (Diouf and Kainady 2006; Devall 2011). Therefore, in addition to adding to the evidence base on integrating HMRE and economic stability services, findings from this study provide the first rigorous evidence of the effects of the *Family Wellness* curriculum.

This report examines the impacts of Empowering Families one year after couples enrolled in the study. It describes the couples who participated in the study, provides information on program costs and implementation, and documents the study methods. An earlier report provided detailed information on the program's design and implementation during the first 18 months of program operations (D'Angelo and Bodenlos 2020). In this report, we examine the extent to which Empowering Families improved couples' relationship status and quality, co-parenting quality, connection to the labor market, labor market success, and family economic well-being. We use follow-up survey data from almost 800 couples to compare the outcomes of those who were randomly assigned to either a group eligible for Empowering Families or a control group that was not eligible for the program. This study is part of the broader Strengthening Relationship Education and Marriage Services (STREAMS) evaluation conducted by Mathematica and Public Strategies for ACF.

About the STREAMS evaluation

Since the early 2000s, the Administration for Children and Families (ACF) in the U.S. Department of Health and Human Services has led a sustained effort to expand the available evidence on healthy marriage and relationship education (HMRE) programs. In 2015, ACF contracted with Mathematica and its partner, Public Strategies, to conduct the Strengthening Relationship Education and Marriage Services (STREAMS) evaluation to help identify strategies for improving the delivery and effectiveness of HMRE programs. The evaluation has a particular emphasis on understudied populations and program approaches not covered in ACF's prior federal evaluations. STREAMS includes in-depth process studies, random assignment impact studies, a rapid-cycle evaluation of text message reminders to improve attendance at HMRE group workshops, a formative evaluation of a facilitation training curriculum for HMRE programs for high school students, and predictive analytic modeling of attendance at HMRE group workshops. Learn more about the evaluation at https://www.acf.hhs.gov/opre/research/project/strengthening-relationship-education-and-marriage-services-streams

The Empowering Families program

The Parenting Center designed Empowering Families for couples who were economically disadvantaged and raising children together. It was offered as a voluntary program to couples living in and around Fort Worth, Texas, an urban area with residents from diverse racial and ethnic backgrounds. Recruiters worked to reach eligible couples in various locations in the community—including, family health clinics, local elementary schools, Head Start programs, malls, health or job fairs, churches, food banks, workforce centers, and community centers. To promote participation in all aspects of the program, The Parenting Center attempted to recruit couples who would benefit from both HMRE and economic stability services and to integrate relationship education, employment, and financial literacy services as much as possible.

Empowering Families offered couples four program components: (1) an eight-session couples workshop that integrated the *Family Wellness* HMRE curriculum with information about job and career advancement and financial literacy, (2) case management, (3) employment counseling and additional employment supports, and (4) financial coaching. The Parenting Center delivered the relationship skills education content. Two partner organizations—Pathfinders and the Community Learning Center, Inc. (CLC)—delivered the economic stability content. Pathfinders provided the financial literacy services, which included financial coaching and co-facilitation of group financial education. CLC provided the job and career advancement services, which included one-on-one work readiness services and co-facilitation of group employment education. CLC took over as the employment partner in May 2017 from a different organization (Catholic Charities) that had left the partnership after providing services for the first eight months of program operation. All *Family Wellness* workshops and supplementary services were provided in English and Spanish.

The eight-session couples workshop served as the core of Empowering Families (Table 1). The Parenting Center created the workshop by supplementing the *Family Wellness* HMRE curriculum with content on employment and financial literacy. Each session lasted two and a half hours. Six of the eight sessions (1, 2, 3, 5, 7, and 8) focused on relationships, parenting, and co-parenting. Session 4 focused on employment and was co-facilitated by a staff member from CLC. Session 6 focused on financial literacy and was co-facilitated by a staff member from Pathfinders.

Following program intake, program staff assigned couples to a case manager to help them navigate the Empowering Families program. Case managers aimed to meet with each couple monthly for six months, either in person at the program offices or by phone. During these meetings, case managers connected couples to staff at the partner agencies that provided employment counseling and financial coaching. They also referred couples to supportive services in the community (such as housing, food assistance, counseling) and helped them set relationship, employment, and financial goals.

The two partner organizations—CLC and Pathfinders—provided additional services to Empowering Families participants. CLC staff served as employment counselors who connected participants to the CLC job and career advancement services available through the program. CLC provided participants with work readiness services, including resume preparation, interview and soft skills training, job skills training, and job placement support. Program staff did not expect that all participants would take up the job and career advancement services because many would be satisfied with their current jobs or not looking for a job because they were caring for children. For this reason, Empowering Families set a goal of providing one-on-one employment counseling to 40 percent of participants. Staff from Pathfinders served as financial coaches for program participants. Empowering Families offered couples four individual sessions with a financial coach to help them identify financial goals and develop a customized plan to reach those goals. Program staff hoped that all couples would attend at least one session with a financial coach.

Table 1. Overview of Family Wellness workshop sessions

Session number	Session title	Description
1	Getting started: Being a strong team	Participants learned about relationship dynamics; skills such as listening and cooperation; and patterns that appear in healthy families, such as parents having equal power and mutual respect. Two staff from The Parenting Center co-facilitated the session.
2	Two worlds, one relationship	Participants learned the importance of understanding their partner. Each member of the couple discussed what he or she wanted from the relationship and heard from the other about personal expectations. Two staff from The Parenting Center co-facilitated the session.
3	Building a strong team	Participants learned the skills for communicating their needs and negotiating with each other. They also learned and practiced problem-solving skills. Two staff from The Parenting Center co-facilitated the session.
4	Vision for your career	Participants took part in an exercise to reflect on their current employment situation, identify their future goals, and develop action steps to reach those goals. One CLC staff co-presented the session with HMRE facilitators from The Parenting Center.
5	Parents as leaders/Parents as models/Parents in healthy families	Participants learned the dual role of parenting: to lead and to model. Participants learned how to make rules, stick together, and stay in charge as well as how to spend time with, listen to, and encourage their children. Two staff from The Parenting Center co-facilitated the session.
6	Financial literacy: Money matters and goal setting and budgeting	Participants learned how to create a family budget, save money, and make an action plan for reaching a goal. One Pathfinders staff member co-presented the session with HMRE facilitators from The Parenting Center.
7	As children grow	Participants learned how to problem solve as family dynamics change. Two staff from The Parenting Center co-facilitated the session.
8	Keeping the fire alive	Participants learned how to build and maintain intimacy and the importance of scheduling time together as a couple. Two staff from The Parenting Center co-facilitated the session.

Source: Empowering Families program documents.

Study design

To test the effectiveness of the Empowering Families program, the study team used a random assignment design. We compared the outcomes of couples who had been randomly assigned to one of two groups: (1) a program group that was offered participation in Empowering Families (hereafter referred to as the Empowering Families group) or (2) a control group that was not offered Empowering Families. Both groups were eligible to participate in any other services available in the community. Because the study team assigned couples to the two research groups at random, any difference in average outcomes between the two groups represents an unbiased estimate of the effect of the Empowering Families program. The remainder of this section describes the impact study's design.

Study enrollment

To be eligible for program services, both members of the couple had to (1) be age 18 or older, (2) report that they were in a committed relationship with their partner, (3) be interested in participating in a program that offered both relationship skills and economic stability services, and (4) report that they were not currently experiencing domestic violence. In addition, because a key goal of the program was to improve child well-being, at least one member of the couple needed to have a biological or adopted child

who was younger than 18 and lived with that member of the couple at least half-time. Recruitment occurred over a 27-month period, from September 2016 through December 2018. During this period, The Parenting Center enrolled 879 couples in the study.

Random assignment

When they identified an interested couple, recruiters scheduled the couple for an intake appointment at The Parenting Center to complete the study enrollment process. At this appointment, an intake specialist confirmed study eligibility. The intake worker then called Mathematica's survey center and connected each member of the couple to a trained interviewer who worked with them to complete the study consent process and a baseline survey (described below). After both members of the couple had completed the interview, the intake worker used a special module in ACF's Information, Family Outcomes, Reporting, and Management (nFORM) web-based data collection system to randomly assign the couple to either the Empowering Families group or the control group. After completing this process, the intake worker informed the couple of its assignment. As explained in the technical appendix to this report, the likelihood of being placed in the Empowering Families group or the control group varied over time to ensure adequate enrollment in the program. We accounted for this variation in our analysis of program impacts. Overall, 482 study couples were assigned to the Empowering Families group and 397 were assigned to the control group.

Data collection

The impact analysis presented in this report relied on data from two surveys administered to couples in both research groups:

1. **Baseline survey.** Staff from Mathematica's survey center administered a baseline survey to each member of the couple by telephone during the program intake appointment. The survey collected information on the couple's demographics, family backgrounds, relationship status and quality, children, employment, and well-being.
2. **One-year follow-up survey.** About 12 months after study enrollment, the study team attempted to contact couples in both research groups to complete a one-year follow-up survey, either online or by telephone. The survey collected information on a couple's relationship status and quality, co-parenting relationship, family economic well-being, and employment. About 90 percent of couples had at least one partner respond to the follow-up survey. Among women in the study, 86 percent responded. For men, the response rate was 77 percent. These response rates were similar for the two research groups. The technical appendix contains additional details on the survey administration procedures and response rates.

The initial study design called for supplementing the survey data with data from the National Directory of New Hires (NDNH), a database of wage and employment information maintained by ACF's Office of Child Support Enforcement (OCSE). These data include earnings from all jobs covered by unemployment insurance. OCSE identified the NDNH records for Empowering Families couples by using Social Security numbers (SSNs). However, about 40 percent of study participants in The Parenting Center site did not provide a valid SSN at the time of study enrollment and study participants who provided an SSN were not representative of study participants overall. For this reason, we only used the NDNH data as a robustness check of our main earnings results, which were based on survey data. These supplemental NDNH analyses are presented in the technical appendix.

Analysis

For the purpose of this report, we conducted both a confirmatory analysis and an exploratory analysis (Schochet 2009). We used the confirmatory analysis as the basis of our main test of whether Empowering Families achieved its intended effects on selected outcomes for couples who were randomly assigned to the program. For this analysis, we specified both the outcomes and methods before examining the data to prevent the perception that we decided which findings to report after seeing the results. We used the exploratory analysis to aid interpretation of the confirmatory impact findings and to inform future research.

Confirmatory analysis. For the confirmatory analysis, we selected outcomes across six domains: (1) relationship status, (2) relationship quality, (3) co-parenting, (4) connection to labor market, (5) labor market success, and (6) family economic well-being (Table 2). We chose these domains because they represent areas the program directly aimed to influence and areas where we could reasonably anticipate observing effects at the one-year follow-up. The *Family Wellness* content that formed the basis for the core Empowering Families workshop focused on improving relationship and economic stability. In addition to the increased employment or earnings, the Empowering Families program could help increase participants' connection to the labor market through teaching job-seeking behaviors that might eventually result in employment. Like HMRE programming more broadly, Empowering Families has the ultimate goal of improving child well-being. An important pathway by which the program may improve child well-being is the relationship skills that it teaches, which could improve participants' co-parenting relationships and help foster a loving and supportive home environment for their children. Another important pathway for the program to improve child well-being may be through improving the economic stability of and, ultimately, the economic well-being of the family.

Exploratory analysis. In the exploratory analysis, we examined the impacts of Empowering Families on three domains (Table 3):

1. **Money management.** Although financial literacy education and financial coaching were only part of the economic stability services offered, it is possible these distinct features of the program had an impact on participants' money management behaviors. We examined impacts on three measures of money management at the individual level: (1) whether sample members reported that they regularly kept track of money and spending, (2) whether sample members felt better off financially than a year ago, and (3) whether sample members reported that they had to pay a late fee on a bill or loan in the past three months. We examined these outcomes for men and women separately.
2. **Intimate partner violence.** Empowering Families screened out couples who reported that they were currently experiencing intimate partner violence. In addition, the program did not directly address intimate partner violence issues in its core workshops. Even so, the program's focus on improving relationship quality and managing conflict made examining impacts on intimate partner violence of interest. We examined impacts on four intimate partner violence measures: (1) respondent's level of disapproval of couple violence; (2) whether sample members reported psychological abuse from a romantic partner in the past year, (3) whether sample members reported physical abuse in the past year, and (4) whether sample members reported physical abuse from their romantic partner during this period. We examined these outcomes for men and women separately.
3. **Emotional well-being.** Empowering Families could improve participants' emotional well-being through its effects on their relationship quality and economic stability. In addition, attendance at group workshops could reduce participants' sense of social isolation, which could improve their

emotional well-being. We examined impacts on one measure of emotional well-being representing how often respondents experienced depressive symptoms in the past two weeks. We examined this outcome for men and women separately.

