Journal of Consulting and Clinical Psychology
2017, Vol. 85, No. 1, 5–12

0022-006X/17/$12.00 http://dx.doi.org/10.1037/ccp0000156

Education and Job-Based Interventions for Unmarried Couples Living With Low Incomes: Benefit or Burden?

Hannah C. Williamson, Benjamin R. Karney, and Thomas N. Bradbury
University of California, Los Angeles

Objective: Government initiatives undertaken to improve the earning potential of disadvantaged unmarried parents assume that job training and additional schooling will strengthen these families, yet alternative models predict that these same interventions could overwhelm couples' limited resources, undermining family stability. ***Method:*** We use 3 waves of dyadic data and propensity score analysis to test these competing perspectives by examining the effects of job-related and school-related interventions on 3-year marriage rates. The sample consists of unmarried new parents averaging $20,475 in household income, 52% of whom are African American and 20% of whom are Hispanic/Latino. ***Results:*** Marriage rates decreased, from 17% to 10%, for couples in which men participated in school-related interventions. Mediation analyses indicate that school-related interventions reduce the amount of time men spend with their child and the amount of money they contribute to their household, reducing marriage rates in turn. Marriage rates were unaffected by women's participation in school-related interventions, and by men's and women's participation in job-related interventions. ***Conclusion:*** Implementing economic interventions that increase income while minimizing demands on the limited resources of economically distressed couples may prove necessary for strengthening society's most vulnerable families.

What is the public health significance of this article?
Well-intentioned government programs may cause adverse effects for families if they overlook the psychological constraints operating upon people living in poverty. The U.S. government invests hundreds of millions of dollars annually to combat poverty, typically with mixed or small effects. Emerging principles on the psychology of scarcity and deprivation can be used to improve these interventions and help reduce the toll of poverty on American families and children.

Keywords: educational interventions, low income, marriage, scarcity, unmarried parents

Supplemental materials: http://dx.doi.org/10.1037/ccp0000156.supp

The percentage of children born to unmarried parents has increased sharply over the last half century, from 5% of births in 1960% to 41% of births in 2013 (Child Trends Databank, 2015). Although approximately 82% of unwed parents are romantically involved at the time of birth and express a strong desire to marry, only 15% do so by the time their child is 5 years old (McLanahan, 2009b). Many of these couples live in poverty when their child is born and their children, in turn, are more likely than poor children of married parents to encounter a host of cognitive, emotional, and social problems, and to live in poverty as adults (Amato, 2005; McLanahan, 2009b). Stabilizing these partnerships is a central element in government-sponsored efforts to improve the outcomes of children born to unmarried parents, and toward this end more than $600 million has been invested in programs designed to encourage couples to consider longer-term commitments (Manning, Brown, Payne, & Wu, 2014). Unfortunately, large-scale randomized controlled tests of these relationship-focused programs have proven to be ineffective for increasing marriage rates and relationship stability (Wood, Moore, Clarkwest, & Killewald, 2014; see Cowan & Cowan, 2014, for a discussion of other outcomes), highlighting instead the need to target couples' economic capacities directly in order to promote family stability (Johnson, 2012).

Stabilizing vulnerable families by targeting their financial prospects finds broad support in prominent psychological models of contextual influences on development and social relationships (e.g., Belsky, 1984; Bronfenbrenner, 1986; Conger & Elder, 1994; Karney & Bradbury, 1995) and in associated empirical findings. For example, among those transitioning to parenthood, unmarried couples report less formal education, lower incomes, and higher

This article was published Online First October 24, 2016.

Hannah C. Williamson, Benjamin R. Karney, and Thomas N. Bradbury, Department of Psychology, University of California, Los Angeles.

Preparation of this report was supported by Family Strengthening Scholars Grant 90PD0294 from the Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services awarded to Hannah C. Williamson. Its contents are solely the responsibility of the authors and do not necessarily represent the official views of the Office of Planning, Research and Evaluation, the Administration for Children and Families, or the U.S. Department of Health and Human Services.

The authors would like to thank Alex Morales, Ron Brown, and Kathy Reimer at Children's Bureau of Southern California for their valuable feedback during the conceptual stage of this project, and Megan Sweeney and Andrew Christensen for valuable feedback on earlier drafts of this manuscript.

Correspondence concerning this article should be addressed to Hannah C. Williamson, Department of Psychology, University of California, 1285 Franz Hall, Box 951563, Los Angeles, CA 90095-1563. E-mail: hwilliamson@psych.ucla.edu

unemployment rates than married couples (McLanahan, 2009b), and they identify financial instability as their biggest obstacle to marriage (Gibson-Davis, Edin, & McLanahan, 2005; Edin, 2000). Removing this obstacle with education, job training, and job placement interventions does indeed alter trajectories of family formation, as enhanced financial standing enhances earnings and asset accrual of low-income individuals and, in turn, increases marriage rates (see Schneider, 2015, for a review). Though promising, the immediate relevance of this evidence for stabilizing poor families remains uncertain: Because individuals are the unit of analysis in these prior studies, we can only conclude that improved earning potential increases the chances that an individual will marry any partner. Left unanswered is the critical question of whether it is possible to improve the financial prospects of unmarried new parents as a unit and, in turn, provide their child with a more stable family setting. The present study addresses this question, with a specific focus on (a) whether education-based and employment-based interventions increase marriage rates among unmarried new parents living with low incomes and on (b) the economic and relational factors that might mediate any such associations.