Table 2. Confirmatory outcomes

Outcome	Measure
Relationship status	
Couple married to each other	Whether both partners reported that they were married to each other at the time of the follow-up survey.
Couple married or romantically involved	Whether both partners reported that they were married to each other or in a romantic relationship with each other at the time of the follow-up survey.
Relationship quality[a]	
Support and affection	Continuous scale variable: Average of responses to 12 survey questions. Each question asked respondents about her or his relationship with the respondent's partner, such as, "[Partner] is honest and truthful with me" and "I can trust [Partner] completely." The scale was designed to measure positive relationship traits, such as support, intimacy, friendship, commitment, and trust. The source of these questions was the Building Strong Families (BSF) study (Moore et al. 2012). A similar measure was also used in the PACT HMRE study (Moore et al. 2018). Scale values ranged from 1 to 4, with higher values indicating greater support and affection.
Avoidance of destructive conflict behaviors	Continuous scale variable: Average of responses to eight survey questions. Each question asked about the frequency—from never to often—with which a respondent reported avoiding destructive conflict behaviors with his or her partner, such as, "When [Partner] and I argue, past hurts get brought up again." The statements were drawn or adapted from the Gottman Sound Relationship House Questionnaires (Gottman 1999). A similar measure was previously used in the PACT HMRE study (Moore et al. 2018). Scale values ranged from 1 to 4, with higher values indicating greater avoidance of destructive conflict behaviors.
Use of constructive conflict behaviors	Continuous scale variable: Average of responses to seven survey questions. Each question asked about the frequency—from never to often—with which a respondent reported using constructive conflict behaviors with his or her partner, such as, "When [Partner] and I have a serious disagreement, we work on it together to find a solution" and "We are pretty good listeners, even when we have different positions on things." The statements were drawn or adapted from the Gottman Sound Relationship House Questionnaires (Gottman 1999). A similar measure was previously used in the PACT HMRE study (Moore et al. 2018). Scale values ranged from 1 to 4, with higher values indicating greater use of constructive conflict behaviors.
Relationship commitment	Continuous scale variable ranged from 0 to 10, where 0 is not at all committed and 10 is completely committed to a romantic relationship, with higher values indicating that both partners were more committed to their romantic relationship. The measure was the average across the two partners' responses. A similar measure was previously used in the PACT HMRE study (Moore et al. 2018).
Relationship happiness	Continuous scale variable ranged from 0 to 10, with higher values indicating that both partners reported greater happiness with their romantic relationship. The measure was the average across the two partners' responses. The measure was adapted from one used in the BSF study (Moore et al. 2012). A similar measure was previously used in the PACT HMRE study (Moore et al. 2018).
Co-parenting[b]	
Quality of co-parenting relationship	Continuous scale variable: Average of responses to 10 survey questions. Scale values ranged from 1 to 4, with higher values indicating greater co-parenting quality. Each question asked respondents to report their level of agreement with positive statements about co-parenting with their partner such as, "I feel good about [Partner]'s judgment about what is right for our children/child" and "[Partner] is willing to make personal sacrifices to help take care

Outcome	Measure
	of our children/child." Questions were a subset of items from the Parenting Alliance Inventory (Abidin and Brunner 1995). A similar measure was previously used in the PACT HMRE study (Moore et al. 2018).
Connection to the labor market	
Employed or taking steps to find a job	Whether a respondent was ever employed at any time during the first year after study enrollment or indicated that in the past year he or she had done any of the following: (1) created or updated a resume, (2) looked for a job, (3) submitted a job application, and (4) gone on a job interview. We examined this measure separately for men and women.
Labor market success	
Monthly earnings, survey report	Continuous variable used survey data and was based on average monthly earnings from all jobs in the first year following study enrollment. We examined this measure separately for men and women.
Family economic well-being	
Family economic hardship scale	Continuous scale variable: Sum of responses to six survey questions. Each question asked a respondent to report whether the family experienced an economic hardship in the past year, such as, "Cut the size of their meals or skipped meals because they couldn't afford enough food" and "Went without a phone because they could not afford to pay the bill or buy extra cell phone minutes." This outcome measured economic hardship for families in which the youngest child was most likely to reside. These statements were adapted from the Improving Family Services Study (IFSS), the instrument for the National Evaluation of Partnerships to Demonstrate the Effectiveness of Supportive Housing for Families in the Child Welfare System. Scale values ranged from 0 to 6, with higher values indicating that families experienced more economic hardships.

Note: More details on construction of these outcomes is provided in the technical appendix.

[a] A couple-level measure refers to a measure that combines information across partners. Only couples who were married or in a romantic relationship at the time of the follow-up survey were included in analyses of outcomes in this domain.

[b] We restricted analysis of the measure in this domain to couples who were still co-parenting at the time of the follow-up survey.

Table 3. Exploratory outcomes

Outcome	Measure
Money management	
Kept track of money and spending	Whether respondents reported that they regularly kept track of money and how much they were spending. We examined this measure separately for men and women.
Felt better off financially	Whether respondents reported that they felt better off financially than a year ago. We examined this measure separately for men and women.
Had to pay a late fee on a bill or loan	Whether respondents reported that they had to pay a late fee on a bill or loan in the past three months. We examined this measure separately for men and women.
Intimate partner violence	
Disapproval of couple violence	Continuous scale variable: Average of responses to five survey questions. Each question asked respondents to report their level of disagreement with a statement such as, "Violence between dating partners can improve the relationship" and "There are times when violence between dating partners is okay." Questions were a subscale of the Acceptance of Couple Violence Scale (Dahlberg et al. 2005). Scale values ranged from 1 to 4, with higher values indicating greater disapproval of couple violence. We examined this measure separately for men and women.
Any psychological abuse	Whether respondents reported that in the past year a romantic partner tried to keep them from seeing or talking with friends, made them feel stupid, kept money from them or took their money without asking, or made them feel afraid that the partner might hurt them. This measure was adapted from similar measures used in the Supporting Healthy Marriage evaluation (Hsueh et al. 2012). We examined this measure separately for men and women.
Any physical abuse	Whether respondents reported that in the past year a romantic partner pushed, shoved, slapped, punched, kicked, or beat them. This measure was based on two items of the Physical Assault Scale of the Conflict Tactics Scale—Short Form (Straus and Douglas 2004). We examined this measure separately for men and women.
Any perpetration of physical abuse	Whether respondents reported that they pushed, shoved, slapped, punched, kicked, or beat a romantic partner in the past year. This measure was based on two items of the Physical Assault Scale of the Conflict Tactics Scale—Short Form (Straus and Douglas 2004). We examined this measure separately for men and women.
Emotional well-being	
Depressive symptoms	Continuous scale variable: Sum of responses to eight survey questions. Each question asked respondents to report how frequently they experienced a depressive symptom in the past two weeks. Questions were from the Patient Health Questionnaire eight-item (PHQ-8) depression scale (Kroenke et al. 2009). Scale values ranged from 1 to 24, with higher values reflecting more frequent depressive symptoms. We examined this measure separately for men and women.

Characteristics of couples in the study

Most couples who enrolled in the study were Hispanic, in their 30s, and had relatively low levels of education and earnings (Table 4). For just over half of the couples, both members were Hispanic. For about one in four couples, both members were Black and non-Hispanic.. For about four in 10 couples, both partners were born outside the United States; a similar proportion reported that they did not speak English at home. On average, women were 34 years old when they enrolled in the study; men were 36 years old, on average. For just over half of the couples in the study, both partners reported that they had at least a high school diploma or GED; 17 percent of couples reported that one or both partners were in

school at the time they enrolled in the study. Almost nine in 10 men were working when they enrolled in the study; about half of the women were working at this time. Sample members' earnings were generally low, with average earnings of $647 in the 30 days before study enrollment for women and $1,892 for men. These averages included those with no earnings during this period.

Most couples were in stable relationships when they enrolled in the study: 84 percent lived together all or most of the time; 55 percent reported being married; another 38 percent reported that they were in a steady romantic relationship. Only 7 percent reported an on-again, off-again relationship at enrollment. About eight in 10 couples had at least one child in common; just over half were raising a child from a previous relationship.

Table 4. Couples' characteristics at baseline (percentage unless otherwise specified)

Baseline characteristic	Mean or percentage
Demographics	
Average age (in years)	
Women	33.5
Men	35.6
Race and ethnicity	
Both partners Hispanic	55
Both partners Black, non-Hispanic	27
Both partners White, non-Hispanic	12
Other	6
Both partners were born outside the United States	39
Both partners speak a language other than English at home	42
Socioeconomic characteristics	
Both partners had at least a high school diploma or GED	52
Earnings in past 30 days ($)	
Women	647
Men	1,892
Worked for pay in past 30 days	
Women	51
Men	87
Relationship characteristics	
Couple lived together all or most of the time	84
Couple's relationship status	
Married	55
Romantically involved on a steady basis	38
Romantically involved on and off	7
Relationship quality	
Avoidance of destructive conflict behaviors (range = 1 to 4)	2.49
Use of constructive conflict behaviors (range = 1 to 4)	3.08
Relationship happiness (range = 0 to 10)	7.96
Support and affection (range = 1 to 4)	3.25
Parenting characteristics	

Baseline characteristic	Mean or percentage
Couple had at least one child together	82
Partner had a child with another partner	55
Quality of co-parenting relationship (range = 1 to 5)	4.21
Emotional well-being	
Depressive symptoms (range = 0 to 24)	
Women	6.0
Men	4.2
Sample size	879

Source: STREAMS baseline survey conducted by Mathematica.

Note: Percentages may not sum to 100 due to rounding.

Program implementation and costs

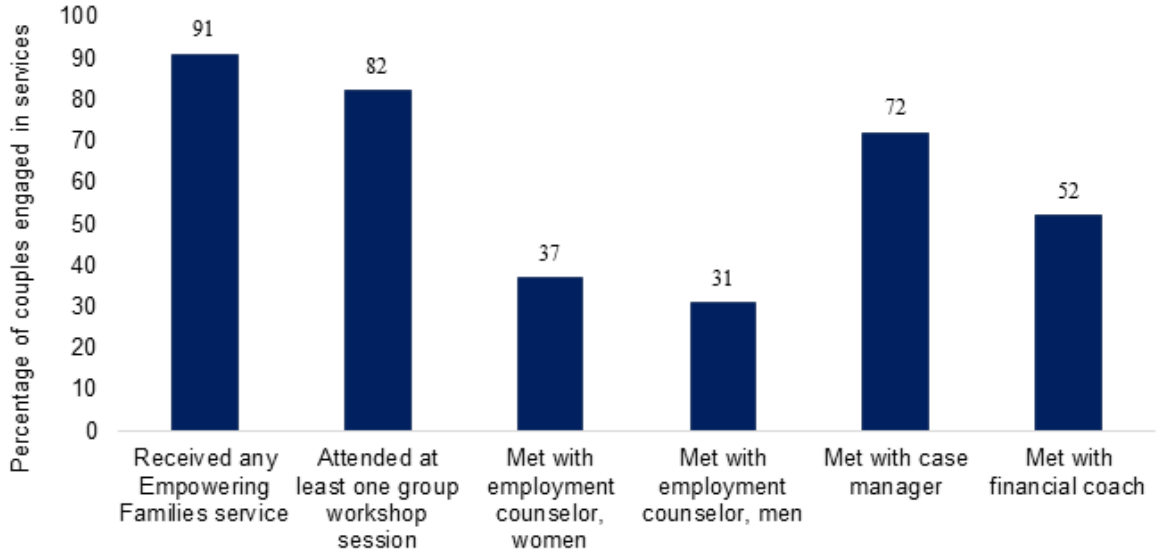
The Parenting Center intended to deliver HMRE services, financial literacy education, and job and career advancement services within a single integrated program (D'Angelo and Bodenlos 2020). The organization had a long history of delivering HMRE services; however, it did not have experience delivering financial literacy education or job and career advancement services, so it relied on partner organizations to provide them. To help strengthen implementation of this integrated approach, members of the study team worked closely with The Parenting Center to integrate employment and financial literacy content into its existing relationship skills education services. The study team, The Parenting Center staff, and the *Family Wellness* curriculum developers engaged in a thoughtful planning process to ensure that this integrated content delivered during workshop sessions would be interactive and interesting for couples. Throughout the implementation, members of the study team regularly supported and coached program staff and assisted recruiters to refine their strategy for describing program services and identifying couples who would benefit from both relationship education and economic stability services. Finally, members of the study team supported fidelity monitoring. Data entered by facilitators into the nFORM system suggested that the staff achieved high fidelity to the curriculum.