Though it is theoretically and empirically plausible that economic interventions will yield benefits for couples and families, mounting evidence from psychological science points to a compelling alternative possibility. Virtually all aspects of human cognition have built-in limitations, of course (e.g., Baddeley, 1992; Luck & Vogel, 1997), and environmental stress further reduces these capacities (McEwen, 2012). To the extent that economic deprivation compromises cognitive processes, judgment, and decision making, interventions that demand effort and adaptation from low-income individuals may carry costs in the short term that vulnerable families must absorb before realizing any longer-term benefits. Evidence for this possibility comes from a series of experimental and observational studies demonstrating decreased cognitive performance among low-income individuals when faced with the prospect of a financial challenge (e.g., a large car repair bill, nearing the end of one's annual lump sum income; see Gennetian & Shafir, 2015; Mani, Mullainathan, Shafir, & Zhao, 2013; Shah, Mullainathan, & Shafir, 2012).

Extended to the problem of improving the welfare of young, unmarried parents living with low incomes, this alternative view suggests that imposing even well-intentioned demands upon an already taxed family system may compete with their more immediate priorities. For example, the time and effort involved in completing an educational degree or job-training program may come at the expense of parenting, working to support the family, maintaining the relationship, and supporting one's partner as a parent and wage earner. Because poverty induces an understandable focus on acute needs at the expense of distant goals (Shah et al., 2012), decisions to marry among people living in poverty may pivot less on the uncertain long-range benefits of demanding interventions and more on how partners evaluate one another's contributions to pressing concerns arising within the family. As a consequence, work- and school-related interventions for lower-income new parents could create, and draw attention to, incompletely fulfilled family responsibilities, paradoxically reducing rather than increasing marriage rates. Indeed, there is preliminary evidence to suggest that educational gains made after entering into a relationship have a destabilizing effect on marriages, though this work was correlational and not experimental (Lyngstad, 2004; Tzeng & Mare, 1995).

The purpose of this study is to test (a) whether unmarried new parents' participation in job assistance or additional schooling increases or decreases their likelihood of marrying and (b) whether fulfillment of economic responsibilities (i.e., earned income, financial support of child) and relational roles (i.e., daily contact with child, partner perceptions of parenting quality, judgments of relationship satisfaction) mediate any effects of educational interventions on marriage. If the rationale underlying federal educational and job-training programs for low-income couples is correct, individuals receiving these interventions should become better providers and be perceived by their mates as fulfilling key social roles within the family, thus increasing marriage rates above those of couples not receiving these interventions. In contrast, if educational and job-training interventions impose a burden on the limited resources of new parents living with low incomes, then these interventions will detract from fulfillment of immediate financial and family needs, decreasing marriage rates relative to those couples in which partners do not participate in these programs.

Testing these competing views requires longitudinal data collected from unmarried new-parent couples living with low incomes who received educational and employment interventions, along with control data from otherwise equivalent couples who did not receive these interventions. Data from the Building Strong Families program evaluation (BSF; Wood, Moore, Clarkwest, Killewald, & Monahan, 2012) are well suited for this purpose. Comprised of more than 5,000 unmarried couples with low incomes who were either new parents or expecting a child, BSF was a randomized controlled trial testing the effects of relationship education programs on relationship formation; these interventions have been shown to have no effect on 3-year relationship outcomes (Wood et al., 2014). At the same time, large subsamples of BSF couples received education-based assistance (such as working toward a GED) and job-based assistance (such as a work training program), providing a valuable opportunity to examine whether these economic interventions stabilize families and how they might do so. Because individuals were not randomly assigned to education and job interventions, we use propensity score analysis, a commonly used statistical method for equating treatment and control groups outside of a randomized controlled trial design (e.g., Austin, 2011; West et al., 2014), thus strengthening inferences about any effects of job- and school-related interventions on 3-year marriage rates.

Method

Participants

The present sample is drawn from the Building Strong Families (BSF) project (http://www.icpsr.umich.edu/icpsrweb/ICPSR/studies/29781), which was conducted from 2005 to 2011 by Mathematica Policy Research with funding from the Office of Planning, Research, and Evaluation in the U.S. Administration for Children and Families, Department of Health and Human Services. The sample consists of 5,102 heterosexual couples who were expecting a baby or had a baby in the preceding 3 months. Most participants were African American (52%), with Hispanic/Latino participants making up 20% of the sample and White participants making up

12% of the sample. Forty-eight percent of men had graduated from high school, 13% had a GED, and 34% had no high school degree. Fifty-three percent of women had graduated from high school, 8% had a GED, and 33% had no high school degree. Both partners had completed high school in 37% of couples. Women were 23.5 years old ($SD = 4.7$) and men were 25.8 years old ($SD = 6.1$). Forty-two percent of couples were comprised of at least one member below the age of 21. Men had a median annual income in the $10,000–$14,999 range; for women $1–$4,999 was the median annual income.

Procedure

Recruitment and screening. BSF was implemented in eight sites around the country, each of which enrolled between 342 and 1,010 couples (see Dion, Avellar, & Clary, 2010, for more details). Sites enrolled as many eligible couples as possible during their unique sample intake period (approximately 2 years), ending enrollment on a predetermined date (see Wood, Moore, Clarkwest, Hsueh, & McConnell, 2010, for more details). Couples were eligible to participate if (a) both members of the couple agreed to participate, were 18 years of age or older, understood the language in which BSF services were offered (English, and in some locations, Spanish), and gave no indication of relationship violence; and (b) the couple were romantically involved, expecting a baby together or had a baby that was younger than 3 months old, and were unmarried at the time their baby was conceived. The current analyses excluded 348 couples who married between the time their baby was conceived and enrollment in the study, leaving 4,754 unmarried couples.