Levels of engagement with the program were high: 91 percent of couples participated in at least one program activity and 82 percent attended at least one *Family Wellness* workshop session (Figure 1). On average, couples received 14 hours out of 20 hours of content offered in the workshops, or 70 percent of the content offered (not shown). Participation was lower in one-on-one program services (Figure 1). Somewhat below the program's original goal of 40 percent participation in one-on-one employment services, 37 percent of women and 31 percent of men met with an employment counselor. The program had initially hoped that all couples would meet with a case manager and a financial coach. However, take-up was below this target: 72 percent of couples met with a case manager and 52 percent met one-on-one with a financial coach. Lower-than-expected participation in case management was due in part to scheduling constraints. The implementation report provides a more detailed discussion of program participation (D'Angelo and Bodenlos 2020).

The study team collected data on the resources required to deliver the Empowering Families program. We estimated the cost of Empowering Families as $10,844 per couple. This estimate represents the cost of operating the program at a steady state and excludes program start-up costs. Personnel costs for the *Family Wellness* educators and other program staff accounted for about one-third (32 percent) of the total annual program cost. Contracted services, including the partnerships with CLC and Pathfinders, as well as contracted financial and IT services, accounted for another 30 percent of the program cost. The remaining

38 percent of the total annual program cost included supplies, equipment, other direct costs, overhead costs, and facilities. The per participant cost of the Empowering Families program was similar to the estimated per participant costs of prior HMRE programs for couples. For example, adjusting for inflation, the estimated average costs of the Supporting Healthy Marriage and the Building Strong Families (BSF) programs were about $10,000 per couple and $12,000 per couple, respectively, in 2018 dollars (Gaubert et al. 2012; Wood et al. 2012).

Figure 1. Engagement in Empowering Families activities



Source: nFORM system.

Note: Values reflect couple participation unless otherwise indicated.

Program impacts

Empowering Families attempted to improve the relationships and economic stability of participating couples. In this section, we report our findings on the program's success in achieving its goals during the one-year follow-up period. We begin by presenting the estimated impacts of Empowering Families on the confirmatory outcomes: relationship quality, co-parenting quality, relationship status, connection to labor market, labor market success, and family economic well-being. We then present findings from our exploratory analysis of program impacts on money management, intimate partner violence, and emotional well-being.

Empowering Families improved relationship quality and co-parenting.

Impact findings indicated that Empowering Families was successful in its central goal of strengthening couples' relationships. The program improved multiple aspects of couples' relationship quality after one year, including all five dimensions of relationship quality we examined: (1) the level of support and affection partners felt toward each other, (2) their avoidance of destructive conflict behaviors, (3) their use of constructive conflict behaviors, (4) their level of commitment and, (5) the level of happiness they felt toward their relationship (Table 5).

Empowering Families improved couples' reported levels of supportiveness and affection in their relationships. This measure represented the respondent's level of agreement with statements such as,

"[Partner] supports me to do the things that are important to me." The maximum value for this four-point scale (4) indicated that both partners strongly agreed with the 12 positive statements about positive relationship traits such as support, intimacy, friendship, commitment, and trust used to create the scale. Among the 85 percent of couples who were married or romantically involved at follow-up, average support and affection scale values for the Empowering Families group were 3.41 compared to 3.32 for the control group, a difference that was statistically significant. The impact on this scale was equivalent to having about one in 12 couples move up one value—for example, from agree to strongly agree—for all items in the four-point scale.

Empowering Families also improved couples' ability to manage their conflicts by avoiding destructive conflict behaviors. This measure represented the frequency—from never to often—with which a respondent reported avoiding destructive conflict behaviors with his or her partner, such as, "[Partner] seems to view my words or actions more negatively than I mean them to be." The maximum value for this four-point scale (4) indicated that both partners never used the eight destructive conflict behaviors that comprised the scale. The average scores were 2.83 for the Empowering Families couples and 2.70 for control group couples. The impact of 0.13 on this scale was statistically significant and equivalent to having about one in eight couples move up one value on the four-point scale. Similarly, Empowering Families improved couples' use of constructive conflict behaviors. This four-point scale (4) measure represented the frequency—from never to often—with which a respondent reported using seven constructive conflict behaviors with his or her partner, such as, "[Partner] is good at calming me when I get upset." The impact on this scale was 0.10 and statistically significant.

Empowering Families increased couples' commitment to their relationships. The average value on the 0-to-10 relationship commitment scale was 9.61 for the Empowering Families group and 9.28 for the control group, a difference of 0.33 that was statistically significant. This impact was equivalent to having one-third of couples move their reported level of commitment up one value on the scale. The impact on relationship happiness was similar. The difference between the research groups on the 0-to-10 relationship happiness scale was 0.34, with an average 8.62 for Empowering Families couples and 8.29 for control group couples.

Empowering Families also improved couples' co-parenting relationships. The measure of the quality of the co-parenting relationship represented the respondent's level of agreement with statements such as, "I feel good about [Partner]'s judgment about what is right for our children/child." Among the 96 percent of couples still in a co-parenting relationship at the one-year follow-up, the average score on the 1-to-4 co-parenting scale at follow-up was 3.44 for Empowering Families couples and 3.33 for control group couples, a difference that was statistically significant.

Table 5. Impacts of Empowering Families on relationship quality, co-parenting, and relationship status (confirmatory)

Outcome	Empowering Families group	Control group	Impact	Effect size
Relationship quality[a]				
Support and affection (range = 1 to 4)	3.41	3.32	0.08**	0.20
Avoidance of destructive conflict behaviors (range = 1 to 4)	2.83	2.70	0.13**	0.21
Use of constructive conflict behaviors (range = 1 to 4)	3.23	3.13	0.10**	0.22
Relationship commitment (range = 0 to 10)	9.61	9.28	0.33**	0.30
Relationship happiness (range = 0 to 10)	8.63	8.29	0.34**	0.22
Co-parenting[b]				
Quality of co-parenting relationship (range = 1 to 4)	3.44	3.33	0.11**	0.23
Relationship status				
Couple married to each other (%)	58	56	2	0.04
Couple married or romantically involved (%)	86	85	0	0.03
Sample size[c]	436	352		

Source: Baseline and one-year follow-up surveys conducted by Mathematica.

Note: The numbers for the Empowering Families and control groups are regression-adjusted predicted values of outcomes. Impact analyses for relationship quality and co-parenting quality were weighted for nonresponse and multiple imputation was used. The multiple imputation method is described in the technical appendix.

[a] A couple-level measure refers to a measure that combines information across partners. Only couples who were married or in a romantic relationship at the time of the follow-up survey were included in analyses of outcomes in this domain.

[b] We restricted the analysis of measures in this domain to couples who were still co-parenting at the time of the follow-up survey.

[c] The sample size varied by outcome.

**/*/+ Impact estimates were statistically significant at the .01/.05/.10 levels, respectively, two-tailed test.

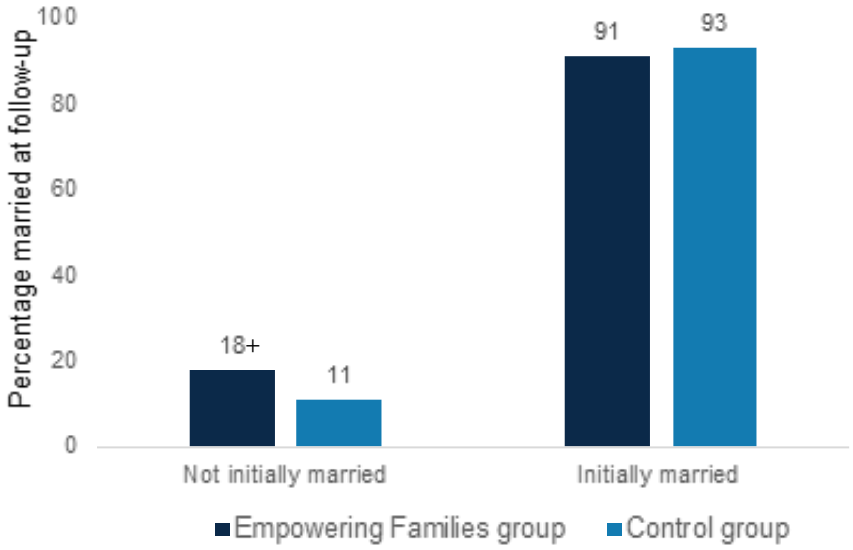
Couples in both research groups had similar rates of marriage and romantic involvement at the one-year follow-up. Exploratory subgroup analyses suggested that Empowering Families increased marriage among initially unmarried couples; among those initially married, both research groups were equally likely to remain together.

The Empowering Families and control group couples had similar rates of marriage and romantic involvement a year after study enrollment. At the one-year follow-up, 86 percent of Empowering Families couples and 85 percent of control group couples were still either married or romantically involved (Table 5). At this point, 58 percent of Empowering Families couples were married compared to 56 percent of control group couples, a difference that was not statistically significant.

Empowering Families served couples in a mix of relationship circumstances. As discussed earlier in the report, just over half of the couples were married when they enrolled in the program (Table 4). Prior research has found that HMRE programs serving couples with low incomes can have different impacts on marriage rates depending upon couples' initial marital status (Moore et al. 2018). To examine this

possibility, we estimated the impacts of Empowering Families on marriage rates separately for initially married and initially unmarried couples. We found substantial differences in the impacts on marriage for these two groups. Among the 45 percent of couples who were not married at the time of study enrollment, 18 percent of Empowering Families couples reported being married at follow-up, compared to 11 percent of control group couples, a difference that was statistically significant at the 0.10 level (Figure 2). Among the 55 percent of couples who were married at the time of study enrollment, there was no difference between the research groups in the likelihood that they remained married at follow-up. Thus, Empowering Families appears to have succeeded in increasing marriage rates among those who were not initially married during the one-year follow-up period; however, the program did not prevent married couples from breaking up during this period. These results differed from those found in the PACT evaluation. The HMRE programs included in the PACT study had no effect on marriage rates for initially unmarried couples but reduced the rate at which initially married couples broke up (Moore et al. 2018).

Figure 2. Impact of Empowering Families on marriage at one-year follow-up, by initial marital status (exploratory)



Source: Baseline and one-year follow-up surveys conducted by Mathematica.

Note: About 45 percent of couples were not married at the time of study enrollment and 55 percent were married at the time of study enrollment. The numbers for the Empowering Families and control groups are regression-adjusted predicted values of outcomes. See Appendix Table A.8 for details of the subgroup analysis. The difference in impacts between the initially married and initially unmarried groups was statistically significant at the 0.10 level.

**/*/+ Impact estimates were statistically significant at the .01/.05/.10 levels, respectively, two-tailed test.

Empowering Families did not affect participants' connection to the labor market or their overall labor market success.

Empowering Families and control group members reported equally high levels of connection to the labor market at the time of the one-year follow-up. For both groups, about seven in 10 women reported that they were employed or looking for work (Table 6). Among men, 95 percent reported that they were either employed or taking steps to find a job at this point.

Average earnings were similar for both research groups during the one-year follow-up period. Women in both groups reported average monthly earnings of somewhat less than $1,000 (Table 6). Men in both groups reported earning somewhat more than $2,300 per month, on average.

The Empowering Families program improved family economic well-being.

Empowering Families reduced the number of economic hardships experienced by families in the program (Table 6). This measure represented the number of six specific hardships the family may have experienced in the past year, such as having to eat less or borrow money from friends or family to make ends meet. The average scale scores were 1.53 for the Empowering Families group and 1.73 for the control group, a difference that was statistically significant at the 0.10 level. The impact of -0.20 on this scale suggested that Empowering Families led to a 12 percent reduction in the number of economic hardships these families faced. To aid interpretation of this finding, we examined the impact of Empowering Families separately for each of the six hardships included in the scale (Appendix Table A.6). We found favorable impacts on the two most common hardships: (1) having to borrow money from friends and family and (2) having to forgo medical care because of a lack of money. The other four hardships (reducing or skipping meals, moving in with others, going without a phone, and selling or pawning belongings) were unaffected.

Table 6. Impacts of Empowering Families on connection to labor market, labor market success, and family economic well-being (confirmatory)

Outcome	Empowering Families group	Control group	Impact	Effect size
Connection to the labor market				
Employed or taking steps to find a job (%)				
Women	73	71	1	0.03
Men	95	95	0	0.02
Labor market success				
Monthly earnings, survey report ($)				
Women	896	990	-94	-0.07
Men	2,359	2,353	5	0.00
Family economic well-being				
Family economic hardship scale (range = 0 to 6)	1.53	1.73	-0.20+	-0.13
Sample size[a]				
Couples	427	347		
Women[b]	421	340		
Men[c]	379	291		

Source: Baseline and one-year follow-up surveys conducted by Mathematica.

Note: The numbers for the Empowering Families and control groups are regression-adjusted predicted values of outcomes.

[a] The sample size varied by outcome.

[b] The risk of attrition bias was low for the female sample for the connection to the labor market and labor market success outcomes (Appendix Table A.3). Impact analyses on these outcomes used hot deck imputation.

[c] The risk of attrition bias was high for the male samples for the connection to the labor market and labor market success outcomes but the baseline equivalence on this sample was established (Appendix Table A.3). Impact analyses on these outcomes used hot deck imputation.

**/*/+ Impact estimates were statistically significant at the .01/.05/.10 levels, respectively, two-tailed test.

Exploratory analyses suggested that Empowering Families improved participants' ability to manage their money, particularly for women.

As part of our exploratory analysis, we examined the impact that Empowering Families had in the area of money management. We found that Empowering Families had positive impacts for both women and men on their reports of whether they regularly kept track of their money and spending. Among those in the Empowering Families group, 82 percent of both men and women reported regularly tracking their spending, compared to 73 percent of women and 76 percent of men in the control group (Table 7). Empowering Families also increased the proportion of women who reported being better off financially than they were a year ago and reduced the proportion of women who reported paying late fees on bills or loans in the past three months (Table 7). The program did not have a statistically significant impact on these measures for men.

Exploratory analyses suggested that Empowering Families increased disapproval of couple violence for both women and men; rates of intimate partner violence were unaffected. The program reduced depressive symptoms for men but not for women.

As part of our exploratory analysis, we examined the impacts of Empowering Families on intimate partner violence, including attitudes toward couple violence and reports of psychological and physical abuse. We measured the level of respondents' disapproval of couple violence on follow-up survey using the five-item subscale of the Acceptance of Couple Violence Scale (Dahlberg et al. 2005). Values of the summary scale range from 1 to 4, with higher values indicating greater disapproval of couple violence. Empowering Families increased the level of disapproval of couple violence for both men and women (Table 7). Average disapproval of couple violence scale values for women in the Empowering Families group were 3.65 compared to 3.54 for women in the control group, a difference that was statistically significant. For men, the difference between the research groups was even bigger (3.54 compared to 3.38, respectively) and statistically significant.

Empowering Families did not affect the frequency with which participants reported psychological or physical abuse during the one-year follow-up period (Table 7). In both research groups, just over one in five women and just under one in five men reported having experienced psychological abuse by a romantic partner in the previous year. In both research groups, fewer than one in 10 reported having been physically abused by a romantic partner in the previous year. Similar proportions in both research groups reported that they had physically abused a romantic partner during this period.

As part of our exploratory analysis, we also examined Empowering Families impacts on the frequency of depressive symptoms. We measured depressive symptoms on the follow-up survey using the eight-item Patient Health Questionnaire (PHQ-8). Values of the summary scale ranged from 0, indicating that the respondent did not experience the symptoms at all, to 24, indicating that the respondent experienced all eight symptoms nearly every day. Empowering Families reduced depressive symptoms for men (Table 7). Average PHQ-8 depression scale values for the Empowering Families group were 2.7 compared to 3.4 for the control group, a difference that was statistically significant. For women, the difference between the research groups was smaller and not statistically significant.

Table 7. Impacts of Empowering Families on money management, relationship attitudes, intimate partner violence, and emotional well-being (exploratory)

Outcome	Empowering Families group	Control group	Impact	Effect size
Money management				
Kept track of money and spending (%)				
Women	82	73	9**	0.30
Men	82	76	6+	0.21
Paid a late fee on a bill or loan in the past three months (%)				
Women	31	40	-9*	-0.23
Men	27	31	-3	-0.10
Better off financially now (%)				
Women	74	62	11**	0.32
Men	75	70	6	0.17
Intimate partner violence				
Disapproval of couple violence (range = 1 to 4)				
Women	3.65	3.54	0.11**	0.24
Men	3.54	3.38	0.16**	0.32
Any psychological abuse (%)				
Women	22	24	-1	-0.04
Men	17	19	-2	-0.08
Any physical abuse (%)				
Women	7	8	0	-0.03
Men	8	9	0	-0.03
Any perpetration of physical abuse (%)				
Women	8	10	-2	-0.13
Men	4	6	-2	-0.21
Emotional well-being				
Depressive symptoms (range = 0 to 24)				
Women	4.12	4.69	-0.56	-0.11
Men	2.70	3.40	-0.69*	-0.15
Sample size[a]				
Women	424	341		
Men	379	294		

Source: Baseline and one-year follow-up surveys conducted by Mathematica.

Note: The numbers for the Empowering Families and control groups are regression-adjusted predicted values of outcomes.

[a] The sample size varied by outcome.

**/*/+ Impact estimates were statistically significant at the .01/.05/.10 levels, respectively, two-tailed test.

Discussion and lessons learned

This study examined the impacts of Empowering Families, an HMRE program for couples with low incomes who are raising children together. The program provided these couples with an integrated package of relationship education and economic stability services. The core service was an eight-session workshop that integrated HMRE content with information on financial literacy and job and career advancement. The HMRE content came from *Family Wellness*, a relationship skills and parenting curriculum designed to promote healthy family interactions. The workshops were supplemented with one-on-one services, including case management, financial coaching, and employment counseling.

Previous studies have shown that HMRE programs that offer job and career advancement services can meaningfully improve the relationships of couples with low incomes; however, these programs have been less successful at improving labor market outcomes (Moore et al. 2018). This study built on this research by assessing the effectiveness of an HMRE program that aimed to offer more intensive economic stability services than previously studied HMRE programs and that integrated those services more fully with HMRE content.

To conduct this study, Mathematica and its partner Public Strategies collaborated with The Parenting Center, a community-based social service provider in Fort Worth, Texas. This organization had a track record of providing HMRE services, but had not previously offered financial literacy or job and career advancement services. For this reason, The Parenting Center engaged partner organizations with expertise in those fields to co-facilitate the group workshop sessions on employment and financial literacy and provide the one-on-one employment counseling and financial coaching. An earlier report from the study documented that Empowering Families was implemented as intended (D'Angelo and Bodenlos 2020).

This report summarizes the program's impacts on key outcomes one year after study enrollment. To measure program impacts, the study team randomly assigned 879 couples to one of two research groups: (1) a group that was offered Empowering Families services or (2) a control group that was not offered the services. Our analysis is based on one-year follow-up surveys conducted with both members of the couple in each research group.

Empowering Families had effects on couples' relationship quality that were larger than those found in earlier studies; the program did not affect their relationship status during the one-year follow-up period.

At the one-year follow-up, we found that Empowering Families improved all aspects of couples' relationship quality that we examined. The program increased the level of support and affection partners felt toward each other, their use of constructive conflict behaviors, their avoidance of destructive conflict behaviors, and the level of commitment and happiness they felt toward their relationship. It also improved the quality of their co-parenting relationship. These effects were larger than those found in earlier studies of HMRE programs for couples with low incomes. The average effect size across the five relationship quality measures we examined was almost three times the magnitude of the average effect size on relationship quality measures used in the PACT study (Moore et al. 2018). Similarly, these effect sizes were more than three times the magnitude of the average effect size on relationship quality found across a set of studies included in a recent summary of impact studies of HMRE programs for couples with low incomes (Hawkins and Erickson 2015).

Why did Empowering Families have larger effects on relationship quality than those found in earlier studies? One possibility is that the *Family Wellness* curriculum might be particularly effective at

improving relationship quality for couples with low incomes. This study provides the first rigorous evidence of the curriculum's effects. Additional research is needed to confirm whether other programs using *Family Wellness* find larger effects on relationship quality and co-parenting than those found in studies of programs using other curricula. Another possibility is that Empowering Families' more intensive focus on economic stability services—including, job and career advancement and financial literacy services—amplified the program's relationship quality effects. This could happen, for example, if the program's focus on multiple topics made some participants who were initially skeptical of relationship education more comfortable with the program and thus more likely to engage in its relationship content. Another possibility is that the program's success in reducing economic stresses for the couples may have in turn improved their relationship quality. Lower stress may have also made it easier for them to absorb and apply the relationship education they received.

Despite Empowering Families' effects on relationship quality, the program had no overall impact on couples' relationship status at the one-year follow-up period. At this point, about 85 percent of both study groups were either married or romantically involved. Rates of marriage were also similar for the two groups. Some recent studies of HMRE programs have found effects on reducing marital breakups among initially married couples a year after program entry (Moore et al. 2018; Allen et al. 2015). Empowering Families did not have this effect after one year. However, our exploratory subgroup analysis suggests that Empowering Families did increase the likelihood of initially unmarried couples getting married during the one-year follow-up period. This exploratory finding is notable because earlier research on HMRE programs for couples with low incomes has not found impacts on marriage rates among those who were initially unmarried (Wood et al. 2014; Moore et al. 2018). Why might Empowering Families have been more successful with unmarried couples than earlier programs were? One possibility is that the *Family Wellness* curriculum was particularly effective for unmarried couples. Another potential factor could be that unmarried couples served by federally-funded HMRE programs are more economically disadvantaged than married couples served by these programs (Alamillo et al. 2020), a pattern that held for couples served by Empowering Families. Empowering Families' more intensive approach to providing economic stability services may have improved the program's success with the unmarried couples they served.

Empowering Families did not improve labor market outcomes during the one-year follow-up period; even so, it reduced families' exposure to economic hardships.

At the one-year follow-up, we found that Empowering Families did not improve labor market outcomes. Similar proportions of Empowering Families and control group members were employed or taking steps to find a job a year after entering the study. In addition, both research groups reported similar earnings over the one-year follow-up period. These findings are similar to earlier research on HMRE programs that offered job and career advancement services, which also found limited labor market effects (Moore et al. 2018). Moreover, challenges in improving labor market outcomes through job and career advancement services are not unique to HMRE programs. Relatively few programs have been shown to increase the earnings of adults with low incomes, even among programs that focus primarily on employment (Mastri and Hartog 2016; Sama-Miller et al. 2017).

Despite the lack of impacts on labor market outcomes, we found that Empowering Families reduced economic hardship among participating families, an effect that is statistically significant at the 0.10 level. Those in the Empowering Families group reported 12 percent fewer material hardships during the one-year follow-up period than control group families reported. These hardships included outcomes such as

forgoing medical care because of a lack of money or having to borrow money from friends or relatives to make ends meet. One of the central goals of federal HMRE funding is to improve the material well-being of families with low incomes and their children. Empowering Families was successful in achieving that goal.

How did Empowering Families reduce economic hardship without increasing participants' earnings? One possibility is that the program's financial literacy services helped participating couples avoid certain economic hardships by managing their limited resources more effectively. About two-thirds of Empowering Families couples participated in the group workshop session on financial literacy and about half participated in the individual financial coaching offered by the program. Our exploratory analyses suggested that these services had their intended effect, particularly for women. Empowering Families increased the proportion of women who said they kept track of their money and spending, avoided paying late fees, and felt better off financially than they did a year ago. The program also increased the proportion of men who reported keeping track of their money and spending. The program's strong effects on relationship quality may also have played a role. If couples were able to manage conflict and communicate more effectively, then they might be able to manage their joint finances better and thus reduce their family's exposure to economic hardship. In addition, the integrated approach to relationship education and financial literacy offered by Empowering Families may have helped couples apply these newly learned relationship skills to the financial aspects of their lives, such as joint budgeting and money management.

These findings build on previous research that showed that HMRE programs for couples with low incomes that supplement relationship education with economic stability services can improve the relationships of these couples in important ways. Similar to HMRE programs included in earlier research, Empowering Families did not increase earnings. However, the program did succeed in reducing economic hardship. This pattern of results points to the potential importance of the program's financial literacy services in improving participants' economic outcomes. The success of this approach suggests that future HMRE programs should consider integrating financial literacy services with relationship education and partnering with organizations experienced in providing such services. These results also suggest that HMRE programs for couples that supplement their services with economic stability content might want to focus more on financial literacy services than employment services. Future research should examine whether other HMRE programs with strong financial literacy components have similar success in improving the economic well-being of their participants.

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Technical Appendix

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This technical appendix supplements the report on the one-year impacts of the Empowering Families program. The first section details the study's sample intake and random assignment procedures. The second section describes the study's survey administration procedures and response rates. The third section explains the study team's methods for estimating program costs. The fourth section discusses the confirmatory impact analyses and robustness checks.