Follow-up assessments. A follow-up telephone interview was conducted separately with mothers and fathers about 15 months after couples enrolled in the program. Eighty-three percent of mothers and 72% of fathers responded to the 15-month survey; at least one parent responded in 4,425 couples (87% of all couples). A second follow-up telephone interview was conducted separately with mothers and fathers about 36 months after couples enrolled in the program. Eighty percent of mothers and 69% of fathers responded to the 36-month survey; at least one parent responded in 4,427 couples (85% of all couples).

Measures

Interventions. Participation in a school-based intervention since baseline was assessed at the 15-month follow-up by asking participants, "Have you taken any classes to finish high school, get a GED, or learn English?" Responses were coded such that 1 = *yes* and 0 = *no*. Participation in a job-based intervention since baseline was assessed with two questions at the 15-month follow-up. Participants responding "yes" to either "Have you participated in a job training program?" or "Have you participated in a program to help you find a job?" or to both would be coded 1 = *yes*. Participants who responded "no" to both items were coded 0.

Relationship satisfaction. Relationship satisfaction at the 15-month follow-up was measured using a six-item scale. Items were scored on a 4-point scale, with 1 = *strongly agree*, 2 = *agree*, 3 = *disagree*, and 4 = *strongly disagree.* All items were reverse-coded, then averaged to form the final score for each individual. Coefficient alpha was .83 for men and .83 for women. Sample items include the following: "[FATHER/MOTHER] and I enjoy doing even ordinary, day-to-day things together" and "[FATHER/MOTHER] listens to me when I need someone to talk to."

Perception of partner's parenting. This construct was measured with a five-item scale that each participant answered about the child's other parent. Items were scored on a 4-point scale, with 1 = *strongly agree*, 2 = *agree*, 3 = *disagree*, and 4 = *strongly disagree.* All items were reverse-coded, then summed to form the final score for each individual. Coefficient alpha was .88 for men and .90 for women. Example items include the following: "I am satisfied with the responsibility [FATHER/MOTHER] takes for raising [CHILD]" and "[FATHER/MOTHER] is the type of father/mother I want for [CHILD]."

Daily contact with child. Daily contact was measured with a single item at the 15-month follow-up that asked mothers and fathers, "In the past month, how often [have/has] [you/FATHER] spent one or more hours a day with [CHILD]?" Response options included the following: "every day or almost every day," "a few times a week," "a few times in the past month," "once or twice," and "never." If both partners responded "every day or almost every day," this item was coded as 1; any other response combination was coded as 0.

Financial support of child. This construct was measured with a single item given to mothers at the 15-month follow-up that asked,

> Parents deal with meeting the expenses of raising a child in different ways. When answering the next question, I'd like you to think about all the expenses associated with raising [CHILD] such as [his/her] food, clothing, medical expenses, diapers, and any other costs of raising [him/her]. How much of the cost of raising [CHILD] does [FATHER] cover?

Items were scored on a 5-point scale, with 1 = *little or none*, 2 = *less than half*, 3 = *about half*, 4 = *more than half*, and 5 = *all or almost all*.

Income. Income at the 15-month follow-up was assessed through a series of questions. Respondents were first asked, "Did you work for pay in the past month?" If they responded "no," their income was set to $0. Participants responding "yes" were asked, "What were your total earnings in the past month, before taxes and other deductions, including tips, commissions, and overtime?" Respondents who reported that they did not know their exact income or did not want to report their income were asked to choose an income range (with options ranging from "Less than $500" to "Between $5,500 and $6,000"). Each of these respondents was assigned the mean value of the range as their income.

Marriage. To determine whether couples were married at the 36-month follow-up, both participants were asked, "Are you and [PARTNER] married, divorced, separated, or have you never been married to each other?" Two percent of couples disagreed on their marital status. Disagreements were handled by categorizing a couple as married only if both members of the couple reported that they were married.

Propensity Score Model

Sixty-six variables measured at baseline were entered into the propensity score model. This includes 1 dummy variable for initial randomization into the treatment or control groups, 7 dummy

variables representing the eight program sites, and 29 variables for each partner, representing the following constructs: age, ethnicity, race, language spoken, education, current pregnancy status, whether pregnancy was planned, length of time couple has known each other, whether the couple lives together, number of children the couple has together, number of children each partner has with another partner, employment status, amount of time unemployed, receipt of public assistance, depressive symptoms, social support available, attendance at religious services, relationship satisfaction, and attitudes about marriage and parenting. These variables were chosen because they were theorized to have influenced participation in the intervention or the outcome (West et al., 2014). The full list of covariates is provided in online supplemental Table 1.

Analytic Plan

Propensity scores to estimate the likelihood of receiving the job assistance and education interventions, based upon the 66 baseline covariates, were calculated separately to test the effects of these two types of economic interventions independently. Propensity scores were calculated using the *pscore* command in Stata (version 13.1), using logistic regression. Participants who received the intervention were matched with an individual who did not receive the intervention but had a very similar likelihood of having received the intervention, based on their propensity score. Matches were made using the *psmatch2* command (Leuven & Sianesi, 2003) using 1:1 nearest neighbor matching without replacement, with a caliper of .025.

After the four matched data sets were created (father education, father job assistance, mother education, and mother job assistance), traditional multivariate statistics were applied to test the research questions (Guo & Fraser, 2009). To examine whether couples who received the economic interventions were more likely to marry than couples who did not, tests of the difference between two independent proportions (Newcombe, 1998) were conducted to determine whether the proportion of couples who married by 36-months was significantly different between the intervention and control groups.