Sample intake and random assignment

The Parenting Center enrolled 879 couples in the study over the 27-month recruitment period. The study team randomly assigned 482 couples to the Empowering Families group and 397 couples to the control group. Below, we describe the processes that The Parenting Center's staff and the study team followed to recruit participants and to conduct sample intake and random assignment.

The Parenting Center designed Empowering Families for couples who were economically disadvantaged and raising children together. It was offered as a voluntary program to couples living in and around Fort Worth, Texas, an urban area with residents from diverse racial and ethnic backgrounds. Recruiters worked to reach eligible couples in various locations in the community—including, family health clinics, local elementary schools, Head Start programs, malls, health or job fairs, churches, food banks, workforce centers, and community centers. Recruiters identified these places as locations where they were likely to find eligible couples who would benefit from both HMRE and economic stability services.

To be eligible for the study, both partners in a couple had to be older than age 18, romantically involved with each other, and not currently experiencing domestic violence. In addition, at least one member of the couple had to have a biological or adopted child younger than age 18 who lived with the partner at least half-time. Interested couples were instructed to call The Parenting Center for an intake appointment. The program adjusted its recruitment strategy with input from the STREAMS evaluation team to meet the study's recruitment goals. These adjustments included hiring a new recruiting team, finding more productive places to recruit couples, and improving the recruitment pitch.

When they identified an interested couple, recruiters scheduled the couple for an intake appointment at The Parenting Center to complete the study enrollment process. At this appointment, an intake specialist confirmed the couple's study eligibility. The intake worker then called Mathematica's Survey Operations Center and connected each member of the couple to a trained interviewer who worked with them to complete the study consent process and the STREAMS baseline survey. After both members of the couple completed the interview, the intake worker used a special module in ACF's nFORM computer system to randomly assign the couple to either the Empowering Families group or the control group. After completing this process, the intake worker informed both members of the couple of their research status.

The proportion of study participants randomly assigned to the Empowering Families group varied during the study enrollment period. During the first four months of sample intake, the study team assigned 90 percent of applicants to the Empowering Families group and 10 percent to the control group (Table A.1). Assigning a large proportion of study participants to the Empowering Families group during these early months allowed the program to create cohorts of participants large enough to run workshops on a regular basis. The pace of enrollment increased during the early months of the study, which enabled the study team to assign a greater proportion of study participants to the control group while still having enough participants in the Empowering Families group. The study team adjusted the random assignment ratio in two stages. The first adjustment occurred four months after study enrollment began and the second

occurred nine months after enrollment began. From January 2017 through early June 2017, the study team assigned 67 percent of applicants to the Empowering Families group and 33 percent to the control group. From early June 2017 through the end of the enrollment period in December 2018, the study team assigned half of the applicants to the Empowering Families group and half to the control group. Through most of the study period, the study team also conducted random assignment separately for English-speaking and Spanish-speaking couples. This stratification began in February 2017 and continued through the rest of the sample enrollment period.

We adjusted for these features of the random assignment design in our impact analysis by using weights that accounted for the varying probabilities of assignment to either the Empowering Families group or the control group. We calculated the base weight of a sample as the inverse of the probability with which couples were randomly assigned to the Empowering Families and control groups. Because randomization was conducted independently for each of the four enrollment periods and based on language, we also calculated base weights within each enrollment period and language. We classified sample members into one of the 12 cells presented in Table A.1 and calculated the base weight for sample members in each of those 12 cells to be the inverse of the probability of random assignment to that cell.

Table A.1. Random assignment probabilities, by language

Date	No stratification by language	
09/01/2016–01/02/2017	• Intervention group: 0.90 • Control group: 0.10	
01/03/2016–01/31/2017	• Intervention group: 0.67 • Control group: 0.33	
	Stratification by language	
	English speakers	**Spanish speakers**
02/01/2017–06/04/2017	• Intervention group: 0.67 • Control group: 0.33	• Intervention group: 0.67 • Control group: 0.33
06/05/2017–12/19/2018	• Intervention group: 0.50 • Control group: 0.50	• Intervention group: 0.50 • Control group: 0.50

In Table A.2, the full sample represents the 879 couples who enrolled in the study and underwent random assignment while the analytic sample represents the subset that responded to the one-year follow-up survey. As expected, the couples in both study groups were generally similar at baseline on demographics, socioeconomic characteristics, relationship characteristics, relationship qualities, parenting characteristics, and well-being. Across the more than 30 measures we examined, two statistically significant differences emerged across the two research groups: women's age and employment in the past 30 days. Both differences were statistically significant at 10 percent level.

Table A.2. Baseline characteristics for couples in the full and analytic samples, by study group (percentage, unless otherwise specified)

Baseline characteristic	Full sample			Analytic sample		
	Empowering Families group	Control group	Difference	Empowering Families group	Control group	Difference
Demographics						
Average age (years)						
Women	33.1	34.2	-1.1+	33.4	34.3	-1.0
Men	35.2	36.3	-1.0	35.5	36.3	-0.8
Race and ethnicity						
Both partners Hispanic	55	56	-1	55	55	0
Both partners Black, non-Hispanic	27	27	0	28	28	-1
Other	18	17	1	17	17	0
Both partners same sex	1	1	0	1	1	0
Both partners foreign-born	38	39	-2	38	38	0
Both partners speak a language other than English at home	42	41	1	43	39	4
Socioeconomic characteristics						
Both partners had at least a high school diploma or GED	52	53	-1	52	53	-1
Either partner was in school at baseline	15	19	-4	16	18	-3
Earnings in past 30 days ($)						
Women	597	708	-112	554	708	-154*
Men	1,832	1,974	-142	1,850	2,010	-160
Worked for pay in past 30 days						
Women	48	55	-6+	48	56	-8*
Men	87	88	-1	86	89	-3
Employed or looking for a job						
Women	67	68	-1	66	69	-2
Men	96	96	-1	95	96	-1
Any reliance on public assistance						
Women	65	66	-1	64	65	0
Men	54	55	-1	54	57	-3
Relationship characteristics						
Couple lives together all or most of the time	83	85	-1	83	86	-2
Couple's relationship status						
Married	54	57	-3	55	58	-3
Romantically involved on a steady basis	39	37	2	39	36	3
Romantically involved on and off	7	6	1	6	6	1

Baseline characteristic	Full sample			Analytic sample		
	Empowering Families group	Control group	Difference	Empowering Families group	Control group	Difference
Couple's relationship qualities						
Avoidance of destructive conflict behaviors (range = 1 to 4)	2.49	2.51	0.00	2.49	2.51	0.00
Constructive conflict behaviors (range = 1 to 4)	3.07	3.11	0.00	3.07	3.12	0.00
Relationship happiness (range = 0 to 10)	7.92	8.05	-0.13	7.89	8.08	-0.19+
Support and affection (range = 1 to 4)	3.25	3.26	0.00	3.25	3.26	0.00
Parenting characteristics						
Couple had at least one child together (%)	83	82	1	83	82	1
Partner had a child with another partner (%)	57	54	3	56	53	3
Couple was expecting a child (%)	5	4	1	5	5	0
Quality of co-parenting relationship (range = 1 to 5)	4.21	4.25	0.00	4.21	4.25	0.00
Well-being						
Depressive symptoms (range = 0 to 24)						
Women	6.1	5.5	0.6	6.3	5.6	0.7
Men	4.3	4.0	0.3	4.5	4.0	0.5
Sample size						
Couples	482	397		436	352	
Women	482	398		423	340	
Men	477	392		379	294	

Source: Baseline and one-year follow-up surveys conducted by Mathematica.

Note: The full sample refers to all couples who were randomly assigned. The data were weighted to account for differences in random assignment probabilities. The analytic sample refers to all couples who responded to the one-year follow-up survey. These data were weighted to account for differences in random assignment probabilities and the probability of survey response. Percentages may not sum to 100 due to rounding.

**/*/+ Differences were statistically significant at the .01/.05/.10 levels, respectively, two-tailed test.

◊◊◊/◊◊/◊ Difference was significantly different from zero at the .01/.05/.10 level using a chi-square test.

Survey administration and nonresponse

The study team administered two rounds of surveys: (1) a baseline survey at study enrollment and (2) a one-year follow-up survey about 12 months after enrollment. The analysis in this report used data from both surveys.

The study team administered the baseline survey during the program intake appointment. For the one-year follow-up survey, respondents could either complete a self-administered web survey on a smartphone or tablet or complete a computer-assisted telephone survey with a trained Mathematica interviewer. Of the 765 women and 673 men who responded to the one-year follow-up survey, 21 percent of women and 18

percent of men completed the self-administered web version. All surveys were available in English and Spanish.

The survey administration procedures yielded a high response rate for the one-year follow-up survey, with small differences in response rates between research groups. In 90 percent of Empowering Families couples, at least one partner responded to the follow-up survey; the corresponding number for the control group was 89 percent. Among women in the study, 86 percent responded. For men, the response rate was 77 percent. These response rates were similar for the two research groups.

To account for couples who did not respond to the one-year follow-up survey, we constructed a survey nonresponse weight to use for the impact analysis. Specifically, we estimated a logistic regression model that predicted survey response—that is, whether a couple was located for, agreed to, and responded to the follow-up survey. Accordingly, each responding couple was assigned an adjustment factor related to the probability that the follow-up couple was located, agreed to take the survey, and responded to the survey. Couples that did not respond were assigned an adjustment factor equal to zero. The final weight for our main analysis model was the product of the base weight and the survey response adjustment factor. Because some analyses were conducted separately for women and men in the sample, we also constructed nonresponse weights for women and men separately, using the same method.

We found that accounting for survey nonresponse and applying the nonresponse weights had little material effect on the similarity of couples in the Empowering Families and control groups (Table A.2). Among couples who completed a one-year follow-up survey, the two research groups were very similar on most of the more than 30 baseline characteristics we examined, with three exceptions: (1) women's earnings, (2) women's employment, and (3) couple's relationship happiness.[1] As discussed in greater detail later in the appendix, we accounted for these differences by controlling for employment status, earnings, and initial relationship quality in the regression models that were used to estimate the program impacts.

Program cost estimates

We calculated the program cost estimates using the "ingredients" or resource cost method (Levin and McEwan 2001), a common standard in the field. The first step of this method requires identifying all the resources that grantees need to deliver their HMRE programs—including, program staff, workshop facilitators, administrative staff, curriculum materials, office supplies and equipment, program incentives, and other shared administrative and indirect resources. The second step involves assigning a dollar value to each resource identified, either by taking the amounts directly from accounting records or by estimating the value using market prices or publicly available sources. These dollar values form the basis for the summary estimates of a program's cost.

We collected data on the resources required to implement the Empowering Families programming over a one-year period of typical operations. Thus, our program cost estimates reflect the resources required to deliver programming during a steady state of operations, rather than the start-up resources required to develop or launch a new program. In addition, our program cost estimates reflect the perspective of the organization responsible for implementing the program—rather than the perspectives of program

[1] We also looked at baseline differences without accounting for nonresponse weights. The results were largely similar.

participants, taxpayers, or the federal government. Therefore, the estimates reflect the resources that similar organizations would likely need to maintain the program in other locations.

To estimate the program cost, we relied primarily on information on resource use and costs as reported by the Empowering Families staff. We then made the following three adjustments to those data: (1) We estimated the cost of rent-free office space using the market value of rental rates for commercial office space in the local area; (2) We calculated the annual value of equipment- and facilities-related expenses by dividing the value of the original purchase price of the equipment (as estimated by Empowering Families program staff) by the useful life, based on depreciation guidelines from the Internal Revenue Service; and (3) We standardized local costs to national levels by adjusting the total value of resources for personnel (staff salaries, payroll taxes, and benefits) and non-personnel (after all other adjustments) using an index created from average metropolitan area–level and national wages, as reported in May 2018 by the Bureau of Labor Statistics.

We estimated the cost of providing services and examined the resources required to provide them. We calculated (1) the total annual program cost and (2) the per participant cost, which was defined as the average cost to serve one participant. We first calculated the resources The Parenting Center and its local partners required to deliver Empowering Families for a one-year period from October 2017 to September 2018. The center's staff reported that this period reflected a normal operating cycle, with a typical amount of staff turnover and training. Next, we calculated the cost of serving one couple for one month by dividing the total annual program cost by the total number of months each couple participated in services during the one-year cost period. Finally, we calculated the average length of program participation (in months) for all couples offered services throughout the entire study period and multiplied this average length of program participation by the estimated cost of serving one couple for one month. In addition to calculating per participant costs, we broke down the estimates of the total annual program cost to show the percentage of the total cost apportioned to each of five resource categories: (1) personnel; (2) contracted services; (3) supplies, equipment, and other direct costs; (4) facilities costs; and (5) overhead.

Details of the confirmatory analysis

Before conducting the impact analysis, we specified the outcomes and analytic methods we planned to use for answering the study's main research questions. Specifying this confirmatory analysis in advance prevents focusing the assessment of program impacts on outcomes that happen to emerge as statistically significant or the perception that this might have been the case (Schochet 2009). We publicly documented the outcomes selected for the confirmatory analysis as part of the study's registry on the ClinicalTrials.gov website (identifier: NCT02902003).

Confirmatory outcomes

We focused the confirmatory analysis on a targeted set of 13 outcomes across six domains that were central to the program's goals and feasible to assess given the study's sample size and length of follow-up period. Of these 13 outcomes, six were scales constructed by combining the participants' responses to multiple survey questions. To maximize the sample size available for the analysis, we calculated a scale score for any respondent who answered at least two-thirds of the questions that made up the scale. For example, for a scale with six questions, we calculated a scale score for any respondent who responded to at least four of the six questions. We coded couples as missing on the scale if they responded to fewer than two-thirds of the questions, because we did not have enough information to calculate a score. For

each scale, we checked the reliability of the scale for our study sample by calculating Cronbach's alpha (α) with data from the follow-up sample with the control group only.

Relationship status: Whether couple is married

We measured a couple's marital status by using a binary indicator for whether both partners reported that they were married to each other at the time of the follow-up survey. When partners gave discrepant responses on marital status, we categorized a couple as married only if both members of the couple reported this status. This practice was consistent with one used in the BSF and PACT HMRE studies (Wood et al. 2012; Moore et al. 2018).

Relationship status: Whether couple is married or romantically involved

We measured whether couples were married or romantically involved at follow-up using a binary indicator for whether both partners reported that they were married to each other or in a romantic relationship with each other at the time of the follow-up survey. We handled discrepant responses between partners similarly to our approach for marital status.

Relationship quality: Support and affection

We measured support and affection in a couple's relationship by using a single summary scale of 12 items. The follow-up survey asked respondents the degree to which they agreed with 12 statements regarding their relationship with their romantic partner. The statements reflected positive relationship traits such as support, intimacy, friendship, commitment, and trust. The scale used the following 12 items:

1. [Partner] is honest and truthful with me.
2. I can trust [Partner] completely.
3. [Partner] can be counted on to help me.
4. [Partner] knows and understands me.
5. [Partner] listens to me when I need someone to talk to.
6. [Partner] respects me.
7. [Partner] shows love and affection.
8. I feel appreciated by [Partner].
9. I want my relationship with [Partner] to stay strong no matter what rough times we may have.
10. [Partner] supports me to do the things that are important to me.
11. [Partner] and I often talk about things that happen to each of us during the day.
12. [Partner] and I enjoy doing even ordinary, day-to-day things together.

The source of these questions was the BSF study (Wood et al. 2012). A similar measure was also used in the PACT HMRE study (Moore et al. 2018). For each statement, the survey asked respondents to report their level of agreement on a four-point scale that ranged from strongly agree to strongly disagree. We assigned each response category a number ranging from 1 to 4, with higher values indicating stronger agreement. For respondents who answered at least eight of the 12 questions, we calculated a scale score by taking the average value of our assigned number across the different questions. The resulting scale ranged from 1 to 4, with higher values indicating more support and affection ($\alpha = 0.94$ based on data from the follow-up sample with the control group only). We then combined information across partners by

averaging the values of the scale for the two partners. This measure was only defined for couples who were married or in a romantic relationship at the time of the follow-up survey.

Relationship quality: Avoidance of destructive conflict behaviors

We measured avoidance of destructive conflict behaviors in a couple's relationship by using a single summary scale of eight items. The follow-up survey asked respondents about the frequency with which they and their partners engaged in eight negative conflict behaviors. The statement reflected criticism or contempt that the partners demonstrated toward each other, their tendency to escalate or withdraw from arguments or engage in personal attacks, and other harmful behaviors associated with conflict. The scale used the following eight items:

1. [Partner] is rude or mean to me when we disagree.
2. [Partner] seems to view my words or actions more negatively than I mean them to be.
3. When [Partner] and I argue, past hurts get brought up again.
4. Our arguments become very heated.
5. Small issues suddenly become big arguments.
6. [Partner] or I stay mad at one another after an argument.
7. When we argue, one of us withdraws and refuses to talk about it anymore.
8. When we argue, I feel personally attacked.

The statements were drawn from the Gottman Sound Relationship House Questionnaires (Gottman 1999). A similar measure was previously used in the PACT HMRE study (Moore et al. 2018). For each statement, the respondent was provided with four response options: (1) never, (2) hardly ever, (3) sometimes, or (4) often. We reverse coded these items so that the measure represented the avoidance of conflict behaviors and then assigned each response category a number ranging from 1 to 4, with higher values indicating lower frequency. For couples who responded to at least six of the eight questions, we calculated a scale score by taking the average value of our assigned numbers across the different questions. The resulting scale ranged from 1 to 4, with higher values indicating greater avoidance of destructive conflict behaviors ($\alpha = 0.89$ based on data from the follow-up sample with the control group only). We then combined information across partners by averaging the values of the scale for the two partners. This measure was only defined for couples who were married or in a romantic relationship at the time of the follow-up survey.

Relationship quality: Use of constructive conflict behaviors

We measured the use of constructive conflict behaviors in a couple's relationship by using a single summary scale of seven items. The follow-up survey asked respondents seven questions about the frequency with which they used constructive conflict behaviors with their partner:

1. [Partner] and I are good at working out our differences.
2. I feel respected even when [Partner] and I disagree.
3. When [Partner] and I have a serious disagreement, we work on it together to find a solution.
4. During arguments, [Partner] and I are good at taking breaks when we need them.
5. [Partner] is good at calming me when I get upset.

6. We are pretty good listeners, even when we have different positions on things.
7. Even when arguing, we can keep a sense of humor.

These statements were also drawn from the Gottman Sound Relationship House Questionnaires (Gottman 1999). A similar measure was previously used in the PACT HMRE study (Moore et al. 2018). For each statement, the survey asked respondents to report whether this never happens, hardly ever happens, sometimes happens, or often happens. We assigned each response category a number ranging from 1 to 4, with higher values indicating higher frequency. For respondents who answered at least five of the seven questions, we calculated a scale score by taking the average value of our assigned number across the different questions. The resulting scale ranged from 1 to 4, with higher values indicating more frequent use of constructive conflict behaviors ($\alpha = 0.81$ based on data from the follow-up sample with the control group only). We then combined information across partners by averaging the values of the scale for the two partners. This measure was only defined for couples who were married or in a romantic relationship at the time of the follow-up survey.

Relationship quality: Relationship commitment

We measured a couple's relationship commitment by using a continuous variable that ranged from 0 to 10. This measure was based on the response to a question on the follow-up survey that asked, "On a scale from 0 to 10, where 0 is not at all committed and 10 is completely committed, how committed are you to your [marriage/relationship] with [partner]?" A similar measure was previously used in the PACT HMRE study (Moore et al. 2018). The measure used the average of the two partners' responses and was only defined for couples who were married or in a romantic relationship at the time of the follow-up survey.

Relationship quality: Relationship happiness

We measured relationship happiness by using a continuous variable ranging from 0 to 10. This measure was based on the response to a question on the follow-up survey that asked, "On a scale from 0 to 10, where 0 is not at all happy and 10 is completely happy, taking all things together, how happy would you say your relationship with [partner] is?" The measure was adapted from one used in the BSF study (Moore et al. 2012). A similar measure was previously used in the PACT HMRE study (Moore et al. 2018). The measure used the average across the two partners' responses and was only defined for couples who were married or in a romantic relationship at the time of the follow-up survey.

Co-parenting: Co-parenting quality

We measured the quality of the co-parenting relationship by using a single summary scale of 10 items from the Parenting Alliance Inventory, a well-established, 20-item scale of the quality of the co-parenting relationship created by Abidin and Brunner (1995). These items indicated whether respondents thought that they and their partner communicated well in their co-parenting roles and were a good co-parenting team:

1. I believe [Partner] is a good parent.
2. [Partner] and I communicate well about our children/child.
3. I feel good about [Partner]'s judgment about what is right for our children/child.
4. [Partner] makes my job of being a parent easier.
5. [Partner] and I are a good team.

6. [Partner] knows how to handle children well.
7. When there is a problem with our children/child, we work out a good solution together.
8. [Partner] is willing to make personal sacrifices to help take care of our children/child.
9. Talking to [Partner] about our children/child is something I look forward to.
10. [Partner] pays a great deal of attention to our children/child.

For each statement, the survey asked respondents to report their level of agreement on a four-point scale that ranged from strongly agree to strongly disagree. We assigned each response category a number ranging from 1 to 4, with higher values indicating stronger agreement. For respondents who responded to at least seven of the 10 questions, we calculated a scale score by taking the average value of our assigned number across the different questions. The resulting scale ranged from 1 to 4, with higher values indicating better co-parenting quality ($\alpha = 0.94$ based on data from the follow-up sample with the control group only). We then combined information across partners by averaging the values of the scale for the two partners. The scale was only defined for couples who were still co-parenting at follow-up, which included couples who were either romantically involved or no longer romantically involved but who shared a biological child.

Connection to the labor market: Employed or taking steps to find a job

We measured connection to the labor market by a single measure of whether respondents reported being employed or taking steps to find a job. This binary variable equaled 1 if respondents were ever employed at any time during the first year after study enrollment or indicated that in the past year they had done any of the following:

- Created or updated a resume
- Looked for a job
- Submitted a job application
- Gone on a job interview

We analyzed this measure separately for men and women.

Labor market success: Monthly earnings

We measured labor market success by using self-reported earnings. The follow-up survey included information on job stop and start dates and pay rates for all formal jobs held since study enrollment, as well as earnings from informal jobs held during this period. We combined this information to construct average monthly earnings in all reported jobs during the first year since the random assignment. We analyzed this measure separately for men and women.

Family economic well-being: Family economic hardship scale

We measured family economic well-being by using a single summary scale of six items adapted from the Improving Family Services Study, the instrument for the National Evaluation of Partnerships to Demonstrate the Effectiveness of Supportive Housing for Families in the Child Welfare System. The six-item scale (with values ranging from 0 to 6) represents how many of the following six economic hardships the family experienced in the past year:

1. Cut the size of their meals or skipped meals because they couldn't afford enough food

2. Moved in with other people, even for a little while, because of financial problems
3. Asked to borrow money from friends or family
4. Went without a phone because they could not afford to pay the bill or buy extra cell phone minutes
5. Sold or pawned their belongings or took a payday loan or auto title loan
6. Thought about going to the doctor, dentist, or hospital but decided not to because of the cost

We focused this measure on the family in which the youngest child at baseline was most likely to reside. If the couple was still together at follow-up and both members of the couple responded to the survey, we averaged the responses of both members of the couple to create the scale. If the couple was still together at follow-up and only one member of the couple responded to the survey, we based the measure on the responding member. If the couple was no longer together at follow-up, we based the measure on the couple member who was the youngest child's biological parent. If both members of the couple were biological parents of the youngest child and the couple was no longer together at follow-up, we based the measure on the response of the mother.

Confirmatory analysis methods

For each confirmatory outcome, we estimated the impact of the Empowering Families program using a multivariate weighted-least-squares regression model. This approach accounted for the unique features of the random assignment design, such as stratification and varying random assignment probabilities, and allowed for adjustments for the few differences in baseline characteristics between the Empowering Families and control groups. We used analysis weights to account for the varying random assignment probabilities and survey nonresponse.

We included three types of covariates in the regression models. First, all models included a covariate to account for the fact that through most of the study period random assignment was conducted separately for English-speaking and Spanish-speaking couples. Second, to improve the statistical precision of our impact estimates, for each outcome, we included baseline versions of all confirmatory outcomes that were available. To the extent that any of the covariates correlated with the outcome measure, including them in the regression model could improve the precision of the impact estimates by reducing the residual variation in the outcome measure (Orr 1999). Third, we included covariates to account for statistically significant differences in a baseline characteristic of the Empowering Families and control group sample members, including women's employment and earnings in the past 30 days and the relationship happiness measure at baseline. This third category did not add any additional controls because these were all baseline versions of confirmatory outcomes. For any cases with missing baseline data for one or more covariates, we used dummy variable adjustment, which involves setting any missing baseline values to a single constant value and including flag variables for missing values as additional covariates in the regression model (Puma et al. 2009).