To test whether relational or financial mechanisms explain the effect of the economic intervention, a series of mediational analyses was conducted for the interventions which had a significant effect on the outcome, using linear and logistic regression. Indirect effects were calculated with bootstrapped confidence intervals to determine whether the indirect effect through each of the mediators was statistically reliable.

Results

Descriptive Statistics

Of the 4,425 couples with data at the 15-month follow-up, 391 (7.7%) men and 574 (11.3%) women reported receiving education, and 823 (16.1%) men and 907 (17.8%) women reported receiving job assistance. Of the 4,427 couples with data at the 36-month follow-up, 854 (16.8%) couples reported that they were married at the 36-month follow-up.

Propensity Score Matching

To determine whether the propensity score matching successfully created matched pairs who were equivalent at baseline, a chi-squared difference test was conducted comparing the treatment and control groups on the 66 covariates before and after matching. In all four of the propensity score calculations, the covariates were significantly different before matching and not significantly different after matching (online supplemental Table 2 presents chi-squared statistics). Each of the 66 covariates was also individually tested after matching using a matched-samples *t* test to determine whether the treatment and control groups were significantly different. All *t* statistics were nonsignificant (see online supplemental Table 1 for all *t* statistics), indicating that the matching was successful and that matched pairs did not differ on any measured characteristic.

The majority of treatment cases were matched to a control case that was sufficiently similar. However, a small number of treatment cases were "off support" indicating that there was not a control case with a propensity score within .025 of the propensity score of the treatment case. These cases (11 for mother education, 6 for father education, 35 for mother job assistance, and 7 for father job assistance; see online supplemental Table 2 for a summary) were excluded from analyses. The final sample sizes for analysis were as follows: $n = 730$ for mother education, $n = 518$ for father education, $n = 1{,}176$ for mother job assistance, and $n = 1{,}132$ for father job assistance.

Likelihood of Marriage

Job assistance intervention. Couples in which the mother received a job assistance intervention (including job training and job search assistance) were no more likely to marry than couples who did not receive this intervention (15.5% vs. 14.8%; difference in proportions = .007; 95% confidence interval [CI] [−.034, .048]). Similarly, no effect was found for couples in which the father received job assistance (17.5% vs. 15.9%; difference in proportions = .016; 95% CI [−.028, .059]).

Education intervention. Couples in which the mother received an education intervention (including taking courses to finish high school, earn a GED, or learn English) were no more likely to marry than couples who did not receive this intervention (16.7% vs. 17.5%; difference in proportions = .008; 95% CI [−.047, .063]). However, couples in which the father received an education intervention were less likely to marry than those in which the father did not receive the education intervention (9.7% vs. 17.0%; difference in proportions = .073; 95% CI [.015, .132]) (see Figure 1).[1]

[1] To test whether the negative effect of father's receipt of an educational intervention on marriage was specific to any subgroups, we tested whether age (one or both partners under 21 vs. both partners over 21), BSF random assignment status (program vs. control), participation in group relationship education (participated vs. did not participate), mother's participation in an education intervention (participated vs. did not participate), and change in employment status (unemployed to employed vs. continued unemployed) moderated the effects. For all five variables, the proportion of couples in which the father received the educational intervention who went on to marry was not significantly different between the two groups. See online supplemental Table 3 for the proportions of couples who married in each group and the chi-squared statistics.

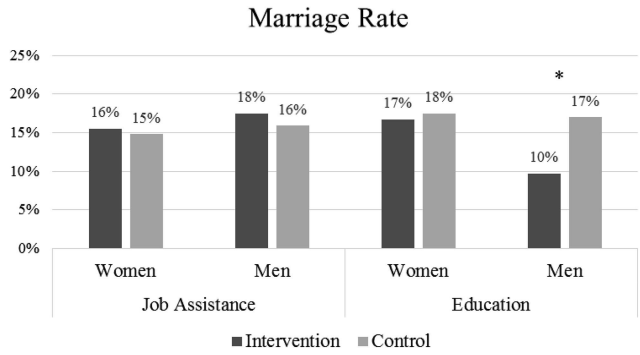

Figure 1. Three-year marriage rates for men and women who did and did not receive job assistance and education interventions. * Intervention and control groups are significantly different (difference in proportions = .073; 95% confidence interval [.015, .132]).

Mediation

As couples in which the father received the education intervention were less likely to marry 3 years later, we tested whether this effect was accounted for by the proposed relational and financial mediators. Mediators were tested simultaneously, though the results remained unchanged when each mediator was tested individually.

Receipt of the education intervention was not associated with mother's relationship satisfaction ($\beta = -0.30$, $p = .76$), father's relationship satisfaction ($\beta = -0.32$, $p = .75$), mother's perception of father's parenting ($\beta = -1.22$, $p = .23$), and father's income ($\beta = -1.35$, $p = .18$) at 15 months. Similarly, 15-month mother relationship satisfaction ($\beta = 1.54$, $p = .12$), mother perception of father's parenting ($\beta = -0.01$, $p = .99$), and father income ($\beta = 0.34$, $p = .734$) were not associated with marriage at 36 months.