We deemed impact estimates as statistically significant if the associated *p*-value of the estimate fell below 10 percent based on a two-tailed hypothesis test. We further distinguished *p*-values that fell between 5 percent and 10 percent, between 1 percent and 5 percent, and below 1 percent. To help interpret the magnitude of the impact estimates, we calculated and reported an effect size for each outcome. For continuous outcomes, the effect size was calculated by the impact estimate from the regression model divided by the unadjusted pooled standard deviation of the outcome for respondents across both the Empowering Families and control groups (Hedges 1981). For dichotomous outcomes, the effect size was calculated by dividing the log odds ratio of the two study groups by 1.65 (Cox 1970).

Constructing couple-level outcomes

We constructed the relationship quality and co-parenting measures as couple-level outcomes that incorporated responses of both members of the couple. Specifically, consistent with the practice used in the BSF evaluation (Moore et al. 2012) and the PACT HMRE evaluation (Moore et al. 2018), we constructed a couple-level outcome by first constructing the measure separately for each member of the couple and then taking the average of each partner's individual-level measure to create a couple-level version of the measure. We then estimated program impacts for each outcome with a weighted least squares regression, using the couple as the unit of analysis.

This approach offers three main advantages. First, it is transparent and easy for readers of the report to understand. It gives equal weight to each partner's response and does not require advanced statistical knowledge to understand. Second, within the context of program impact studies, taking the average of the two partners' individual-level versions of the measures provides a built-in statistical adjustment for study designs in which the two partners are randomly assigned as a single unit. For analysis, constructing and analyzing outcomes at the couple level naturally accounts for this type of couple-level random assignment design (Hsiao 2003). Third, the BSF and PACT HMRE evaluations used this approach in their main impact analysis. Using the same approach for the Empowering Families impact study enables a direct comparison of results with the findings from the BSF and PACT HMRE studies. In addition, because we focused the confirmatory analysis on couple-level (rather than individual-level) variables, the analysis included a smaller number of outcomes, thus reducing concerns about multiple comparisons. As part of our consistency and robustness checks, we estimated impacts for the same outcomes using hierarchical linear modeling, an alternative approach for couple-level analysis. We also examined these measures separately for men and women.

Treatment of missing outcome data

For missing outcome data, we used nonresponse weights (described earlier) to account for survey nonresponse. Nonresponse weights adjust the data to be representative of all sample members, not just those who complete the survey. We developed two types of weights to correspond to the two levels at which outcomes were measured: (1) the couple level and (2) the individual level.

For item nonresponse, we used case deletion in most instances, excluding those who did not respond to the survey questions for that particular outcome. We made two exceptions to this practice:

Imputing values when one partner had missing data. For confirmatory analysis of couple-level measures (including relationship status, relationship quality, and co-parenting), we used imputation for cases in which one partner's response was missing, either because that partner did not respond to the survey or because the partner did respond but did not answer some of questions required to construct the measure. Specifically, we imputed the missing items using baseline covariates; follow-up survey responses from the other partner; and, if possible, available non-missing survey items from the partner with missing items. The imputation approach used an iterative process to assign values for each outcome measure with missing data. Using this technique, we used baseline data as well as information from the other partner's survey to impute multiple values for these missing survey items. We conducted this imputation procedure separately for members of the Empowering Families and control groups. If both partners failed to respond to the follow-up survey, we excluded the couple from our analysis.

Using this imputation procedure, we generated five replacement values for each missing value. We conducted all analysis on each of the five imputed values, then combined the results using a standard

approach that first accounted for the uncertainty associated with missing data imputations (Rubin 1987). We also conducted sensitivity checks using non-imputed data. We discuss the findings from these checks later in this appendix.

Imputing missing earnings data. To account for missing data in average earnings, we used hot deck imputation, in which missing values are replaced with an observed response from a similar sample member. We used this method to impute some survey items that were used to construct the confirmatory earnings measure. These items included earnings from informal jobs, job duration, job start date, and hours worked. We used correlation analyses to identify characteristics for forming groups of similar survey respondents. We then randomly selected another member of the group and used that member's value to fill in the missing value for the respondent with the missing item. We conducted this imputation procedure separately for members of the Empowering Families and control groups. The hot deck procedure we used did not account for missing earnings due to missing wage rates. We chose not to impute wage rates for our confirmatory analysis because wage rates were conditional on the value of other inputs, such as amount and rate of pay. The respondents who did not have average earnings due to missing wage rates were excluded from the analyses. We analyzed attrition for this measure and conducted sensitivity and robustness checks using non-imputed data, and imputed data including imputed wage rates as discussed later in this appendix.

Analyzing outcomes not defined for the full sample

The five relationship quality measures in our list of confirmatory outcomes were available only for couples whose relationship was still intact at the time of the follow-up survey. If the program influenced the types of couples who stayed together, then the couples in the two research groups who were available to include in this analysis would no longer be initially equivalent. This could lead to biased estimates of the program's effectiveness on these outcomes. Researchers sometimes refer to this possibility as a truncation problem, because the outcome is unavailable or undefined for some sample members (McConnell et al. 2008). In our sample, 85 percent were married or romantically involved at the time of the follow-up survey. This high rate of couples remaining together over the follow-up period suggested that the truncation problem should be a relatively small concern for the Empowering Families study.

To assess the potential risk of bias in the estimates of program effects on relationship quality measures, we followed the process used by the BSF evaluation and treated truncation as a type of sample attrition (Moore et al. 2012). We used standard techniques for assessing the risk of bias in our estimates due to attrition.

As a first step, we compared overall and differential attrition in each analysis sample to The What Works Clearinghouse's (WWC) attrition standard. If this standard was met, we determined that there was a low risk of bias due to attrition. If a sample failed to meet the attrition standard, the second step was testing the Empowering Families group and control group in each analytic sample for equivalence on observable demographic and social economic characteristics that research has shown to correlate with the outcome of interest. Analytic samples that met neither the attrition nor the equivalence standard would be deemed to produce impact estimates with substantial risk of bias so readers would be cautioned to interpret these findings more carefully than other experimental impact estimates. In the following section, we discussed the results of the attrition analyses.

Results of the attrition analyses

Overall sample attrition and the difference in attrition between the research groups were low for The Parenting Center (Table A.3). About 90 percent of couples had at least one partner who responded to the follow-up survey and the difference in response rates between the Empowering Families group and the comparison group was only 1.8 percent. This combination of overall and differential attrition meets standards for low risk of attrition bias for outcomes defined for couples that had at least one partner responding to the survey. The same is also true for all other analysis samples with one exception: attrition was high for the analytical sample for male labor market related outcomes. We tested equivalence on observable demographic and social economic characteristics, and baseline version of confirmatory labor market outcomes and found the sample met the baseline equivalence standards. Thus, the risk of attrition-related bias was low or moderate for all relevant samples for the analysis of the effects of the Empowering Families program on the confirmatory outcomes.

Table A.3. Results of assessments of risk of attrition bias for confirmatory analysis samples

Sample description	Overall attrition (%)	Differential attrition (%)	High or low attrition	Equivalent at baseline?
At least one partner responded	10.4	1.8	Low	n.a.
Women	13.9	2.2	Low	n.a
Men	22.6	4.5	Low	n.a
Couples with relationship quality measures	25.1	0.4	Low	n.a.
Women with labor market related measures	20.6	1.0	Low	n.a.
Men with labor market related measures	28.3	6.1	High	Yes

Source: STREAMS baseline and one-year follow-up surveys conducted by Mathematica.
n.a. = not applicable.

Details of impacts on confirmatory outcomes

For seven of the 13 confirmatory outcomes, we found statistically significant differences in the average outcomes of respondents in the Empowering Families and control groups (Table A.4 presents the same results as Tables 5 and 6 in the impact study report but includes the corresponding *p*-values).[2]

[2] Although not shown in this appendix, the robustness checks using an HLM approach show similar results for five relationship quality measures with nearly identical magnitudes. The robustness checks including imputed wage rates also show similar results for earnings measure.

Table A.4. Impacts of the Empowering Families program on confirmatory outcomes

Outcome	Empowering Families group	Control group	Impact	Effect size	*p*-value
Relationship quality[a]					
Support and affection (range = 1 to 4)	3.41	3.32	0.08**	0.20	0.005
Avoidance of destructive conflict behaviors (range = 1 to 4)	2.83	2.70	0.13**	0.21	0.001
Use of constructive conflict behaviors (range = 1 to 4)	3.23	3.13	0.10**	0.23	0.002
Relationship commitment (range = 0 to 10)	9.61	9.28	0.33**	0.30	0.001
Relationship happiness (range = 0 to 10)	8.63	8.29	0.34**	0.22	0.003
Number of couples [c]	366	307			
Relationship status					
Couple married to each other (%)	58	56	2	0.04	0.493
Couple married or romantically involved (%)	86	85	0	0.03	0.845
Number of couples	436	352			
Co-parenting[b]					
Quality of co-parenting relationship (range = 1 to 4)	3.44	3.33	0.11**	0.22	0.002
Number of couples	413	341			
Connection to the labor market					
Employed or taking steps to find a job (%)					
Women	73	71	1	0.03	0.704
Men	95	95	0	0.02	0.908
Number of women	421	340			
Number of men	379	291			
Labor market success					
Monthly earnings, survey report ($)					
Women	896	990	-94	-0.07	0.259
Men	2,359	2,353	5	0.00	0.969
Number of women	389	317			
Number of men	355	268			
Family economic well-being					
Family economic hardship scale (range = 0 to 6)	1.53	1.73	-0.20+	-0.13	0.064
Number of couples	427	347			

Source: STREAMS baseline and one-year follow-up surveys conducted by Mathematica.

[a] Only 85 percent of couples who were married or in a romantic relationship at the time of the follow-up survey were included in analyses of outcomes in this domain. Impact analyses on relationship status and relationship quality outcomes used multiple imputation.

[b] We restricted the analysis of measures in this domain to couples who were still co-parenting at follow-up. Impact analyses on co-parenting quality used multiple imputation.

[c] Sample sizes varied by outcome. We reported the largest sample size.

**/*/+ Impact estimates were statistically significant at the .01/.05/.10, two-tailed test.

Robustness checks

To verify that the findings from our confirmatory analysis were not overly sensitive to specific analytic decisions that we made, we repeated the confirmatory analysis with different analytic choices. Specifically, we compared our primary model to the models without imputation and to four different regression model specifications. First, for outcomes for which we used multiple imputations or hot deck imputations, we estimated the results without imputation. Second, we analyzed a model without survey nonresponse weights. Instead, this model used weights to adjust only for the varying probabilities of the stratified random assignment. Third, we analyzed a model that did not use any covariate adjustment. Finally, we conducted a multiple comparison adjustment within each outcome domain using the Benjamini-Hochberg method (Benjamini and Hochberg 1995).

Our confirmatory impact findings were robust to these alternative estimation techniques (Table A.5). For 11 of 13 confirmatory outcomes, none of these analytic decisions led to results that differed based on statistical significance or substantive importance. For two outcomes—women's earnings and the family economic hardship scale—there was a difference between the primary method and the model that did not adjust for baseline characteristics. In both cases, the estimate from the primary method was statistically significant and the estimate without adjustment was not. In both cases, the estimates from the primary method were similar to other robustness checks.

Our impact findings were also robust to alternative measures of the confirmatory outcomes (Table A.6). For some but not all of the outcomes selected for the confirmatory analysis, the follow-up survey included more than one measure of the underlying construct or included items that enabled us to construct the outcome measure in more than one way. For example, for relationship status, in addition to the confirmatory outcome that measured whether a couple was married or romantically involved, the follow-up survey also included a question about whether a couple lived together all or most of the time or whether a couple was married or engaged with a wedding date. Similarly, in addition to the confirmatory outcomes that measured self-reported monthly earnings, the survey included questions on hours worked or whether the respondent was employed in a job with fringe benefits. To verify that the findings from our confirmatory analysis were not overly sensitive to specific measures that we chose, we conducted the confirmatory analyses with different measures that were similar to our confirmatory outcomes. The pattern of findings was similar.