However, receipt of the education intervention was significantly negatively associated with father daily contact with the child ($\beta = -1.94$, $p = .05$) and father financial support of the child ($\beta = -2.13$, $p = .03$) at 15 months. These variables were significantly positively associated with marriage at 36 months ($\beta = 2.08$, $p = .04$; $\beta = 2.57$, $p = .01$) and the indirect effect of the education intervention on marriage through these two variables was significant (95% CI [−.053, −.001]; 95% CI [−.059, −.004]). Thus, men who were involved in the education intervention at baseline were less likely to see their child on a daily basis and contributed less to the financial needs of the child 15 months later, which led to a decreased likelihood of marrying the mother of their child by the 36-month follow-up. Figure 2 presents the full mediational model. Additionally, online supplemental Figure 1 presents the results of a mediational analysis of the effect of father's receipt of the job-training intervention.

Discussion

By improving the economic potential of new parents living with low incomes, government programs aim to stabilize the relationships of unmarried couples, promote the well-being of their children and, ultimately, disrupt the cycle of poverty. Although economically vulnerable families are assumed to be capable of withstanding the short-term costs that these programs entail, emerging work in psychology offers the competing view that poverty limits the resources available to people living with low incomes, thwarting efforts to improve their longer-term financial standing. Building upon this perspective, we reasoned that participation in education-based programs (i.e., taking classes to finish high school, get a GED, or learn English) and job-assistance programs (i.e., participating in job training or job search assistance) might detract from partners' already-taxed economic and relational capacities, draw attention to these shortcomings, and paradoxically destabilize couple relationships. Thus we evaluated the competing predictions that education-based and employment-based programs could increase or decrease marriage rates, using a sample of unmarried new parents earning ~$20,000 annually drawn from the larger Building Strong Families project.

Results demonstrate that men's and women's participation in job-based programs, and women's participation in an education-based intervention, failed to improve marriage rates. Men's participation in an education-based intervention did affect marriage rates, however, reliably reducing their likelihood of marriage over 3 years. Mediational analyses suggest that this effect emerges because participation in the intervention interfered with two key avenues by which parents invest in their children, decreasing the amount of time and the amount of money these men were able to devote to raising their child (Thomson & McLanahan, 2012). Thus, the very vulnerabilities that make these families ideal candidates for economic interventions may inadvertently undermine their capacity to benefit from them.

Several considerations temper the conclusions we are able to draw from this analysis. First, we emphasize that couples in this study were not randomly assigned to the education and job interventions. Propensity scores (Austin, 2011) strengthened our ability to make causal claims, and allowed us to control for 66 baseline variables, yet the possibility remains that unmeasured variables could account for the observed findings. Nevertheless, some confidence can be gained from our use of a large and diverse sample, a three-wave 3-year longitudinal design, and a clear and socially significant outcome measure. More critically, we did not observe

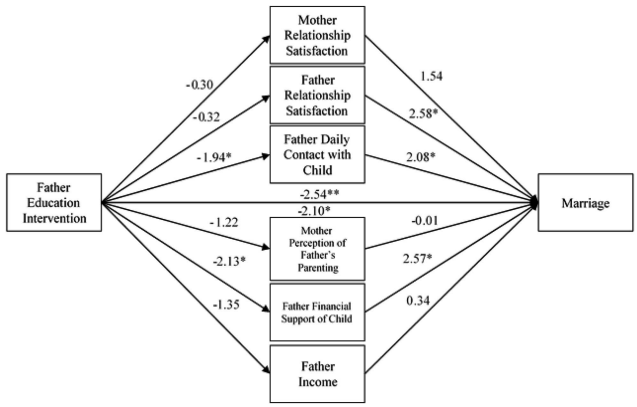

Figure 2. The negative association between educational interventions and 36-month marriage rates is mediated by reductions in fathers' daily contact with the child and fathers' financial support of the child after 15 months. Values shown are standardized regression coefficients. * $p < .05$; ** $p < .01$.

any simple selection effects, whereby individuals' greater inclination to participate in interventions would eventuate in more benefits and higher marriage rates.

Second, the current study is comprised of young couples with relatively few years of formal education and very low incomes, all in the early stages of parenthood. The larger population that this group of families represents is an important focus of policy initiatives in the United States, yet we must caution that the effects observed here may not generalize to other couples, including unmarried parents with higher levels of social advantage and greater economic security. Generalizability is limited further by the fact that this study took place during a time of unprecedented economic upheaval in the United States (2005–2011), with downturns in housing and employment that worsened the already-unambiguous income disparities between the wealthy and the poor (Piketty & Saez, 2014). These conditions might have suppressed marriage rates in this study, while also rendering any educational and job-training programs less effective or less attractive to participants and their partners. The broader implication is that family formation and stability are likely tied to these inequities and to the large-scale economic trends that drive them (Jacobsen & Mather, 2010). While our data cannot speak to these associations or how to mitigate them, our findings do suggest that optimizing the benefits produced by educational and job-related initiatives during parenthood will likely require understanding of the chronic demands that lower-income partners face and how these demands moderate the uptake of these initiatives.

Third, participants in this study were unmarried, and because marriage rates were the sole criterion variable of interest in this study, our findings cannot be extended to other important outcomes like relationship satisfaction or coparenting. Marriage on average tends to provide partners and their children with a number of advantages compared to other family structures such as living with cohabiting parents or a single parent (e.g., Brown, 2004), and it was for this reason that facilitating transition to marriage was the overriding goal within the larger Building Strong Families project. We adopted this same goal within our analyses, but recognize at the same time that encouraging marriage might not be appropriate for all couples, and that other forms of relationships should not be treated as inferior or inadequate. Relationship status can be fluid, and cohabitation arrangements dynamic and complex, particularly among unmarried couples living with low incomes (e.g., Nepomnyaschy & Teitler, 2013). Assessments in BSF likely underestimated this heterogeneity, limiting the conclusions we could draw here about intervention effects but also highlighting the need for greater sensitivity in future studies to the various forms that relationships can take among unmarried and disadvantaged populations.

Fourth, we cannot claim that the null and adverse effects identified here will generalize to other government programs with similar goals. These programs are themselves highly heterogeneous, and they were not sampled here in any systematic manner; other existing programs may well have yielded stronger effects on economic capacity and on relationship outcomes. Nevertheless, at minimum our work does suggest the need for caution before assuming that the intended beneficiaries of couple-directed programs have the time and resources needed to make lasting changes to their earning potential. The present findings do imply further that even interventions aimed primarily at individuals are likely to have ramifications for people close to that individual. We do not know whether the full range of such spill-over effects was considered when individuals were directed toward educational or job-training programs, but we would argue that the success of these programs may depend on a careful assessment of couples' unique strengths, goals, and opportunities. For example, some couples might thrive with both partners working or training for better jobs, some might prefer a traditional male-breadwinner model, while others still might function best with the female partner in the workforce while the male partner takes primary responsibility for childcare.

Fifth, this work is limited by a lack of pre-post data on whether the interventions successfully altered economic factors, such as job attainment and income. The absence of group differences on income at 15 months does suggest that interventions failed to generate their intended effects, but we cannot know whether this factor alone explains why programs failed to improve marriage rates. The possibility remains that programs that do generate sustained improvement in income or economic capacity for couples could offset the detrimental effects—that is, the short-term reductions in money and time available for one's family—imposed by the interventions on the couple. Further research is needed to understand how stress and economic disadvantage impose limits on couples' capacities to incorporate new resources into their lives, how those limits might be managed or overcome, and whether doing so might promote family stability. Our data suggest, for example, that offering financial support in conjunction with education-based interventions (e.g., GED or English as a Second Language classes) could offset the demands that those interventions create for couples living with low incomes, perhaps leading to more stable unions. Randomized controlled trials, even those relatively small in scale, could provide valuable information on whether this is a viable strategy.

Some specificity in interpreting our main findings comes from the absence of effects for women's participation in job-based and education-based interventions (16% vs. 15% marriage rates and 17% vs. 17%, respectively; see Figure 1) and for men's receipt of job-based assistance (18% vs. 16%). Why is it that only men's participation in education-based programs proved costly to eventual marriage rates? In other studies of unmarried couples with lower incomes, mothers have been identified as family gatekeepers, with authority to decide whether fathers will be involved with their child, live with the family, and enter into marriage (e.g., Edin, 2000). Mothers' decisions to marry are assumed to depend heavily on their perceptions of fathers' contributions to the household, especially fathers' financial contributions, in that mothers may disengage from fathers who are not able to provide financially for them and their children (Edin & Reed, 2005). Our mediational results are consistent with this view, in that the apparent effects of education-based interventions on marriage were mediated by men's financial contributions. Moreover, Edin (2000) argued that new mothers are disinclined to marry men judged to be inadequate providers, even if these men are otherwise acceptable as fathers and mates. In our study, partners of men participating in an education-based intervention did not experience lower levels of relationship satisfaction, nor did they perceive fathers as worse parents; nevertheless, independent of these relational factors, mothers were reliably less likely to marry these men (see Figure 2). This apparent salience of financial considerations in decisions to

wed also may explain why we observed adverse effects for men's educational training but not for their job training: Only the former reliably reduced the financial support fathers provided to their new family. This reduction in financial contributions to their child may be especially costly for nonresident fathers, whose ability to spend time with their child—the other factor that contributed to decreased marriage rates—seems predicated on their financial contributions (Carlson, VanOrman, & Turner, 2016).

The absence of relationship satisfaction as a mechanism leading to marriage highlights possible differences in the relationship processes that low-income couples experience compared to more affluent couples. Among middle-class couples, relationship satisfaction reliably predicts later relationship status (Karney & Bradbury, 1995; cf. Lavner & Bradbury, 2012). Yet for low-income couples, partners likely weigh a host of other factors, including financial stability, employment, contributions to the household, and parenting (Gibson-Davis, Edin, & McLanahan, 2005) when making decisions about their relationship status. Future research on the extent to which judgments of satisfaction affect the progression of relationships of low-income couples will help determine the best ways to incorporate this factor into future interventions aimed at stabilizing relationships.

A number of alternative explanations could account for the results we report here. First, the decreased marriage rate we observed may reflect a delay in marrying rather than a decision not to marry at all. For example, if the men in this study have only recently completed educational programs, improvements in their economic capacity may not yet be apparent at the time of our final assessment. Both partners may be waiting to see whether the intervention is going to pay off in terms of meeting the "economic bar" for marriage (Gibson-Davis, 2007), and a longer follow-up interval may have captured this effect. Alternatively, men who improve their economic prospects by participating in educational or job-related training programs may find that they have become more desirable mates to other women (e.g., Greitemeyer, 2007), and therefore may choose not to marry the mother of their child because of their increased comparison level for alternatives (Thibaut & Kelley, 1959). Intervention studies that incorporate more intensive assessments of participants, including qualitative interviews, would allow us to better understand their experience, including how the decision of whether to marry unfolds over time.