Table A.5. Impacts of Empowering Families on confirmatory outcomes, using alternative methods

Outcome	Primary method	Non-imputation	No weights	No covariate adjustment	Multiple comparison adjustment
Relationship status					
Couple married to each other (%)	2	2	2	-2	2
Couple married or romantically involved (%)	0	0	0	-1	0
Relationship quality[a]					
Support and affection (range = 1 to 4)	0.08*	0.08*	0.09**	0.08*	0.08*
Avoidance of destructive conflict behaviors (range = 1 to 4)	0.13**	0.13**	0.13**	0.14**	0.13**
Use of constructive conflict behaviors (range = 1 to 4)	0.10**	0.11**	0.11**	0.08*	0.10*
Relationship commitment (range = 0 to 10)	0.33**	0.35**	0.33**	0.31**	0.33**
Relationship happiness (range = 0 to 10)	0.34**	0.36**	0.34**	0.30*	0.34*
Co-parenting[b]					
Quality of co-parenting relationship (range = 1 to 4)	0.11**	0.11**	0.11**	0.09*	0.11**
Connection to the labor market					
Employed or taking steps to find a job (%)					
Women	1	1	1	0	1
Men	0	0	0	-1	0
Labor market success					
Monthly earnings, survey report ($)					
Women	-94	-85	-95	-261*	-94
Men	5	59	5	-132	5
Family economic well-being					
Family economic hardship scale (range = 0 to 6)	-0.20+	n.a.	-0.20+	-0.16	-0.20+
Sample size[c]					
Couple	788	787	787	787	787
Women	761	761	761	761	761
Men	670	670	670	670	670

Source: STREAMS baseline and one-year follow-up surveys conducted by Mathematica

[a] Only 85 percent of couples who were married or in a romantic relationship at the time of the follow-up survey were included in analyses of outcomes in this domain.

[b] We restricted the analysis of measures in this domain to couples who were still co-parenting at follow-up.

[c] Sample sizes varied by outcome. We reported the largest sample size.

**/*/+ Impact estimates were statistically significant at the .01/.05/.10, two-tailed test.

n.a. = not applicable (because there was only one outcome in the domain).

We supplemented the survey data with data from the NDNH, a database of wage and employment information maintained by OCSE. These data include earnings from all jobs covered by unemployment

insurance. They do not include earnings from employment not covered by unemployment insurance—such as work by independent contractors, informal jobs, or work in certain sectors, such as government. OCSE identified the NDNH records for Empowering Families couples using Social Security numbers (SSNs) and other personal identifying information. However, about 40 percent of study participants in The Parenting Center site did not provide a valid SSN at the time of study enrollment and study participants who provided an SSN were not representative of study participants overall. For example, over 80 percent of those missing SSN were Hispanic compared to less than 40 percent of those not missing SSN; less than 40 percent of those missing SSN were in couples in which both partners have at least a high school degree or GED, compared to more than 60 percent among those not missing SSN.

Because study participants who provided SSNs are not representative of all study participants for this site, we did not use the NDNH data in the confirmatory analysis. We examined eight labor market success outcomes based on NDNH data as robustness checks. We found no statistically significant impacts on these outcomes (Table A.6). This finding for study participants who provided valid SSNs is consistent with confirmatory findings based on survey data for the full sample of survey respondents showing no statistically significant impacts on labor market success outcomes.

Table A.6. Impacts of Empowering Families on alternative measures of confirmatory outcomes

Outcome	Empowering Families group	Control group	Impact	Effect size	*p*-value
Relationship status					
Couple living together all or most of the time (%)	78	77	1	0.04	0.673
Couple married or engaged with a wedding date (%)	62	59	3	0.07	0.205
Relationship quality					
Fidelity (%)	89	90	0	-0.02	0.920
Avoidance of destructive conflict behaviors (range = 1 to 4)					
Women	2.80	2.68	0.11*	0.15	0.028
Men	2.87	2.73	0.14*	0.18	0.013
Use of constructive conflict behaviors (range = 1 to 4)					
Women	3.28	3.16	0.12**	0.20	0.005
Men	3.25	3.13	0.12*	0.19	0.014
Relationship commitment (range = 0 to 10)					
Women	9.45	9.26	0.19	0.12	0.125
Men	9.61	9.20	0.42**	0.27	0.002
Relationship happiness (range = 0 to 10)					
Women	8.38	8.06	0.32*	0.16	0.026
Men	8.74	8.45	0.29+	0.16	0.056
Support and affection (range = 1 to 4)					
Women	3.36	3.29	0.07+	0.13	0.072
Men	3.43	3.35	0.08+	0.16	0.055
Connection to labor market					

Outcome	Empowering Families group	Control group	Impact	Effect size	*p*-value
Ever employed in the first year (survey report) (%)					
Women	63	65	-2	-0.06	0.419
Men	92	89	3	0.21	0.218
Labor market success					
Number of months employed (survey report)					
Women	5.8	5.7	0.1	0.01	0.810
Men	9.3	9.1	0.1	0.03	0.721
Hours worked per week (survey data)					
Women	16	16	0	-0.01	0.816
Men	33	34	-1	-0.04	0.633
Employment with fringe benefits at the time of survey (survey reports) (%)					
Women	27	26	1	0.02	0.817
Men	51	52	-1	-0.02	0.803
Monthly earnings in the first year (administrative records) ($)					
Women	1,099	1,147	-49	-0.03	0.581
Men	2,210	2,120	91	0.04	0.465
Monthly earnings across two years (administrative records) ($)					
Women	1,145	1,178	-33	-0.02	0.780
Men	1,949	2,075	-126	-0.06	0.395
Ever employed in the first year (administrative records) (%)					
Women	73	76	-3	-0.10	0.433
Men	81	78	3	0.11	0.350
Number of quarters employed (administrative records)					
Women	2.36	2.48	-0.13	-0.08	0.376
Men	2.73	2.66	0.07	0.04	0.569
Family economic well-being					
Any reliance on public assistance (%)					
Women	49	53	-4	-0.09	0.239
Men	35	37	-2	-0.06	0.536
Family economic hardship measure subscale (%)					
Whether cut the size of their meals or skipped meals because they couldn't afford enough food	25	27	-2	-0.04	0.543
Whether moved in with other people because of financial problems	15	17	-2	-0.07	0.302

Outcome	Empowering Families group	Control group	Impact	Effect size	*p*-value
Whether asked to borrow money from friends or family	34	42	-8**	-0.18	0.008
Whether went without a phone because they could not afford it	23	24	-2	-0.05	0.496
Whether sold or pawned their belongings or took a payday loan or auto title loan	23	22	1	0.03	0.622
Whether thought about going to the doctor, dentist, or hospital but decided not to because of the cost	34	42	-7*	-0.18	0.018
Sample size[a]					
Couples	436	351			
Women	423	341			
Men	379	291			

Source: STREAMS baseline and one-year follow-up surveys conducted by Mathematica.

Note: The numbers for the control group were regression-adjusted predicted values of outcomes for each subgroup. Data were weighted to account for differences in random assignment probabilities and survey nonresponse.

[a] Only couples who were married or in a romantic relationship at the time of the follow-up survey were included in analyses of outcomes in this domain.

[b] We restricted the analysis of measures in this domain to couples who were still co-parenting at follow-up.

[c] Sample sizes varied by outcome. We reported the largest sample size.

**/*/+ Impact estimates were statistically significant at the .01/.05/.10 levels, respectively, two-tailed test.

◊◊◊/◊◊/◊ Statistically significant differences among the subgroup impact estimates at the .01/.05/.10 levels, respectively.

Subgroup analyses

We explored whether the impacts of Empowering Families differed for subgroups of couples. We estimated impacts separately for subgroups of couples based on two characteristics: (1) whether a couple's primary language was English or Spanish and (2) a couple's initial marital status. We limited the subgroup analyses to include only confirmatory outcomes.

We found no statistically significant differences for impacts between English-speaking and Spanish-speaking couples (Table A.7). When we examined impacts separately for couples by their initial marital status (Table A.8), we found that the program increased the likelihood of marriage among couples who were not married at the time of study enrollment by 7 percentage points. This difference was statistically significant at 10 percent level. We found that Empowering Families had no discernible effect on the likelihood that initially married couples would remain married during the one-year follow-up period. The difference in the impact on marriage between couples who were initially unmarried and couples who were initially married was statistically significant at the 10 percent level. No other outcome had a statistically significant impact that was also significantly different across the initially married and initially unmarried subgroups.

Table A.7. Impacts of Empowering Families, by couple's primary language

Outcome	Spanish speakers		English speakers		*p*-value for subgroup difference
	Control group	Impact	Control group	Impact	
Relationship status					
Couple married to each other (%)	64	-1	52	4	0.158
Couple married or romantically involved (%)	92	-1	84	2	0.443
Relationship quality[a]					
Avoidance of destructive conflict behaviors (range = 1 to 4)	2.79	0.16**	2.60	0.10	0.493
Use of constructive conflict behaviors (range = 1 to 4)	3.06	0.15**	3.21	0.07	0.286
Relationship commitment (range = 0 to 10)	9.26	0.33**	9.19	0.38*	0.784
Relationship happiness (range = 0 to 10)	8.41	0.38**	8.06	0.33+	0.829
Support and affection (range = 1 to 4)	3.30	0.11**	3.32	0.00	0.292
Co-parenting[b]					
Quality of co-parenting relationship (range = 1 to 4)	3.35	0.10**	3.33	0.12*	0.846
Connection to the labor market					
Employed or taking steps to find a job (%)					
Women	63	4	79	-1	0.427
Men	97	0	93	0	0.874
Labor market success					
Monthly earnings (survey report) ($)					
Women	1,018	-187	965	-11	0.353
Men	2,602	68	2,149	-50	0.654
Family economic well-being[c]					
Family economic hardship scale (range = 0 to 6)	1.09	-0.14	2.25	-0.25	0.594
Sample size					
Couples	353		434		
Women	344		417		
Men	322		348		

Source: STREAMS baseline and one-year follow-up surveys conducted by Mathematica.

Note: The numbers for the control group were regression-adjusted predicted values of outcomes for each subgroup. Data were weighted to account for differences in random assignment probabilities and survey nonresponse.

[a] Only couples who were married or in a romantic relationship at the time of the follow-up survey were included in analyses of outcomes in this domain.

[b] We restricted the analysis of measures in this domain to couples who were still co-parenting at follow-up.

[c] Sample sizes varied by outcome. We reported the largest sample size.

**/*/+ Impact estimates were statistically significant at the .01/.05/.10 levels, respectively, two-tailed test.

◊◊◊/◊◊/◊ Statistically significant differences among the subgroup impact estimates at the .01/.05/.10 levels, respectively.

Table A.8. Impacts of Empowering Families, by initial marital status

Outcome	Initially married		Initially unmarried		*p*-value for subgroup difference
	Control group	Impact	Control group	Impact	
Relationship status					
Couple married to each other (%)	93	-2	11	7+	0.053◊
Couple married or romantically involved (%)	94	-1	78	3	0.427
Relationship quality[a]					
Avoidance of destructive conflict behaviors (range = 1 to 4)	2.71	0.12**	2.67	0.13	0.930
Use of constructive conflict behaviors (range = 1 to 4)	3.10	0.13**	3.20	0.07	0.393
Relationship commitment (range = 0 to 10)	9.28	0.29*	9.13	0.44**	0.472
Relationship happiness (range = 0 to 10)	8.31	0.27+	8.09	0.50*	0.348
Support and affection (range = 1 to 4)	3.29	0.09*	3.33	0.07	0.768
Co-parenting[b]					
Quality of co-parenting relationship (range = 1 to 4)	3.35	0.10**	3.32	0.12+	0.821
Connection to the labor market					
Employed or taking steps to find a job (%)					
Women	67	4	77	-2	0.295
Men	94	3	97	-4	0.030◊◊
Labor market success					
Monthly earnings (survey report) ($)					
Women	1,021	-143	945	-26	0.515
Men	2,480	-29	2,174	37	0.812
Family economic well-being					
Family economic hardship scale (range = 0 to 6)	1.68	-0.19	1.81	-0.22	0.880
Sample size[c]					
Couples	443		344		
Women	430		331		
Men	398		272		

Source: STREAMS baseline and one-year follow-up surveys conducted by Mathematica.

Note: The numbers for the control group were regression-adjusted predicted values of outcomes for each subgroup. Data were weighted to account for differences in random assignment probabilities and survey nonresponse.

[a] Only couples who were married or in a romantic relationship at the time of the follow-up survey were included in analyses of outcomes in this domain.

[b] We restricted the analysis of measures in this domain to couples who were still co-parenting at follow-up.

[c] Sample sizes varied by outcome. We reported the largest sample size.

**/*/+ Impact estimates were statistically significant at the .01/.05/.10 levels, respectively, two-tailed test.

◊◊/◊◊/◊ Statistically significant differences among the subgroup impact estimates at the .01/.05/.10 levels, respectively.

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