Of course, the many children growing up in poverty is a reflection of a larger societal problem in the United States. The proportion of families living in poverty at any given time has remained at approximately 14% for the past 30 years (DeNavas-Walt & Proctor, 2015), and more than 50% of the U.S. population experiences poverty at some time before the age of 65 (Rank & Hirschl, 1999). Comprehensive economic and social reforms that decrease income disparities, provide educational and work opportunities for disadvantaged populations, and provide a safety net for the most vulnerable families are needed to prevent children from growing up impoverished. However, until poverty in the United States is eradicated there will be impoverished families raising children and there will be a need for interventions to help these families enhance their economic circumstances and their family relationships.

The central implication of this work is that imposing new demands on vulnerable families can create long-term disadvantage by depleting an already-deficient set of resources, particularly when those demands reduce fathers' financial contributions. In our analysis of unmarried new parents living in poverty, fewer than 20% went on to marry 36 months later. While we might have expected education-based interventions to stabilize these families and increase marriage rates, neither job training nor education programs, for men or for women, achieved this goal. Instead, men participating in education-based training programs contributed less time and money to the upbringing of their child and, in turn, 10% of these men went on to marry the child's mother, as compared to 17% of comparable men not participating in these programs. These findings draw attention to the possibility that participation in well-intentioned and even potentially effective interventions can be onerous for couples living with few resources, and they argue that the immediate demands of living in poverty must be contained before any benefits of burdensome interventions can be realized.

References

Amato, P. R. (2005). The impact of family formation change on the cognitive, social, and emotional well-being of the next generation. *Future of Children, 15,* 75–96. http://dx.doi.org/10.1353/foc.2005.0012

Austin, P. C. (2011). An introduction to propensity score methods for reducing the effects of confounding in observational studies. *Multivariate Behavioral Research, 46,* 399–424. http://dx.doi.org/10.1080/00273171.2011.568786

Baddeley, A. (1992). Working memory. *Science, 255,* 556–559. http://dx.doi.org/10.1126/science.1736359

Belsky, J. (1984). The determinants of parenting: A process model. *Child Development, 55,* 83–96. http://dx.doi.org/10.2307/1129836

Bronfenbrenner. (1986). Ecology of the family as a context for human development: Research perspectives. *Developmental Psychology, 22,* 723–742. http://dx.doi.org/10.1037/0012-1649.22.6.723

Brown, S. L. (2004). Family structure and child well-being: The significance of parental cohabitation. *Journal of Marriage and Family, 66,* 351–367. http://dx.doi.org/10.1111/j.1741-3737.2004.00025.x

Carlson, M. J., VanOrman, A. G., & Turner, K. J. (2016). Fathers' investments of money and time across residential contexts. *Journal of Marriage and Family*. Advance online publication. http://dx.doi.org/10.1111/jomf.12324

Child Trends Databank. (2015). *Births to unmarried women*. Available at http://www.childtrends.org/?indicators=births-to-unmarried-women

Conger, R. D., & Elder, G. H. (1994). *Families in troubled times: Adapting to change in rural America*. Hawthorne, NY: Aldine.

Cowan, P. A., & Cowan, C. P. (2014). Controversies in couple relationship education (CRE): Overlooked evidence and implications for research and policy. *Psychology, Public Policy, and Law, 20,* 361–383. http://dx.doi.org/10.1037/law0000025

DeNavas-Walt, C., & Proctor, B. D. (2015). *Income and poverty in the United States: 2014. Current population reports* (pp. 60–252). Washington, DC: U.S. Government Printing Office.

Dion, M. R., Avellar, S. A., & Clary, E. (2010). *The Building Strong Families Project: Implementation of eight programs to strengthen unmarried parent families*. Washington, DC: U. S. Department of Health and Human Services, Administration for Children and Families, Office of Planning, Research and Evaluation.

Edin, K. (2000). What do low-income single mothers say about marriage? *Social Problems, 47,* 112–133. http://dx.doi.org/10.2307/3097154

Edin, K., & Reed, J. M. (2005). Why don't they just get married? Barriers to marriage among the disadvantaged. *Future of Children, 15,* 117–137. http://dx.doi.org/10.1353/foc.2005.0017

Gennetian, L. A., & Shafir, E. (2015). The persistence of poverty in the context of financial instability: A behavioral perspective. *Journal of Policy Analysis and Management, 34,* 904–936.

Gibson-Davis, C. M. (2007). Expectations and the economic bar to mar-

riage among low-income couples. In P. England & K. Edin (Eds.), *Unmarried couples with children* (pp. 84–103). New York, NY: Russell Sage Foundation.

Gibson-Davis, C. M., Edin, K., & McLanahan, S. (2005). High hopes but even higher expectations: The retreat from marriage among low-income couples. *Journal of Marriage and Family, 67,* 1301–1312. http://dx.doi.org/10.1111/j.1741-3737.2005.00218.x

Greitemeyer, T. (2007). What do men and women want in a partner? Are educated partners always more desirable? *Journal of Experimental Social Psychology, 43,* 180–194. http://dx.doi.org/10.1016/j.jesp.2006.02.006

Guo, S. Y., & Fraser, M. W. (2009). *Propensity score analysis: Statistical methods and applications (Advanced quantitative techniques in the social sciences)*. New York, NY: Sage.

Jacobsen, L. A., & Mather, M. (2010). U.S. economic and social trends since 2000. *Population Bulletin, 65,* 1–16. Retrieved from http://www.prb.org/pdf10/65.1unitedstates.pdf

Johnson, M. D. (2012). Healthy marriage initiatives: On the need for empiricism in policy implementation. *American Psychologist, 67,* 296–308. http://dx.doi.org/10.1037/a0027743

Karney, B. R., & Bradbury, T. N. (1995). The longitudinal course of marital quality and stability: A review of theory, method, and research. *Psychological Bulletin, 118,* 3–34. http://dx.doi.org/10.1037/0033-2909.118.1.3

Lavner, J. A., & Bradbury, T. N. (2012). Why do even satisfied newlyweds eventually go on to divorce? *Journal of Family Psychology, 26,* 1–10. http://dx.doi.org/10.1037/a0025966

Leuven, E., & Sianesi, B. (2003). *"PSMATCH2: Stata module to perform full Mahalanobis and propensity score matching, common support graphing, and covariate imbalance testing"*. Retrieved from http://ideas.repec.org/c/boc/bocode/s432001.html

Luck, S. J., & Vogel, E. K. (1997). The capacity of visual working memory for features and conjunctions. *Nature, 390,* 279–281. http://dx.doi.org/10.1038/36846

Lyngstad, T. H. (2004). The impact of parents' and spouses' education on divorce rates in Norway. *Demographic Research, 10,* 121–142. http://dx.doi.org/10.4054/DemRes.2004.10.5

Mani, A., Mullainathan, S., Shafir, E., & Zhao, J. (2013). Poverty impedes cognitive function. *Science, 341,* 976–980. http://dx.doi.org/10.1126/science.1238041

Manning, W. D., Brown, S. L., Payne, K. K., & Wu, H. S. (2014). *Healthy marriage initiative spending and U.S. marriage & divorce rates. A state-level analysis (FP-14–02)*. Retrieved from National Center for Family & Marriage Research Website: http://www.bgsu.edu/content/dam/BGSU/college-of-arts-and-sciences/NCFMR/documents/FP/FP-14-02_HMIInitiative.pdf

McEwen, B. S. (2012). Brain on stress: How the social environment gets under the skin. *Proceedings of the National Academy of Sciences of the United States of America, 109* (Suppl. 2), 17180–17185. http://dx.doi.org/10.1073/pnas.1121254109

McLanahan, S. (2009a). *Family instability and complexity after a nonmarital birth: Outcomes for children in fragile families* (Working Paper 09–16-FF). Retrieved from Center for Research on Child Wellbeing Website: http://crcw.princeton.edu/workingpapers/WP09-16-FF.pdf

McLanahan, S. (2009b). Fragile families and the reproduction of poverty. *Annals of the American Academy of Political and Social Science, 621,* 111–131. http://dx.doi.org/10.1177/0002716208324862

Nepomnyaschy, L., & Teitler, J. (2013). Cyclical cohabitation among unmarried parents in fragile families. *Journal of Marriage and Family, 75,* 1248–1265. http://dx.doi.org/10.1111/jomf.12064

Newcombe, R. G. (1998). Interval estimation for the difference between independent proportions: Comparison of eleven methods. *Statistics in Medicine, 17,* 873–890. http://dx.doi.org/10.1002/(SICI)1097-0258(19980430)17:8<873::AID-SIM779>3.0.CO;2-I

Piketty, T., & Saez, E. (2014). Inequality in the long run. *Science, 344,* 838–843. http://dx.doi.org/10.1126/science.1251936

Rank, M. R., & Hirschl, T. A. (1999). The likelihood of poverty across the American adult life span. *Social Work, 44,* 201–216. http://dx.doi.org/10.1093/sw/44.3.201

Schneider, D. (2015). Lessons learned from non-marriage experiments. *Future of Children, 25,* 155–178.

Shah, A. K., Mullainathan, S., & Shafir, E. (2012). Some consequences of having too little. *Science, 338,* 682–685. http://dx.doi.org/10.1126/science.1222426

Thibaut, J. W., & Kelley, H. H. (1959). *The social psychology of groups*. New York, NY: Wiley.

Thomson, E., & McLanahan, S. S. (2012). Reflections on "Family structure and child well-being: Economic resources vs. parental socialization." *Social Forces, 91,* 45–53. http://dx.doi.org/10.1093/sf/sos119

Tzeng, J. M., & Mare, R. D. (1995). Labor market and socioeconomic effects on marital stability. *Social Science Research, 24,* 329–351. http://dx.doi.org/10.1006/ssre.1995.1013

West, S. G., Cham, H., Thoemmes, F., Renneberg, B., Schulze, J., & Weiler, M. (2014). Propensity scores as a basis for equating groups: Basic principles and application in clinical treatment outcome research. *Journal of Consulting and Clinical Psychology, 82,* 906–919. http://dx.doi.org/10.1037/a0036387

Wood, R. G., Moore, Q., Clarkwest, A., Hsueh, J., & McConnell, S. (2010). *Strengthening unmarried parents' relationship: The early impacts of Building Strong Families* (Technical Suppl.). Washington, DC: U.S. Department of Health and Human Services, Administration for Children and Families, Office of Planning, Research and Evaluation.

Wood, R. G., Moore, Q., Clarkwest, A., & Killewald, A. (2014). The long-term effects of Building Strong Families: A program for unmarried parents. *Journal of Marriage and Family, 76,* 446–463. http://dx.doi.org/10.1111/jomf.12094

Wood, R. G., Moore, Q., Clarkwest, A., Killewald, A., & Monahan, S. (2012). *The long-term effects of Building Strong Families: A relationship skills education program for unmarried parents* (OPRE Report 2012-28B). Washington, DC: U.S. Department of Health and Human Services, Administration for Children and Families, Office of Planning, Research and Evaluation.

Received March 21, 2016
Revision received August 21, 2016
Accepted August 25, 2016 ■